GODAN
Global Open Data
for Agriculture & Nutrition

GODAN'S IMPACT
2014 - 2018

IMPROVING AGRICULTURE, FOOD AND NUTRITION WITH OPEN DATA

Why Open Data for Agriculture and Nutrition?

The world population is expected to reach 9.8 billion by 2050, according to the United Nations[1]. As the population grows, so does the demand for food. Overall demand for agricultural products is expected to grow by 1.1% each year until 2050[2]. Climate change and the increasing demand for land and water will continue to make it difficult to grow crops and raise livestock. Global yields will need to increase in innovative ways in order to feed the growing population and ensure access to nutritious food for all.

Because open data is data that anyone can access, use and share[3], it is shaping solutions to problems that would otherwise be expensive, time intensive or impossible to solve using closed data sources. Through speeding up innovation, open data fosters collaboration between governments, businesses, NGOs and individuals to make new discoveries and help sustainably feed a growing population.

Open data can support innovation and economic growth, improve service delivery and effective governance. It can improve environmental and social outcomes for stakeholders participating in "innovation systems" and across value chains. Making open data work for agriculture and nutrition requires a shared agenda to increase the supply, quality, and interoperability of data, alongside action to build capacity for the use of data by all stakeholders.

[1] "World Population Prospects: The 2017 Revision ... - K UN.ORG." 21 Jun. 2017, https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html. Accessed 18 Jul. 2018.
[2] "World Agriculture towards 2030/2050: the 2012 revision - FAO." http://www.fao.org/docrep/016/ap106e/ap106e.pdf. Accessed 18 Jul. 2018.
[3] "Open Data Institute." https://theodi.org/. Accessed 18 Jul. 2018.

The GODAN Vision

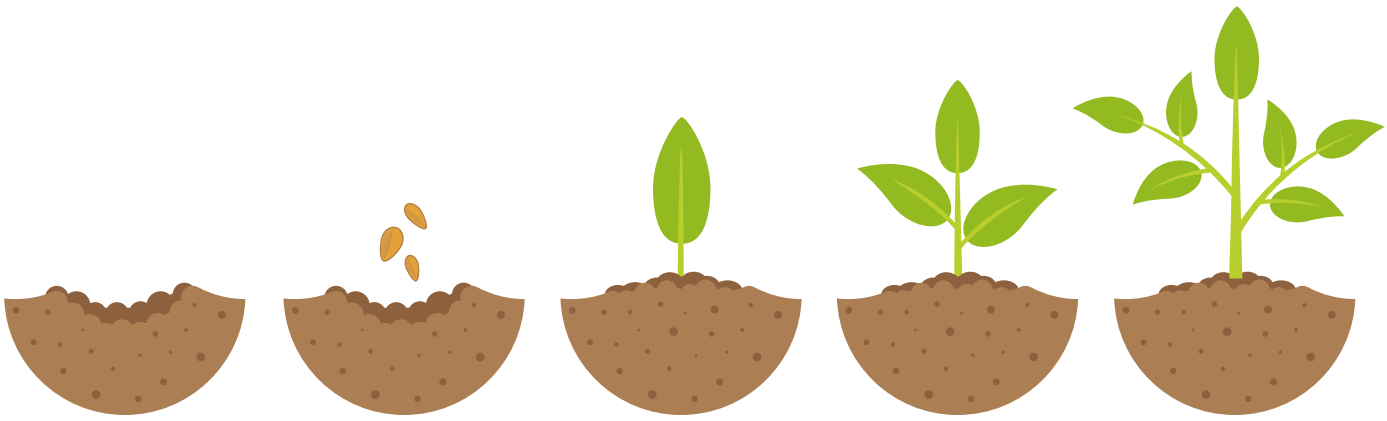
We are on the verge of an agricultural revolution, a revolution in which some of the longest standing and most potent of issues can be solved, by utilizing the boundless pool of knowledge at our disposal. G8 and G7 leaders believed in this revolution and so created The Global Open Data for Agriculture and Nutrition (GODAN) initiative at the Open Government Partnership Conference in October 2013. The vision of GODAN centred on the creation of a partnership network – an "ecosystem" of stakeholder organizations – supported by a well-resourced Secretariat. The Partner Network would represent diverse fields, specialisations, jurisdictions and sectors of the economy – advocating individually and collaboratively towards a joint Statement of Purpose[4] for open data.

The GODAN Partner Network and Secretariat advocates for open data, FAIR data[5] and open access policies in both public and private sectors, whilst respecting and working to balance openness with legitimate concerns in relation to privacy, security, community rights and commercial interests.

GODAN intends to improve the open availability, use and enrichment of data, and meaningful engagement with stakeholders, to enable impacts through:

- Data-driven decision making, innovation and business creation
- Improved service delivery
- New, improved and more accessible information products, empowering individuals, businesses and communities
- Increased transparency of decision making and accountability
- Increased access to data in disadvantaged constituencies that is already available to actors in well resourced contexts
- Increased interoperability of data
- Improved understanding of impact of open data
- Improved understanding of stakeholders on how to use and handle open data

When the GODAN vision was initially developed, the target number of partners by 2019 was 200. However, due to the advocacy efforts of the Secretariat and Partner Network, this number was reached in 2016, and by July 2018, there were over 765 partners with global and sectoral representation.



[4] "Statement of Purpose | GODAN." http://www.godan.info/pages/statement-purpose. Accessed 17 Jul. 2018.
[5] "The FAIR Guiding Principles for scientific data management and – Nature." 15 Mar. 2016, https://www.nature.com/articles/sdata201618. Accessed 18 Jul. 2018.

The GODAN Secretariat

The GODAN Secretariat helps make this a reality by fulfilling GODAN's Theory of Change:

1. **Convening the ecosystem:** bringing key actors together as members of the GODAN network, providing space for conversations, priority setting collaboration and ideas at events, showcases and data hacks.
2. **Equipping the ecosystem:** collecting and compiling tools, stories, case studies, and papers.
3. **Empowering the ecosystem:** advocating for high level political and policy actions that enable action on the ground, that unlock greater data availability, that create public commitments from key stakeholders, and that create space/funds for innovation/ activities for men and women.

Creating an Ecosystem of These Actors Requires:

(Secretariat Outcomes)

1. A common vision, agenda and set of objectives held by the community/network members
2. An overarching enabling policy, political and technical environment at the national and international level (e.g. commitments to publishing data, commitments to funding for innovation and projects on open data for agri projects)
3. Network effects (strong connections and alliances) from having time to meet, speak and build relationships that cross sectoral, geographic and thematic boundaries
4. Shared tools and evidence base for activities – assets, policy and advocacy messages, activity/data maps, case studies (this is also an Outcome for GODAN Action)

GODAN Action

GODAN Action[6] is a three year project funded by the Department for International Development (DFID) in the United Kingdom to enable data users, producers and intermediaries to engage effectively with open data and maximise its potential for impact in the agriculture and nutrition sectors. Whereas the focus of the Secretariat is building vision, advocacy and network engagement, GODAN Action builds capacity, standards and understanding of how to measure open data success. GODAN Action has examined three thematic data areas: weather data, nutrition data, and land use data. Through each of these themes, its work aims to strengthen capacity, promote common standards and best practice, and improve measurements of impact.

Capacity Development

GODAN Action held an e-Learning Programme on Open Data Management in Agriculture and Nutrition in 2017. The call for the first course attracted more than 500 applicants. As a result, over 200 researchers, data journalists, librarians, IT specialists, and policy makers from 29 developing countries (primarily Africa) were selected to participate. The second course trained 750 participants of which 30% were female. 1036 people have currently benefited from the delivery of GODAN Action's capacity building activities.

Short testimonies from participants show how the course has benefited them:

"This course actually changed my perspective on what I really thought open data was all about. I have a deep understanding of it and I can confidently move on with the concept that is built with this course."

"I will definitely use the data validation, cleaning, visualization and skills for promoting innovation and utilization of data that I have acquired from this course"

"My first step after this course is to scope out ways to implement in my field and also transfer knowledge using the lecturing platform"

"The Open Data Management course has been one of the most fulfilling data courses I have experienced. I am looking forward to applying what I have learnt in my practice as a researcher."

Standards

A common challenge to applying open data effectively is use of data standards. GODAN Action aims to improve data interoperability by mapping relevant standards and identifying gaps, and develop guidelines for standards and interoperability through an online platform for collaboration and dissemination.

To date GODAN Action has published three potentially transformative reports to define data standards in the sector:

1. Recommendations for filling identified gaps in data standards for food and agriculture[7]
2. A Map of Agri-food Data Standards[8]
3. Agri-food Data Standards: a Gap Exploration Report[9]

Impact Evaluation

Most initiatives and organizations want to see real impact with open data but struggle to understand the frameworks for measuring impact. GODAN Action has developed an impact evaluation framework and guidance material for open data initiatives and is now applying it in various areas in the agriculture and nutrition domain. Through its design, the framework can be used in different phases of open data initiatives, from effective project design, improving potential impacts, to intermediate process evaluations, and finally post-project outcome evaluation. The methodology was successfully tested on open weather data case studies.

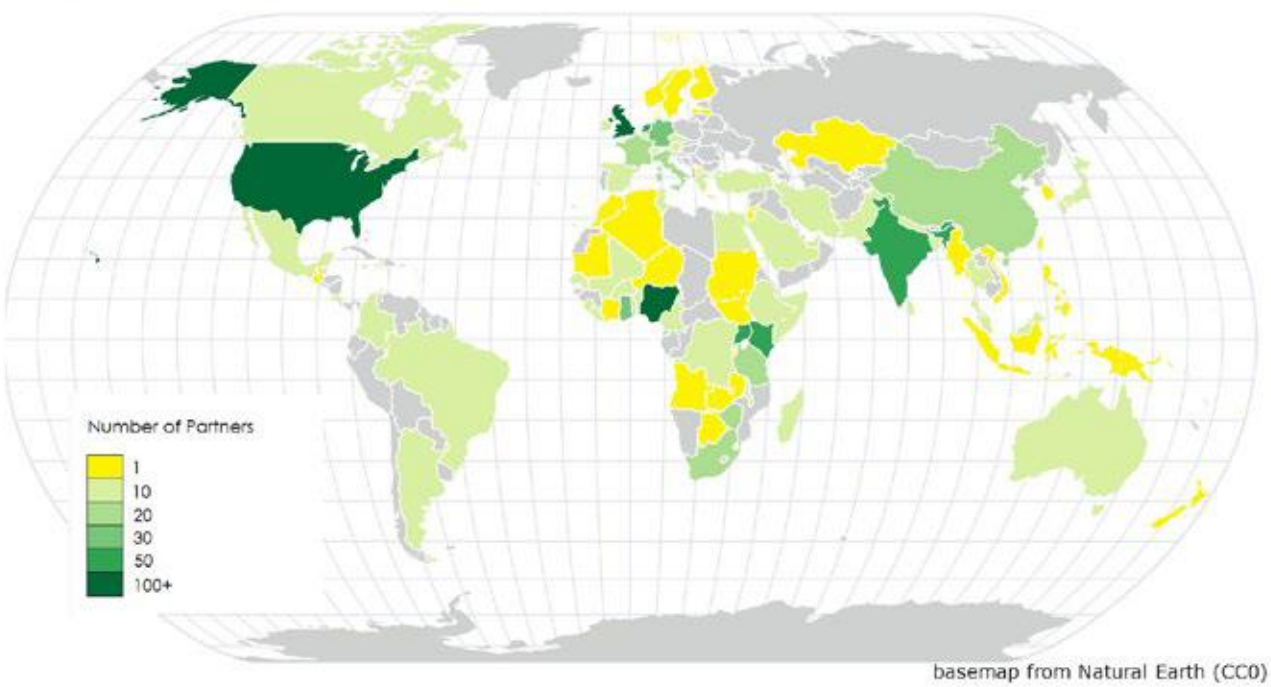
GODAN Action published its first document on impact evaluation entitled "A review of relevant methods and frameworks for impact evaluation of open data" in March 2018.

[6] "GODAN Action | GODAN – Global Open ...." http://www.godan.info/godan-action. Accessed 17 Jul. 2018.
[7] "Recommendations for filling identified gaps in data standards for food ...." 6 Jun. 2018, https://f1000research.com/documents/7-703. Accessed 17 Jul. 2018.
[8] "A Map of Agri-food Data Standards – F1000Research." 12 Feb. 2018, https://f1000research.com/documents/7-177. Accessed 17 Jul. 2018.
[9] "Agri-food Data Standards: a Gap Exploration Report – F1000Research." 12 Feb. 2018, https://f1000research.com/documents/7-176. Accessed 17 Jul. 2018.

The GODAN Partner Network

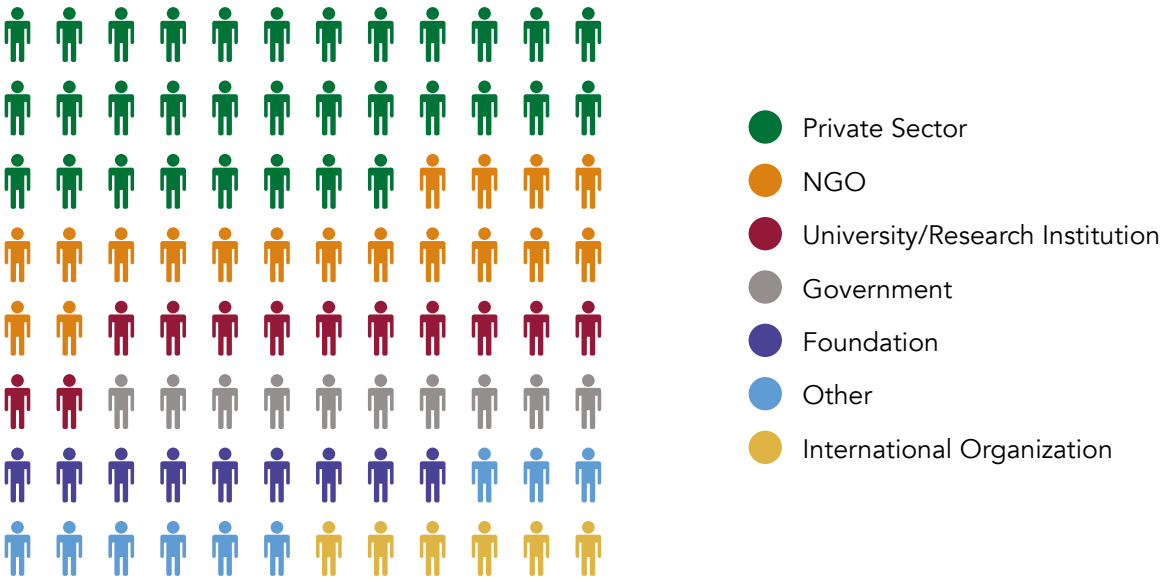
While GODAN is facilitated by a Secretariat, the GODAN Partner Network is the primary driving force behind the success of GODAN. The GODAN Network is truly global, with representation from every populated continent.

Map of GODAN Partners



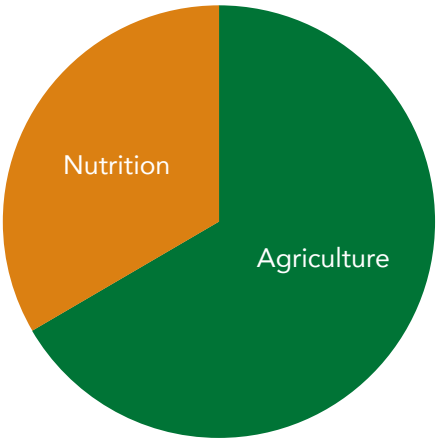
Open data requires the buy-in of the sectors who operate in agriculture and nutrition. Due to GODAN's extensive advocacy efforts, all are well represented within the GODAN Partner Network. The Network is a diverse mix of public, private, international and local actors. The strong representation of private sector organisations from large multinationals to tech-centric SMEs reflects the growing importance of open data in commerce.

Sector Distribution of the GODAN Network

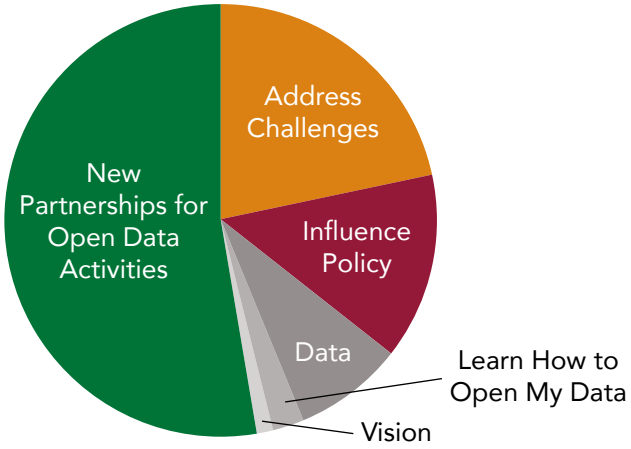


At the current time, most of GODAN's advocacy efforts have been focused on agricultural data. This has led to a stronger partner base who work in agriculture (⅔ of the GODAN Partner base). However, ⅓ of the partners work in the nutrition sector, which provides GODAN with many opportunities for enhancing work in opening nutrition data.

About 2/3 of GODAN Parners work primarily in Agriculture, while 1/3 work in Nutrition

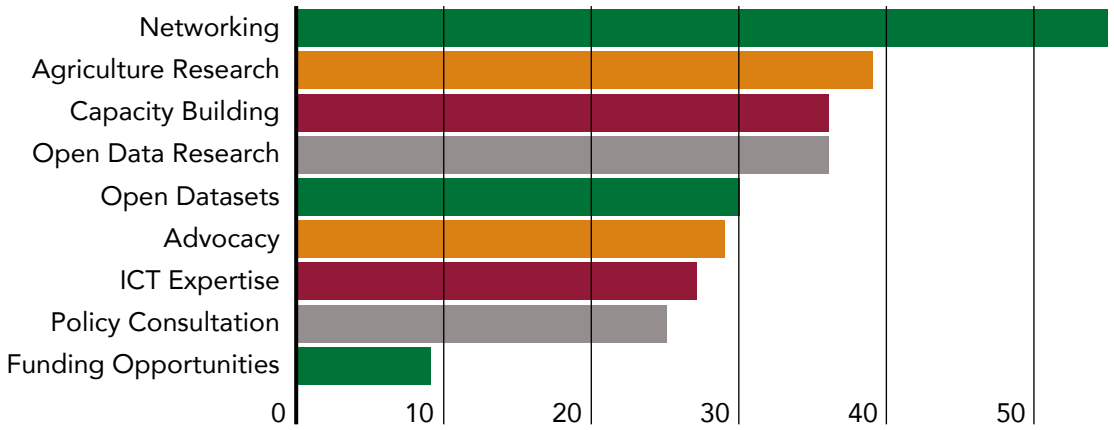


What does your organization hope to gain from joining GODAN?



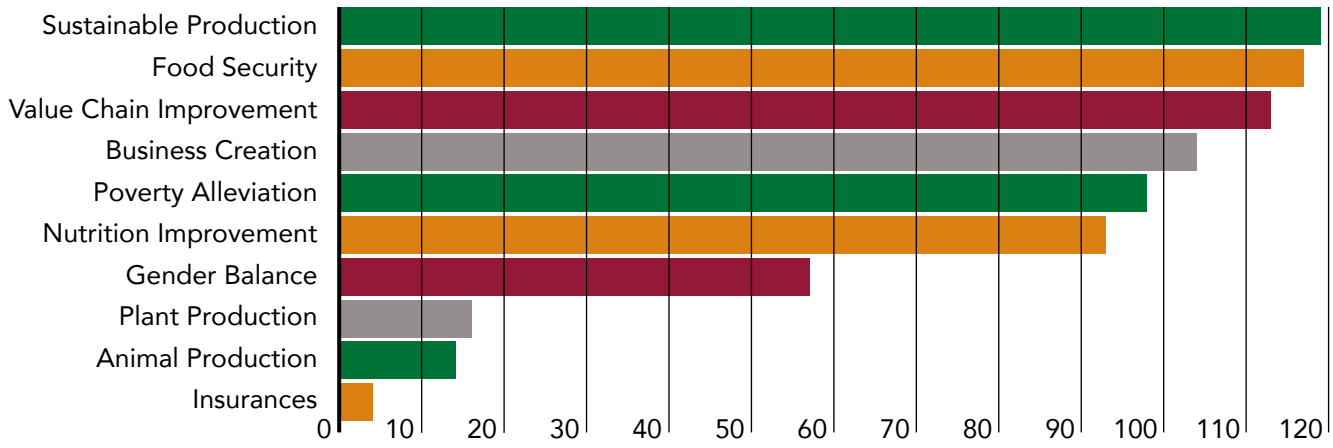
When GODAN Partners join the network, they complete a Partner Survey which helps the Secretariat to know what the partners offer the network, what they hope to gain, and what open data activities they are working on. This also helps the Secretariat to understand what matters to them and where efforts are best directed to meet real need. Most of all, partners want to meet others, to understand the experiences of others working with open data and to forge new meaningful alliances for action.

What do you offer to the GODAN Partner Network?

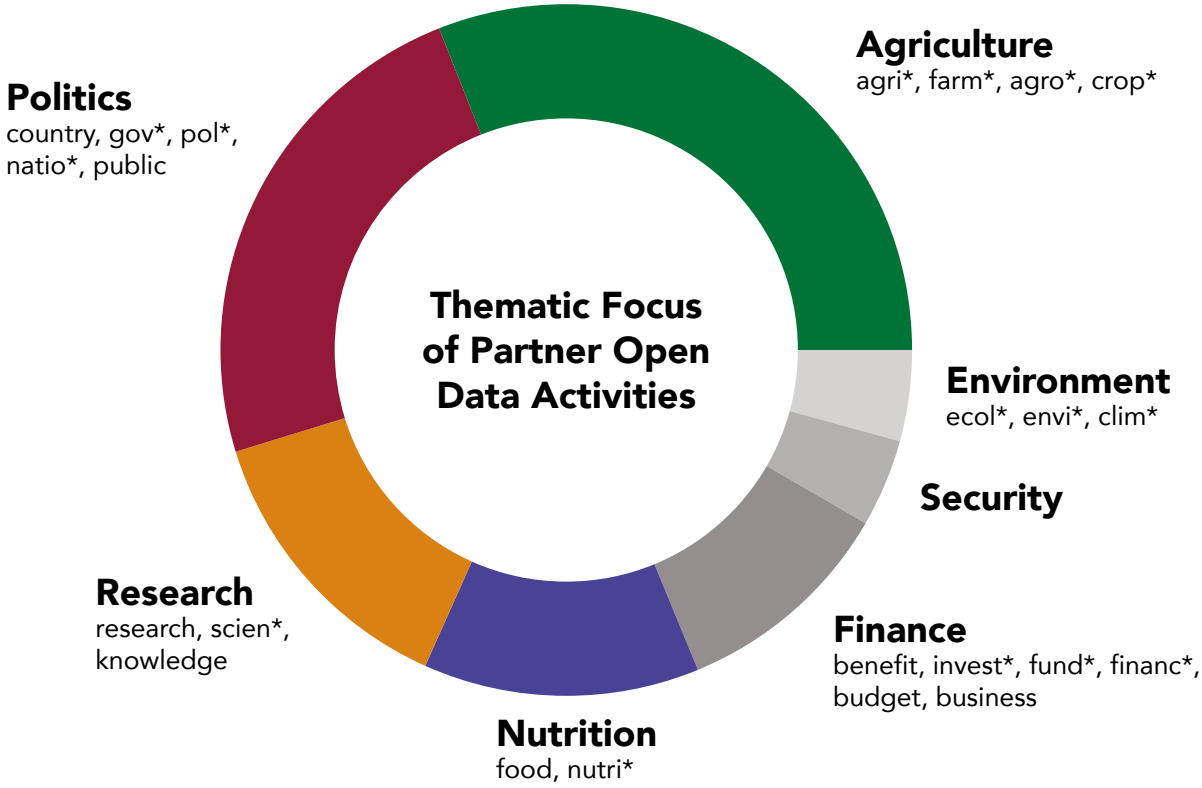


GODAN Partners mostly use open data to tackle issues surrounding sustainable production and food security, to improve value chains and to create new business. Open data activities focus on agriculture, with an added focus on governance, addressing development and business. GODAN aims to increase its engagement more in the nutrition improvement space and by making more meaningful interventions to address gender balance.

GODAN Partners use open data to support these agendas:



When partners run projects or activities with a major open data focus, many issues can be addressed in a single project. Analysis of how partners describe those projects helps us understand the core thematic areas they work on.



Although GODAN advocates for open data, the Secretariat understands that opening up datasets may not always be easy. Challenges to doing this are technical, cultural, political, and institutional. The following challenges are the most common ones stated by the GODAN Partner Network.

Open Data Challenges

Financial cost
The most common challenge mentioned by GODAN Partners when working towards open data

Political Buy-In
GODAN Partners struggle to convince high-level actors (both government and private sector) to commit towards open data

Benefits to Farmers
GODAN Partners want to make sure that open data benefits farmers, but struggle to ensure this happens

Data Standards
GODAN Partners want to better manage their data, but want to know best practices and data standards

GODAN has worked closely with donors and governments to advocate for high-level buy-in as well as developing capacity building resources for civil society for continuing advocacy. GODAN has encouraged the funding of open data projects, specifically those that demonstrate clear benefits of open data to farmers. GODAN Action has published papers on Agri-Food Data Standards and GODAN has hosted two working groups associated with aligning agriculture and nutrition vocabularies; the Global Agricultural Concept System (GACS)[10] and the "Publication and alignment of authoritative vocabularies for food Working Group"[11]. It has also worked to support development of soil and agronomy data standards.

[10] "Agrisemantics: Semantics for Interoperability of Agricultural Data." http://agrisemantics.org/. Accessed 17 Jul. 2018.
[11] "Publication and alignment of authoritative vocabularies for food ...." http://www.godan.info/working-groups/publication-and-alignment-authoritative-vocabularies-food-working-group. Accessed 17 Jul. 2018.

GODAN's Reach

GODAN's message has reached close to 25 million people through its website, social media and other traditional media channels.

23,850,872

Total GODAN Reach

16,132,130

Total GODAN Social Media Reach

13,700+

Followers on Social Media

10,000

Downloads of GODAN reports and resources from 2017 to 2018

765

Total number of GODAN partners

401

Number of open data activities GODAN Partners have worked on

104

Number of countries represented in the GODAN Network

GODAN's Impact

Donor and University Open Data Policy and Practice

Researchers in the agriculture sector are increasingly encouraged to open data from their field research and activities in order to address the complex challenges around food security and sustainability. But as funding institutions introduce their own open data policies, researchers are now asked to respond to multiple requests and requirements. GODAN and the Open Data Institute published a report on Donor Open Data Policy and Practice[12], which focused on jointly funded grantees from the Bill and Melinda Gates Foundation, the Department of International Development in the United Kingdom (DFID) and the United States Agency for International Development (USAID). The report clarified opportunities for donors to make open data implementation more efficient and streamlined for their implementing research partners. Following the report, the Gates Foundation, DFID, and USAID signed a joint donor statement at the Committee for Food Security 44 in Rome committing to a dialogue towards more harmonized donor open data policies[13].

Following the report, CABI (Centre for Agriculture and Biosciences International), GODAN and the Open Data Institute (ODI) carried out a six-month consultation for the Gates Foundation (Jan 2018 – June 2018) entitled "'Enabling Data Access to Support Innovation in Decision Agriculture", to focus on a subset of grantees from their Agricultural Development portfolio. The consultation aimed to understand what data was needed, collected and shared within the data ecosystem of a specific region where the subset of grantees were carrying out their work. The project involved research on existing agronomy programmes to understand their data ecosystems and the challenges faced with publishing and using FAIR and open data. The result was a practical collection of guidance, data ecosystem maps, and regional level data management roadmaps to help a variety of stakeholders find and apply best practices that will encourage the publication and use of FAIR and open data. As a result of the consultation CABI and ODI have been asked to support development of data sharing policy in Ethiopia.

The Presidents United to Solve Hunger (PUSH) Initiative completed a complementary report on Open Data and Open Access at Universities[14]. This delved more deeply into how university administration approaches data management and ownership, and further highlighted the role of donors and universities in improved data management processes to support high quality research.

Nairobi Declaration

GODAN held the first Ministerial Conference on Global Open Data for Agriculture and Nutrition, in June 2017 in Nairobi, Kenya. The event brought together a number of nations to build efforts in Africa and the broader Global South, to ensure every country is producing the data needed to achieve the agriculture and nutrition security related goals in local, continental agendas and the 2030 Agenda. The outcome was a historic declaration from Kenya and 15 African Ministers from Sudan, Uganda, Ghana, Rwanda, Sierra Leone, Republic of Congo and South Sudan in support of comprehensive open data collaboration. This pan-African collaboration is under the auspices of the African Union and is guided by the UN Comprehensive Africa Agriculture Development Programme (CAADP). It is under Africa's policy framework for agricultural transformation, wealth creation, food security and nutrition, economic growth and prosperity, and the Malabo Declaration.

12 "Donor open data policy and practice: an analysis of ... - F1000Research." 27 Oct. 2017, https://f1000research.com/documents/6-1900. Accessed 17 Jul. 2018.
13 "Join the Donor Open Data Dialogue! | GODAN." 24 Oct. 2017, http://www.godan.info/news/join-donor-open-data-dialogue. Accessed 17 Jul. 2018.
14 "Open Access & Open Data at PUSH Universities - Auburn University's ...." http://wp.auburn.edu/push/wp-content/uploads/2018/06/GODAN-report.pdf. Accessed 17 Jul. 2018.

The sixteen article statement[15] from the ministers calls for a data revolution for Africa that improves the quality of statistics for citizens and supports the sustainable development goals. Respecting that privacy, community, commercial rights and security need to be considered, the ministers nonetheless acknowledged the important transformative role that open data could have for agricultural, nutrition security and inclusive value chains. Since the declaration the ministers have agreed to meet again in late 2018 to take the agenda forward. At a meeting in March 2018, convened by FAO, a group of senior ministerial advisors from Kenya plus NGOs, IGOs and the private sector formed a planning group for this event.

A support mechanism – an intergovernmental working group – hosted by Kenya with the support of GODAN Secretariat, the Food and Agriculture Organization (FAO), the Alliance for a Green Revolution in Africa (AGRA) and other development partners has agreed to build a constituency of stakeholders that share the principles of open data and the data revolution as a driver of agricultural growth and transformation; strengthening country internal open data ecosystems (policy, people, tools, regulations and ICT platforms) to produce and release in open standards, timely, accurate and reliable data for agriculture and nutrition; and facilitate a Community of Practice that ensures capacity and capabilities on agriculture data are shared and responsive to the contexts and challenges of the developing countries. The Government of Kenya is at the same time keen to develop a domestic open data policy with an emphasis on agriculture, nutrition and food security, and has asked GODAN and this broader group for support.

Government Open-Up Guide for Agriculture

GODAN created the Government Open-Up Guide for Agriculture (previously known as the AgPack) in partnership with the Open Data Charter[16] and Open Data Institute. The project began in 2016 and aims to guide governments to identify and publish data sets that may be relevant for the agricultural sector, and could catalyze sustainable agricultural production in support of the second Sustainable Development Goal: Zero Hunger (SDG2). The Open Up Guide was first published under the title "Introducing the Agriculture Open Data Package: Beta Version"[17]. It was launched at the 2016 Open Government Partnership in Paris. Since then, workshops to validate the Open Up Guide have been carried out in the Netherlands, the 2017 Africa Open Data Conference in Accra, Ghana, and the 2017 GODAN Ministerial Conference in Nairobi, Kenya. These consultations have led to improved recommendations and insights. GODAN plans to launch the updated Government Open Up Guide for Agriculture in 2018, which will include recommendations, case studies, and tools for improved data management and release.

Partnership on farmers harnessing the power of data

Data-driven farming is expected to increase agricultural production and productivity, help adapt to or mitigate the effects of climate change, bring about more economic and efficient use of natural resources. To reduce risk and improve resilience in farming, and make agri-food market chains much more efficient. However, many farmers are not harnessing the power of data because of unequal access to quality data and fear of exposure to unfair use of data collected on the farm. To address these challenges, the ethical, legal and policy aspects related to farmers' data and farmers' access to data are now seen as key.

After publishing two papers on data ownership and responsible use of data in 2016[18,19], GODAN, together with the Global Forum on Agricultural Research and Innovation (GFAR)[20] and the Technical Center for Agricultural and Rural Development (CTA)[21], initiated a consultation process to explore the main challenges and opportunities of harnessing the power of data for farmers. To recommend strategies and priority areas of intervention at the legal / policy level and then act on these recommendations. The process started with a workshop and symposium involving 47 participants in Centurion, South Africa, in November 2017[22].

This continued in 2018 with a series of six co-convened webinars on farmers' access to data, with over 200 participants and reaching more than 600 viewers.

15 "Nairobi Outcome Document Final Ministerial Draft.pdf – FAO." 15 Jun. 2017, http://www.fao.org/fileadmin/user_upload/drought/docs/Nairobi%20Outcome%20Document%20Final%20Ministerial%20Draft.pdf. Accessed 18 Jul. 2018.
16 "Open Data Charter." https://opendatacharter.net/. Accessed 18 Jul. 2018.
17 "Introducing the Agricultural Open Data Package: BETA Version | GODAN." 13 Dec. 2016, http://www.godan.info/news/introducing-agricultural-open-data-package-beta-version. Accessed 17 Jul. 2018.
18 "Ownership of Open Data: Governance Options for Agriculture and ...." 15 Sep. 2016, http://www.godan.info/documents/ownership-open-data-governance-options-agriculture-and-nutrition-0. Accessed 17 Jul. 2018.
19 "Responsible Data in Agriculture | GODAN." 15 Sep. 2016, http://www.godan.info/documents/responsible-data-agriculture. Accessed 17 Jul. 2018.
20 "GFAR: Homepage." http://www.gfar.net/. Accessed 18 Jul. 2018.
21 "CTA." https://www.cta.int/en/. Accessed 18 Jul. 2018.
22 "Learning about data for farmers and how it can help to "cross the ...." 20 Dec. 2017, https://blog.gfar.net/2017/12/20/learning-about-data-for-farmers-and-how-it-can-help-to-cross-the-donga/. Accessed 18 Jul. 2018.

This was followed by the publication of a white paper on "Digital and Data-Driven Agriculture: Harnessing the Power of Data for Smallholders", which has had around 1000 views and more than 300 downloads, and the creation of a staff position to undertake research on data rights in the GODAN Secretariat, funded by the Kuratorium für Technik und Bauwesen in der Landwirtschaft e.V. (KTBL).

This process culminated in an online consultation with over 50 participants and 150 interventions held in June, and an international expert consultation held on 10 and 11 July, hosted by the German Federal Office of Agriculture and Food (BLE). Participants in the expert consultation worked on a common vision document and a more immediate common action plan, building on the results of the online consultation and on previous publications. Experts from the World Farmers' Organization, CEMA-AGRI, Rikolto, the Australian Centre for Intellectual Property in Agriculture, the German Federal Office of Agriculture and Food, GIZ, the Uganda Agribusiness Association, CSIR South Africa, the Georgia Association for Farmers Rights Defense, the Sociedad Peruana de Derecho Ambiental, Wageningen University, the Zimbabwe Community Technology Development Organization and other independent consultants agreed to continue refining the common vision and action plan, to broaden the network and jointly look for funding to implement the action plan.

Data Ecosystem and the Farm Data Train

Following the second Creating Impacts with Open Data Workshop in The Hague in 2015[23] the GODAN Secretariat was asked by Syngenta to co-develop a vision paper on creating a 'Global Data Ecosystem for Agriculture and Food[24]. In this vision paper, GODAN partners have articulated what is needed to create a data ecosystem for agriculture and food. The report discusses incentives for sharing, publishing, using and re-using data and the importance of frameworks such as the FAIR Data Principles and Five Star Open Data[25]. Key GODAN partners commented on the vision paper and the content has been used in the eROSA project advising the European Commission on a "Roadmap for a pan-European e-Infrastructure for Open Science in Agricultural and Food Sciences". Additionally the GODAN Secretariat, CABI, the Dutch Techcentre for Life Sciences (DTL) and Wageningen University and Research have created an animated documentary on the FAIR Data Train (FDT)[26]. In the FDT animation, the potential use of the FAIR Data Principles in the Agriculture and Nutrition domain is visualized to encourage stakeholders in these domains to apply them in real-word contexts.

23 Summary on the Second Creating Impacts with Open Data for Agriculture and Nutrition Workshop. 2015 The Hague. https://www.godan.info/summary-report-2nd-international-workshop-godan/ Accessed 17 Jul. 2018.
24 Dean Allemang, Bobbin Teegarden, 2016. "A Global Data Ecosystem for Agriculture and Food". https://f1000research.com/documents/6-1844 Accessed 18 Jul. 2018.
25 "5-star Open Data." 31 Aug. 2015, http://5stardata.info/en/. Accessed 18 Jul. 2018.
26 "The Farm Data Train" https://www.dtls.nl/fair-data/farm-data-train/ . Accessed 17 Jul. 2018

The 2016 GODAN Summit

The GODAN Summit was the first global conference to advance the role of open data for agriculture and nutrition in addressing long standing global food security issues. The event brought together 792 world leaders, researchers, farmers and students from 46 countries. The outcomes included the announcement of a new open data partnership for public health from the USDA and the launch of an extensive branded food products database with nutrition details. The event was covered by the media worldwide and reached 5.2 million people through 150 outlets.

GODAN Success Stories

Soil Data Working Group

Soil data is crucial for decision-making in both agriculture and nutrition sectors. The International Soil Reference and Information Centre (ISRIC) leads the GODAN Soils Data Working Group (WG)[27] with 60 members in 40 organisations, in 20 countries. The members have recognised that soil data is key to address current global challenges and their mission is to help catalyse the development of a federated global soils information system (GLOSIS) which the Global Soils Partnership (GSP) is currently establishing[28]. The Involvement of GODAN partners in the working group gives the necessary broader societal support to soil data specialists who are working on increasing the exchange of data through better standards. Involvement allowed ISRIC and the group to engage a new stakeholder group, focusing on use cases (sustainable land management; food security; land degradation; soil organic carbon) and developing open standards in those contexts.

The Need for Nutrition Education Programme (NNEd Pro)

GODAN and the Need for Nutrition Education Programme (NNEd Pro) partnership was formalised following the 2016 GODAN Summit in New York City. GODAN's past expertise had been primarily focused on agriculture and food. The partnership with NNEdPro seeks to significantly increase GODAN's understanding of nutrition data, while GODAN has supported NNEdPro's approach to open data. GODAN and NNEd Pro have worked together on a Nutrition Open Data Strategy which unites their common goals in agriculture, nutrition and food systems.

AgroDataCube

The AgroDataCube[29] provides a large collection of both open data and derived data for use in agri-food applications in the Netherlands. It acts as an accelerator for innovation for companies and researchers to develop applications and launch research projects. It has reached 240 users in 3 months and was used in 4 hackathons in 6 months. It will be integrated into smart farming applications, with 5 private companies and platforms already building applications on it. It was initiated by Wageningen UR and the Ministry of LNV in the Netherlands thanks to the awareness raised by GODAN for it as a platform to raise the operational usability of open data for agriculture. AgroDataCube API is fully open source.

agro data cube

27 "Soil Data | GODAN." http://www.godan.info/working-groups/soil-data. Accessed 17 Jul. 2018.
28 Progresses on the Global Soil Information System. http://www.fao.org/global-soil-partnership/resources/highlights/detail/en/c/1026182/. Accessed 17 Jul. 2018
29 AgroDataCube https://agrodatacube.wur.nl/ Accessed Jul. 17 2018.

Centre for Agricultural Networking and Information Sharing (CANIS)

University of Nairobi's CANIS is a network of agricultural value chain actors that address the challenge of Food and Nutrition by ensuring the right knowledge is delivered to those that need it. Due to its partnership with GODAN and the use of open data, the Centre is now able to link students to materials for their work, with strategic partnerships with other institutes including the University of Nottingham.

"CANIS is now considered an anchor for data related work in the University of Nairobi and Kenya more generally."

"The Kenyan National Bureau of Statistics has indicated that they would like to use us now to be the avenues for the collection of the data on agriculture and livelihoods in rural communities and this has come out of this engagement that is driven by open data. The coming of GODAN has made everybody realise that this is actually the right direction because we are learning ourselves, with the SDGs. Now when I talk about big data and open data everybody is actually listening." – Kiringai Kamau, Steering Committee for Capacity Building for Open Data, Advisor for Kenyan Government, Executive Director, CANIS.

FarmHackNL

"FarmHack.NL is an open source Dutch partnership[30] *that is building a rich and diverse ecosystem around farmers consisting of tech savvy coders, creative designers and committed business developers. FarmHackNL has organised more than 15 open data Hackathons with around 450 participants. We want to take an open, agile and farmer-centric approach to problem solving and innovation in agriculture. We also aim to make food and agriculture attractive for a wide range of creative tech minded entrepreneurs and help farmers gain more actionable insights from their data by sharing it with others. As FarmHackNL we believe that critical support and know-how for the future of open data is scattered between policy and board meetings on the one hand, and day-to-day decision making on farms on the other. GODAN helps bridge the divide between different levels and degrees of involvement – both by being actively involved as an organisation on all different levels, and supporting others to do the same."* Anne Bruinsma, Netherlands.

Cross River State links 50,000 smallholder farmers to agricultural data

Smallholder farmers rely on the rain for their production and need weather prediction data to make important farming decisions. The Cross River State Government in Nigeria has added 50,000 farmers to its database and linked them to dynamic input related platforms where they can access agricultural data. Farmers can now access weather data from the Nigerian Meteorological Institute as soon as it is released. The government has also linked the farmers to extension providers within the local government of Cross River State. *"Without GODAN we wouldn't be where we are because they facilitated this, especially in training materials and providing us with up to date information linked to open data sources online."* Sonigitu Ekpe, Assistant Director of Agro Biodiversity, Cross River State, Nigeria.

30 "FarmHackNL"https://www.farmhack.nl/en/ Accessed Jul 17. 2018

CocoaSoils

CocoaSoils is a NORA funded 5 year project, establishing long term trials on cocoa, fertilization, and production. It works across the globe with trials in 6 countries working with over 90,000 farmers while also considering aspects of deforestation, child labour and ecosystem services. The partnership is led by IITA, WUR and IDH, and involves a range of companies: Mondelez, Nestle, Barry Callebaut, Mars, Yara, ICL, and research institutes: CIAT, UN WCMC, and institutes for cocoa in Ghana and Cote d'Ivoire. Thanks to the GODAN advocacy for open data, the partnership leadership has committed to publish all data as fully open (CC-BY) upon becoming available. While the data of the current project is the first step, it is envisioned that other data sources on cocoa can also be captured as part of the project.

Food Composition Database – USA

The USDA was driven to create the Food Composition database to launch at the GODAN Summit in 2016. This is all made possible through the open and public nature of the USDA Food Composition database. This standard reference work is commonly quoted by popular health news articles and scientific publications alike, and is now accessible to others through an open machine readable interface – an API. Using an API to provide REST access to the USDA Food Composition Databases assists application developers to include nutrient data into their applications or websites. For the first time the API provides Food Reports, which list nutrient values for 7,793 foods, for anyone to access.

Syngenta

Syngenta's mission is to improve the sustainability of agriculture and business through six commitments in line with the Sustainable Development Goals (SDGs). Syngenta aims to reach over 20 million smallholder farmers with their 'Good Growth Plan' by 2020, providing tools and training that make agriculture more productive, efficient and profitable. Syngenta supported the development of the GODAN – A Global Data Ecosystem for Agriculture and Food[31] publication, which was originally scoped between them, the Open Data Institute and the GODAN Secretariat as a 'think piece' for Syngenta. Together we agreed that it would be better to innovate and have our deliberations in the open. Data managers and scientist at Syngenta report how being able to discuss data issues in the open allowed them to promote their publishing of the 'Good Growth Plan' to a wider audience, to engage their own external affairs team in data issues and to present issues of open data and open data innovation in the Syngenta corporate annual report for the first time.

ESOKO

GODAN partner ESOKO, a mobile service in 16 countries across Africa, has given 350,000 farmers access to weather and market data through their phones and web-based tools for data collection coupled with field deployment, as well as an SMS/voice-based communication platform for farmer management and an electronic extension mobile and web app. The open data is obtained through existing channels such as weather data, farmers and partners such as FAO, and is utilized for a self sustainable business model that combines farmers, markets/dealers, phone companies, and other basic technology for an open system that benefits hundreds of thousands. Esoko allows farmers and buyers to receive open data information for more fair pricing and improved access to markets, based on customer feedback. This has led to a 25% net increase in income for farmers across those countries. Farmers say that Esoko's weather alert helps them better plan their planting time, saving both money and time.

"I am happy to say that this year I planted only once and my maize is doing well. The weather alert has made me know when to plant." Clement Ang-Laming, Esoko Farmer, Ghana.

31 Dean Allemang, Bobbin Teegarden, 2016. "A Global Data Ecosystem for Agriculture and Food". https://f1000research.com/documents/6-1844 Accessed 18 Jul. 2018.

What people say about GODAN

Convening

"Kenya, through the office of the Cabinet Secretary was accepted to be the champion of GODAN in Africa and G77 countries in 2016. The GODAN Secretariat supported Kenya to host the first GODAN African Ministers conference in June 2017. Since then, Kenya has received capacity building and support to enable Kenya to initiate web-based portals for open data sharing. Kenya is also developing the African GODAN network and planning to support Uganda to host the second African conference in December 2018." Tom Dienya, Head of Agriculture Statistics Unit, Ministry of Agriculture and Irrigation, Kenya.

"GODAN has sponsored our trips to great events that led to partnership with the ODI for a pilot enumeration of farmers. This has contributed to the improvement of the State Government Agro policy and dramatically improved our agro activities. The governor now supports several agripreneur programs." Lambert Ugorji, Managing Director, Edo State ICT Agency – Open data.

"We work with several partners including farmer organizations. To date ASARECA has benefited as part of the organizations that are involved in discussions about opening data sources for smallholders farmers especially in sub saharan Africa". Moses Odeke, Program Officer, Monitoring and Evaluation, ASARECA.

"We have benefited immensely from GODAN programs most especially around the sponsoring of the 2017 Africa Open Data Conference Held in Ghana". Wisdom Donkor, Engineer/Technical Lead Ghana Open Data Initiative Africa Open Data and Internet Research Foundation.

"The awareness and knowledge imparted via GODAN has been invaluable in our journey. Being able to understand and correlate data needs is a skill second to none. The contacts we made through GODAN have greatly improved our profile." Genevieve Leveille Ms. CEO, AgriLedger.

"We were honored to begin our work with GODAN by helping plan the GODAN Summit in New York in 2016. Since then PUSH at Auburn University has been an active participant in research and communications of the importance of open data in eliminating hunger. GODAN is one of the key organizations that connects universities in the open data movement." Anne Mims Adrian, Open Data Project Manager, Hunger Solutions Institute.

"As a result of GODAN we have benefitted from a range of networking opportunities." Richard Tiffin, Chief Scientific Officer, Agrimetrics Ltd.

Equipping

"GODAN has benefited my organization in many ways: First of all GODAN provided a webinar series that our employees followed up and learned from. Second by the help of GODAN Action group, we benefited from their online materials on the principles of open data; how to make data open, and intellectual property issues. Recently we submitted a mini grant fund proposal to conduct workshops on the main GODAN Action themes: land, weather and nutrition related open data". Habtamu Keno Dessa, Lecturer, Ambo University.

"The partnership has enriched our audience engagement and advocacy campaign for open data on agriculture and nutrition in Nigeria." Mr Celestine Okeke, Lead Partner Sustainable Entrepreneurship & Economic Development Initiative (formerly MSME-ASI).

"Green Shoots Foundation has been running a school vegetable garden program in Cambodia since 2012. Resources from GODAN have helped us develop the program and improve our delivery greatly. We hope connections made in the future will enable us to scale up and continue work in this sector." Muneezay Jaffery Ms Operations Manager Green Shoots Foundation.

"The GODAN April 2018 online training we received has improved our organization in policy making and ethical practice on open data and other datasets." Mutiu Adeshina, Founder/CEO, Muttex Global Concept Limited.

"GODAN has increased our access to tools and resources on open data for agriculture which we are currently utilizing in our current project FarmAccess, an intermediary related service, which involves data acquisition, utilization and distribution for the benefit of smallholder farmers and agro processors. The AgroPaths Development Initiative has gained capacity in open data management for agriculture and nutrition through GODAN's shared tools and resources, e-learning courses, webinars and participation in groups that are offshoots of GODAN's activities, especially the GODAN Capacity Development Working Group." Martin Ubur, National Coordinator AgroPaths Development Initiative.

"As a partner, our organization has benefited from GODAN a lot; now EIAR is connected and updated on open data for agriculture. Personally I have benefited from resources and online courses which broaden my knowledge on open data specifically for Agriculture and Nutrition." Tadesse Anberbir, ICT Director Ethiopian Institute of Agricultural Research (EIAR).

"GODAN gives us strong guiding principles, reputation and networking to support delivery of the SDGs". Steve Keyworth, Director, Environment Systems.

"GODAN is an important space for knowledge and experience in open data and agrifood, and helps us to be connected to the use of data in the agrifood sector." Christopher Brewster, Senior Scientist, TNO.

"I am using P4ACAD, a direct product of GODAN Action, to promote the student led Agricultural Extension (SLAE) in as many universities and subnational governments many of which have been helped by my work with GODAN Action. Out of the GODAN Action courses, we have been able to transition our programme from a pure academic programme to one that is driven by the application of Open Data paradigms across universities rather than what our centre was doing within our own universities. We have been able, jointly with the trainers I have selected to participate with me, to create a company limited by guarantee (a social enterprise) to promote an open data agenda in Africa – the Programme for Agricultural Capacity Development in Africa (P4ACAD Africa)." Kiringai Kamau.

Empowering

"GODAN has played a central role in bringing the attention of policy makers in government, academia and industry to the need for opening research and program data for better decisions and (ultimately) global food security. With the increasingly international nature of food, agriculture and natural resources research, open data is one of the platforms needed to speed innovation and deliver new products and know-how to farmers." Dr Cathie Woteki, former Under Secretary for United States Department of Agriculture's (USDA) Research, Education, and Economics (REE) mission area; Department's Chief Scientist.

"GODAN is a key partner to help us stay aware of the larger strategic landscape." Brian King, Coordinator, CGIAR Platform for Big Data in Agriculture.

"GODAN helps us in achieving impact goals in policy and in making linkages to new partners" Christopher Addison, Senior Programme Coordinator, CTA.

"The internal levels of awareness on agricultural data sharing and openness have increased as a consequence of the closer interaction between Embrapa and GODAN. An important recent development is the fact that Embrapa has proposed the theme 'Open Science' to be prioritised in the 4th National Action Plan of the Open Government Partnership. The theme was approved, meaning that Embrapa will facilitate a national discussion around Open Data and Innovation, involving relevant actors and with an initial focus on agriculture. I understand that the partnership with GODAN was crucial for these recent developments." Patricia Bertin, Supervisor for Information Governance and Transparency, Embrapa, Brazil.

"They have given us good exposure to best practices in mobilizing for better information on activity in the agricultural sector of the Nigerian economy – holding government accountable and sensitizing sector stakeholders to the need for more robust engagement with the state." Richard-Mark Mbaram, Chief Executive Officer, AgroNigeria.

"It's a forum for us all to at least try to make tangible meaningful change, that brings thought leaders together" Richard Williamson, CEO, Generation 10 Ltd.

"Through our involvement in the GODAN Network we have been asked to demo Fruit Look in an Al Jazeera documentary which have helped us to get more exposure in our target area." Annemarie Klaassens, eLEAF.

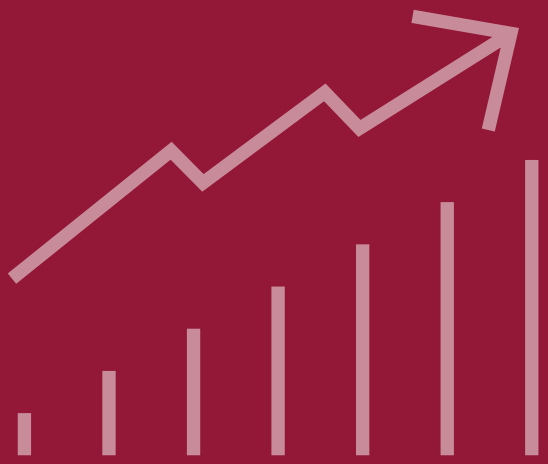
"A great discussion at the Global Forum on Agricultural Research and Innovation (GFAR), GODAN, and Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) consultation on data-driven agriculture. It's the beginning of a new path! Farmers are key players of the data value chain debate. Stay tuned!" World Farmers' Organisation.

"A very successful expert consultation with excellent Input for farming in a digitalized world. Let's go on and continue the road together" Hanns-Christoph Eiden, President of BLE.

"A heartfelt thank you for the organisation, preparation and care invested in the consultation. This is not an easy subject although a crucial one. The working material and the presenters were well chosen and conducive to the creativity needed for the elaboration of a vision, scenarios and action plan proposal." Jacques Drolet, IDRG.

The Road Ahead

We believe that improving the open availability, use and enrichment of data, and meaningful engagement with stakeholders can help achieve our vision. A world where the value chain for agriculture and nutrition is more efficient, innovative, equitable (e.g. by gender, socioeconomic status) and accountable; from, for example, greater yields and access to markets for farmers, through to more nutritious and safe food on plates for all.



Doing more with open data for agriculture and nutrition

GODAN
Global Open Data
for Agriculture & Nutrition

GODAN Secretariat,
c/o CABI Head Office
Nosworthy Way, Wallingford,
Oxfordshire OX10 8DE, UK

Tel: +44 (0) 1491 829421
Facebook: @godansec
Twitter: @godanSec
LinkedIn: GODAN Secretariat

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