



EFFECTS OF COVID-19 ON FOOD & AGRICULTURAL SYSTEMS

Possible Research Questions on Policy Responses

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Outline

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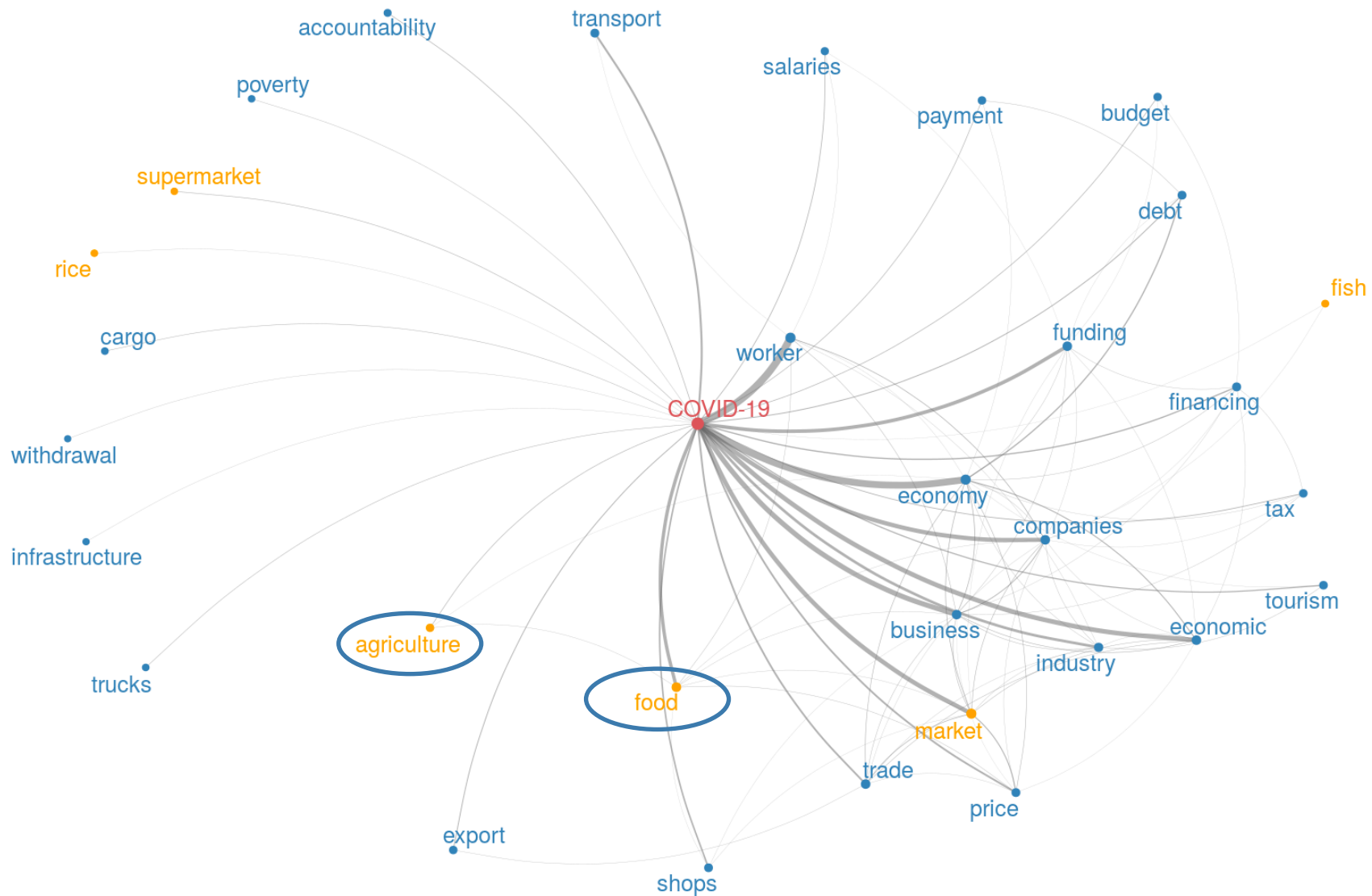


Introduction

- Problems in food and agricultural systems related to COVID-19
- WHO, FAO, IFPRI, EC, IFAD, WTO and many more.
- Different mediums: Policy briefs, academic publications, webinars, etc.
- A summary of initial efforts
- Interrelated issues
- The future?
- System dynamics

Feature Co-occurrence Matrix (FCM)

Food Chain Economic





Notes to Policy Makers and Modelers



“Without food, there can be no exit from the pandemic.” (Torero, M. (The Chief Economist of FAO), 2020)



“We need to act now to stop this **health crisis** transforming into a **food crisis**.” - Gilbert F. Houngbo (President of IFAD) (IFAD, 2020)



In aggregate terms, there is **no global food shortage**, unlike the food crisis in 2007-08. (The World Bank, 2020).



“Policy makers around the world need to be careful not to repeat the mistakes made during the 2007-08 food crisis.” (FAO, 2020).

Notes to Policy Makers and Modelers

First, **health-related**; second **food-related**

Shocks on both **demand** and **supply**

Effects depending on the **economic development level**

The most affected: **The poorest**

Capital intensive systems vs **labor intensive** systems

Uncertainty in the models

A new type of inventory: Inventory at the consumers

Supply Chain Management

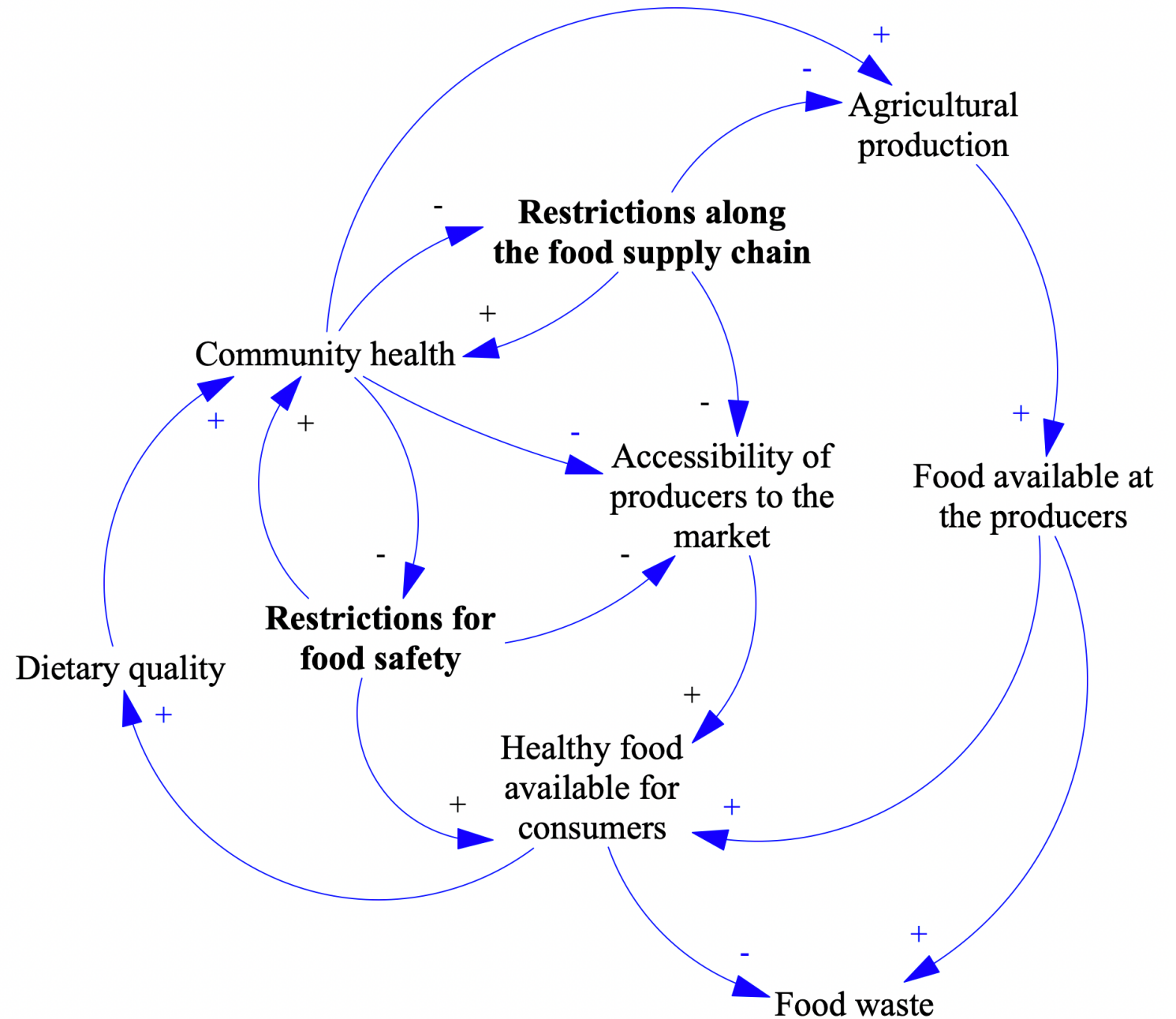
- **Accessibility**

- Accessibility (of vegetables) is a more pressing concern than availability (Harris, 2020).
- Many small-scale farmers are unable to access markets to sell produce or to buy inputs (IFAD, 2020).

- Decline in the **existing workforce** + unavailability of the **seasonal labor force**
- Dual supply chains and unadaptable supply chain operations
 - The food chains are not ready for that much **packaging** and **distribution** (Vacar, 2020).
- Logistics bottlenecks
- Longer lead times
- Trade offs between **responsiveness** and **food safety**

Supply Chain Management

- A Possible Research Question:
In case of a health crisis, what are the benefits and consequences of implementing “exemptions from the restrictions” for the sake of resilience of agricultural and food supply chains?



Supply Chain Management

Other Possible Research Questions:



Supply chain resilience: What are the policies to increase the resilience of the local food supply chains in case of an epidemic/pandemic?



Redesign of supply chains: What are the effects of the transition from **longer supply chains** to **shorter ones**? From **centralized** to **decentralized** supply chains?



Technology and innovation: Is it possible to reduce human contact to make less vulnerable supply chains?



What are the benefits and consequences of **safe travel** and **trade corridors**?

Value Chain Sustainability



- Agricultural value chains are affected as a whole: from tree-to-fork
- “Economic models predict that **food prices** are not going to rise.” (Swinnen, 2020)
- Local cases: Inputs **cost more**, farmers **earn less** (Tamru et al., 2020) and consumers **pay more** (FAO Datalab, 2020).
- **Heterogenous** effects, depending on the commodity and the region
- **Fruit and vegetable** value chains are affected more.

Value Chain Sustainability

Possible Research Questions: In case of a health crisis, ...



Does providing **financial incentives for cooperation** help for the sustainability of value chains? Benefits related to **economies of scale**?



Which type of **commodity value chain** has the top priority to obtain input / financial support? Animal sourced foods, perishables, non-perishables?



Which **stakeholder group** along the chain needs input / financial support most urgently? Small-holder farmers, SME food processors, (or even) consumers?

Food Security, Healthy Diet and Nutrition

- Vulnerable populations
- Headey and Ruel, 2020
- Income losses → cheapest calories
- Disruptions in public sector programs and school feeding programs
- Disruptions in perishable food supply chains
- Shift of demand in fruits, vegetables and animal-sourced foods
- Decline in dietary quality and malnutrition



Food Security, Healthy Diet and Nutrition



- Possible Research Questions:
 - Which policy actions for vulnerable populations: Support for **delivery systems** or **direct purchase markets**? **Cash-based initiatives** or **ticket-based initiatives**?
 - Their effects to health of the local community?
 - For which type of foods and agricultural commodities?
 - Shutting the **informal food markets** down or not? Effects on broader urban economy? (Examples from African economies (Resnick, 2020))

International Food Trade



Export Restrictions: 14 countries, 19 products (by April 29) (Laborde, 2020)



Organizations and Associations: "Avoid food trade restrictions!"



Actual vs Perceived Demand and Supply Disruptions (Ben-Belhassen et al. 2020)



Possible Research Question: How do international food trade restrictions affect the community? Health? Economics? Food availability?

Paradigm Shifts

Transition to local food systems

- "Our food systems are highly vulnerable because they're so globalized."
- Melissa Leach, IPES-Food (Gustin, 2020).
- Two extremes: **self-sufficient local food systems** vs **global food systems**
- Possible Research Questions: What are the effects of ...
 - Transition to self-sufficient local production - local consumption systems?
 - Regulations that force marketing local products?
 - Local community serving as labor force in local food systems?

Transition to a plant-based diet

- "Current evidence suggests that SARS-CoV-2 emerged from an animal source." (World Organization for Animal Health, 2020)
- Possible Research Question: What are the benefits and consequences of transition to a plant-based diet? Health? Economy?



Final Notes for the Next Steps

- More research questions
- Scarcity in time, data and “being normal”
- Existing literature: **models**, findings, analogies

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