

GLOBAL INFORMATION SOCIETY WATCH 2019

Artificial intelligence: Human rights, social justice and development



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC),
ARTICLE 19, AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch

2019



Global Information Society Watch 2019

Artificial intelligence: Human rights, social justice and development

Operational team

Valeria Betancourt (APC)
Alan Finlay (APC)
Mallory Knodel (ARTICLE 19)
Vidushi Marda (ARTICLE 19)
Maja Romano (APC)

Project coordination team

Valeria Betancourt (APC)
Cathy Chen (APC)
Flavia Fascendini (APC)
Alan Finlay (APC)
Mallory Knodel (ARTICLE 19)
Vidushi Marda (ARTICLE 19)
Leila Nachawati (APC)
Lori Nordstrom (APC)
Maja Romano (APC)

GISWatch 2019 advisory committee

Namita Aavriti (APC)
Rasha Abdul Rahim (Amnesty International)
Alex Comminos (Research ICT Africa)
Malavika Jayaram (Digital Asia Hub)
J. Carlos Lara (Derechos Digitales - América Latina)
Joy Liddicoat (Centre for Law and Emerging Technologies, University of Otago)
Andrew Lowenthal (EngageMedia)
Micaela Mantegna (Geekylegal/Machine Intelligence Lab, Center for Technology and Society, San Andres University)
Valeria Milanés (Asociación por los Derechos Civiles)

Project coordinator

Maja Romano (APC)

Editor

Alan Finlay (APC)

Assistant editor and proofreading

Lori Nordstrom (APC)

Publication production support

Cathy Chen (APC)

Graphic design

Monocromo

Cover illustration

Matías Bervejillo

We would like to extend a special note of thanks to a number of authors who have made ad honorem contributions to this edition of GISWatch.

We gratefully acknowledge the following:

Philip Dawson and Grace Abuhamad (Element AI)
Anita Gurumurthy and Nandini Chami (IT for Change)
Rasha Abdul Rahim (Amnesty International)



APC would like to thank the Swedish International Development Cooperation Agency (Sida) and ARTICLE 19 for their support for Global Information Society Watch 2019.

Published by APC

2019

Printed in USA

Creative Commons Attribution 4.0 International (CC BY 4.0)

<https://creativecommons.org/licenses/by/4.0/>

Some rights reserved.

Global Information Society Watch 2019 web and e-book

ISBN 978-92-95113-13-8

APC Serial: APC-201910-CIPP-R-EN-DIGITAL-302

Disclaimer: The views expressed herein do not necessarily represent those of Sida, ARTICLE 19, APC or its members.

Defending food sovereignty in the digital era

GRAIN

www.grain.org

Introduction

In May 2019, the BBC launched a documentary series titled “Follow the Food”¹ highlighting the current and future challenges of the world food system, from the growing population to the climate crisis to the generational turnover of farmers. According to the documentary, produced in association with Corteva (the new company created from the Dow-DuPont merger),² the way to “feed the planet” is by embracing new technology developments. This conclusion is based on the same kind of assumption that has been used over the past 50 years to impose agrochemicals, biotechnology and energy-intensive industrial agriculture on the global food system, while experts and reality on the ground show the contrary: small-scale farms and agroecology practices are able to produce 70% of the food being consumed globally on less than a quarter of all farmland – and are crucial to tackle the climate disaster.³

The documentary series shows stories from around the world of high-tech farming, like the use of robotics, digital equipment and blockchain technology. We hear from scientists, technology officers and CEOs in warehouses, corporate headquarters and start-ups. In some scenes, we see an eerie way of producing “food” handled with extra caution: a scientist wearing a hazmat suit to manipulate a vegetable-like form inside a petri dish and a vertical farm

with controlled artificial climate and LED light. You won’t see many farmers with their hands touching the soil, working in their sunny field growing food that will also be consumed at their dining tables.

Despite often being seen as a backwards economic sector in this era of digitalisation, agriculture in fact often serves as a test-bed for new technology. The implementation of digital technologies in agriculture, such as artificial intelligence (AI), drones and e-commerce, is growing at light speed. Agribusiness corporations are teaming up with digital technology companies, or creating their own digital arms, to create products and services targeting the food supply chain.

But these developments have brought up some important questions. Take the example of AI in agricultural production: is it better to have machines and automation replace farm workers suffering from poor living and working conditions? How will these workers be guaranteed a dignified source of living after their role is digitalised? Or the way e-commerce corporations integrate the vertical supply chain: will this lead to a more concentrated global food supply? Where is the place for small food producers and small vendors in this landscape?

In this report, we aim to stimulate reflection and discussion on the application of digital technologies in the food system using a food sovereignty⁴ framework. We explore different areas being impacted by technology, including production, distribution and commercialisation, and highlight the impact on small-scale farmers and local markets. In the race for increased productivity and efficiency, and most of all profits, we point out the ways that this agritech revolution is displacing and disadvantaging the farmers – and the methods and knowledge systems – that actually feed the world.

1 BBC. (2019). Follow the Food. <https://www.bbc.com/reel/playlist/follow-the-food?vpid=p07bj7pv>

2 DowDuPont recently announced it was de-merging, creating three of the largest chemical companies in the world, with Corteva focused on agricultural chemicals. Associated Press. (2019, 3 June). DuPont begins new life after more than 2 centuries. *Business Insider*. <https://www.businessinsider.com/dupont-begins-new-life-after-more-than-2-centuries-2019-6>

3 IPCC Working Group III. (2019). *IPCC Special Report on Climate Change and Land*. London: IPCC <https://www.ipcc.ch/site/assets/uploads/2019/08/SRCCCL-leaflet.pdf> and GRAIN. (2014). *Hungry for land: Small farmers feed the world with less than a quarter of all farmland*. <https://www.grain.org/en/article/4929-hungry-for-land-small-farmers-feed-the-world-with-less-than-a-quarter-of-all-farmland>

4 “Food sovereignty”, a term coined by members of Via Campesina in 1996, asserts that the people who produce, distribute and consume food should control the mechanisms and policies of food production and distribution, rather than the corporations and market institutions they believe have come to dominate the global food system. It also encompasses the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods. https://en.wikipedia.org/wiki/Food_sovereignty



Sign in front of Fujitsu vegetable factory. PHOTO: GRAIN, 2016

Agriculture digitalisation

On a hectare of land located on the outskirts of Hanoi in Vietnam stands a large greenhouse. This is not a typical greenhouse: there is a sign that reads “vegetable factory” in front, and inside not one person can be found on a regular day – there are only lettuces growing inside glass-sealed rooms and stems of leafless tomatoes linked to machines that regulate the intake of fertilisers, water and other minerals needed for the growth of the tomato. The greenhouse can be operated from Tokyo, almost 4,000 kilometres away from Hanoi. This “vegetable factory” belongs to Fujitsu, a Japanese company more familiar to many of us for their computer and printer products.

Fujitsu is just one of many information and communications technology (ICT) companies that have jumped on the bandwagon to digitalise agriculture, offering their services to, in their words, “contribute to the further development of [the] agricultural sector.”⁵ Ever since the Green Revolution led to agricultural industrialisation, efforts have been made to continuously improve management of large-scale industrial farms or plantation areas with a minimum number of workers or human hours working on the farm while maximising yields and profits. Agriculture machinery and technology are evolving from a simple threshing machine to today’s robotic farming where everything can be controlled from your computer or phone at a remote location.

Today there is an unprecedented level of investment from digital and ICT companies that traditionally have not worked in the agricultural sector. As vertical and horizontal integration happens along the food supply chain, corporations see the potential of gathering agriculture data, enabled by the development of digital technology, to monopolise the supply chain and maximise their profit.

The factory farm that Fujitsu developed is part of a collaboration with one of Japan’s leading food retailers, Aeon Agri Create. This company has established ICT-based farming in Japan and multiple Southeast Asian countries.⁶ In Japan, Aeon directly manages 15 farms covering over 200 hectares. Aeon’s farms use the Fujitsu Akisai cloud computing service as the basis for daily farm operations and monitoring. The collaboration is aimed at generating more data that Aeon can then use to secure a more stable supply of produce for Aeon Group stores; this way Aeon can ensure their vegetable supply from their contract farms.

AI and digitalisation of agriculture is not just about automation. The transformation of farm operations is further-reaching than replacing farmers with robots to increase profits and decrease the need for human workers. It is about capturing data, valuable information crucial to ensure the continuation of agricultural production.

5 Fujitsu. (2015, 8 December). Fujitsu and FPT Implement Smart Agriculture in Vietnam. <https://www.fujitsu.com/global/about/resources/news/press-releases/2015/1208-01.html>

6 Fujitsu. (2016). *Customer case study: Transforming farming by exploiting ICT*. https://www.fujitsu.com/sk/Images/CS_2016Nov_Aeon_Agri_Create_Co_Ltd_Eng_v.1.pdf

In an OECD paper⁷ about the digital transformation of the agriculture and food system, it was explained that the agricultural sector is both an important consumer and supplier of data. Farm data is particularly important to facilitate global value chain integration. The concern is that essential information like soil conditions, climate and water quality that should be publicly accessible to farmers, as it is necessary for agricultural production, can easily be extracted, stored, privatised and monopolised by a handful of agribusiness and digital companies.

A case in point: many were curious when Monsanto, a giant multinational agrochemical company, decided to buy The Climate Corporation, a climate data company, in 2013. But The Climate Corporation, as they claim on their website, has a platform technology that combines weather monitoring, agronomic data modelling and high-resolution weather simulations that can inform about bad weather that may impact farm profits and provide advice for risk management solutions needed.⁸ Owing technology like this means profit: as Monsanto said, “In the face of increasingly volatile weather, the global \$3 trillion agriculture industry depends on [such] technologies to help stabilize and improve profits.”⁹ Information that could be very useful for millions of small-scale farmers to produce food and feed the world is being privatised for the sake of profit.

E-commerce taking bigger slices in the food supply chain

Hawkers fill the last mile for sale of small products, connecting small producers and farmers to middle and working class consumers. With their micro-reach with data, Walmart and Amazon will also sweep up this link and render millions jobless and reduce consumer choice. - Shaktimaan Ghosh, General Secretary, India National Hawker Federation¹⁰

In June 2017, Amazon, the world’s third-largest e-commerce company, announced its acquisition



Vertical vegetable farm in Hanoi. PHOTO: GRAIN, 2016

of Whole Foods Market for USD 13.7 billion.¹¹ The deal made Amazon the largest organic food retailer in the United States (US) overnight. Amazon’s move follows its biggest competitor, the world’s largest e-commerce company, China-owned Alibaba, which invested USD 1.25 billion in the Chinese online food delivery service Ele.me in late 2015, then set up its own fresh produce stores, Hema supermarket. Alibaba invested USD 12.7 billion into physical retail stores.

When it comes to food distribution, 30 global supermarket chains already control a third of the global retail food market.¹² Combined with e-com-

7 Jouanjean, M. (2019). *Digital Opportunities for Trade in the Agriculture and Food Sectors*. Paris: OECD Publishing. <https://www.oecd-ilibrary.org/docserver/91c40e07-en.pdf?expires=1566464711&id=id&ccname=guest&checksum=054D28ADB45F2C803EACDoC334B2499C>

8 <https://www.climate.com>

9 Monsanto. (2013, 1 November). Monsanto Completes Acquisition of The Climate Corporation. <https://monsanto.com/news-releases/monsanto-completes-acquisition-of-the-climate-corporation>

10 Hawkiers Joint Action Committee. (2018, 27 August). Traders, farmers, workers and citizens groups decry green-light to Walmart-Flipkart deal – Call on Quit India day for joint struggle against foreign e-commerce. Supermarket Watch Asia. <https://www.grain.org/en/article/6029-modern-retail-and-market-concentration-in-thailand>

11 Green, D. (2019, 2 May). How Whole Foods went from a hip-pie natural foods store to Amazon’s \$13.7 billion grocery weapon. *Business Insider*. <https://www.businessinsider.sg/whole-foods-timeline-from-start-to-amazon-2017-9/?r=US&IR=T>

12 GRAIN. (2014, 17 September). Food sovereignty for sale: supermarkets are undermining people’s control over food and farming in Asia. <https://www.grain.org/en/article/5010-food-sovereignty-for-sale-supermarkets-are-undermining-people-s-control-over-food-and-farming-in-asia>

merce or grocery e-retail, the corporate control gets even more concentrated in this sector. There are only a handful of companies who control regional and even global supply chains, with Walmart, Alibaba and Amazon at the top of the food chain, as it were.¹³ This of course brings new challenges to small farmers and traders, especially when their “competitors” are invisible and able to deliver products from anywhere around the world to the doorstep of the consumers.

The growing encroachment of e-commerce in food distribution is happening everywhere, as start-up companies have competed to get their way into this sector over the past few years. The merging of e-commerce with existing grocery stores and supermarket chains is what Alibaba’s founder, Jack Ma, describes as the “new retail”. But what’s behind these investments? Why does e-commerce invest so much money in food distribution and retail?

Compared to other e-commerce purchases, groceries are habitual and frequent. People shop for groceries daily, weekly or monthly. Contrary to predictions made a few years back, there is a growing awareness of the fact that online channels alone can’t serve consumers adequately, especially in food retail.¹⁴ Merging offline and online stores covers consumer needs, and also provides greater access to consumer data and purchasing habits. Data helps companies develop vertical integration for their own private brands which, in the long run, will affect how and where these companies source their products in order to get the lowest price.

Furthermore, e-commerce companies like Amazon and Alibaba use automation as a key strategic advantage in their overall grocery strategy, entailing the risk of a major loss of jobs. Alibaba has begun drone-based deliveries to hundreds of customers in three of China’s major cities – Beijing, Shanghai and Guangzhou.¹⁵ Meanwhile, after its acquisition of Whole Foods Markets, Amazon plans to add robot workers in Whole Foods Market warehouses to reduce costs. Amazon already uses robots in other business sectors.

Although we can’t really tell future scenarios, in-depth analysis already predicts that increasing

automation and digital supply chain management of agricultural production, processing and trade will eventually create a profound impact on rural society – with the risk of leaving large numbers out of employment, especially in developing countries.¹⁶ E-commerce is changing traditional value chains and creating a closed environment where inputs, logistics and markets are centrally controlled.¹⁷

Food sovereignty 2.0? Stepping up to the tech challenge

Whether we like it or not, technology is advancing and influencing many aspects of agriculture and food distribution. Agri-digitalisation is a fast-growing industry that needs to be better understood. Combine this with trade agreements designed to back up this growing industry, and the question remains how to ensure that small-scale food producers, informal traders and local markets are not swept away as collateral damage of the hyper-competition between e-commerce, retail trade and agritech.

The transformation of agriculture and rural economies with digital development, automation and other computing technology brings inequality at different levels and in different ways. New technologies come with big price tags, making much of it inaccessible for smallholder peasants, thereby enforcing the competitive advantage of industrial, corporate-controlled agriculture. Food supply chains, from production to processing to marketing, will be further integrated and concentrated. Smallholders may struggle to engage with these changing systems, or be displaced from their lands and livelihoods completely by drones and robots.

We must continue defending food sovereignty, envisioning and building strategies and alternatives to the industrial food system in this digital era. This could include using ICTs to improve farmer-to-farmer exchanges or connecting small producers with small traders and hawkers in order to move forward in a way that strengthens social, community-based and public food systems, and assures the survival of small-scale food producers and local markets.

13 GRAIN. (2018, 31 May). Top e-commerce companies move into retail. *Supermarket Watch Asia*. <https://www.grain.org/en/article/5957-top-e-commerce-companies-move-into-retail>

14 GRAIN. (2018, 31 May). Online to offline food retailers’ transition in China: what’s left for farmer’s markets? *Supermarket Watch Asia*. <https://www.grain.org/en/article/5957-top-e-commerce-companies-move-into-retail>

15 Kelion, L. (2015, 4 February). Alibaba begins drone delivery trials in China. *BBC*. <https://www.bbc.com/news/technology-31129804>

16 Norton, A. (2017). *Automation and inequality: The changing world of work in the global South*. IIED. <https://pubs.iied.org/pdfs/115061IED.pdf>

17 Gurumurthy, A., & Chami, N. (2019, 2 April). Why the dominant digital trade paradigm will not work for women in the global South. *IT for Change*. <https://medium.com/commentary-itforchange/why-the-dominant-digital-trade-paradigm-will-not-work-for-women-in-the-global-south-d053cd3b470f>

Artificial intelligence: Human rights, social justice and development

Artificial intelligence (AI) is now receiving unprecedented global attention as it finds widespread practical application in multiple spheres of activity. But what are the human rights, social justice and development implications of AI when used in areas such as health, education and social services, or in building “smart cities”? How does algorithmic decision making impact on marginalised people and the poor?

This edition of Global Information Society Watch (GISWatch) provides a perspective from the global South on the application of AI to our everyday lives. It includes 40 country reports from countries as diverse as Benin, Argentina, India, Russia and Ukraine, as well as three regional reports. These are framed by eight thematic reports dealing with topics such as data governance, food sovereignty, AI in the workplace, and so-called “killer robots”.

While pointing to the positive use of AI to enable rights in ways that were not easily possible before, this edition of GISWatch highlights the real threats that we need to pay attention to if we are going to build an AI-embedded future that enables human dignity.

GLOBAL INFORMATION SOCIETY WATCH
2019 Report
www.GISWatch.org

