

Urban food distribution systems



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Sarajevo, 2019

Learning outcomes:

- Knowledge: At the level of facts define, describe and identify: specificities of urban agriculture; the importance of urban agriculture in the development of local communities; the role of urban agriculture in adapting to demographic-climate change; development of urban agriculture.
- At the level of understanding: understand and analyse the basic elements of urban agriculture; limiting factors for urban agriculture development, analyse the need for urban agriculture tools.
- Skills: Apply knowledge and skills in analysing case studies related to the possibility of introducing urban agriculture into individual local communities.
- Competences: It has the ability to integrate knowledge and competences in urban agriculture integration jobs into the sustainable development system of local communities, institutions and companies engaged in food production, processing and distribution; analyse existing agricultural production systems and propose adaptation possibilities to the urban agriculture system.

Course rules

Expectations: standalone work questions /discussion
teamwork group learning /learning community/

Discussion HUP: Courage - Be brave to say your opinion -
No wrong answers

Politeness - Be polite to your colleagues - We use literary
language Acceptance - accepting other people's ideas
and suggestions - "this is good, but..."

Course rules

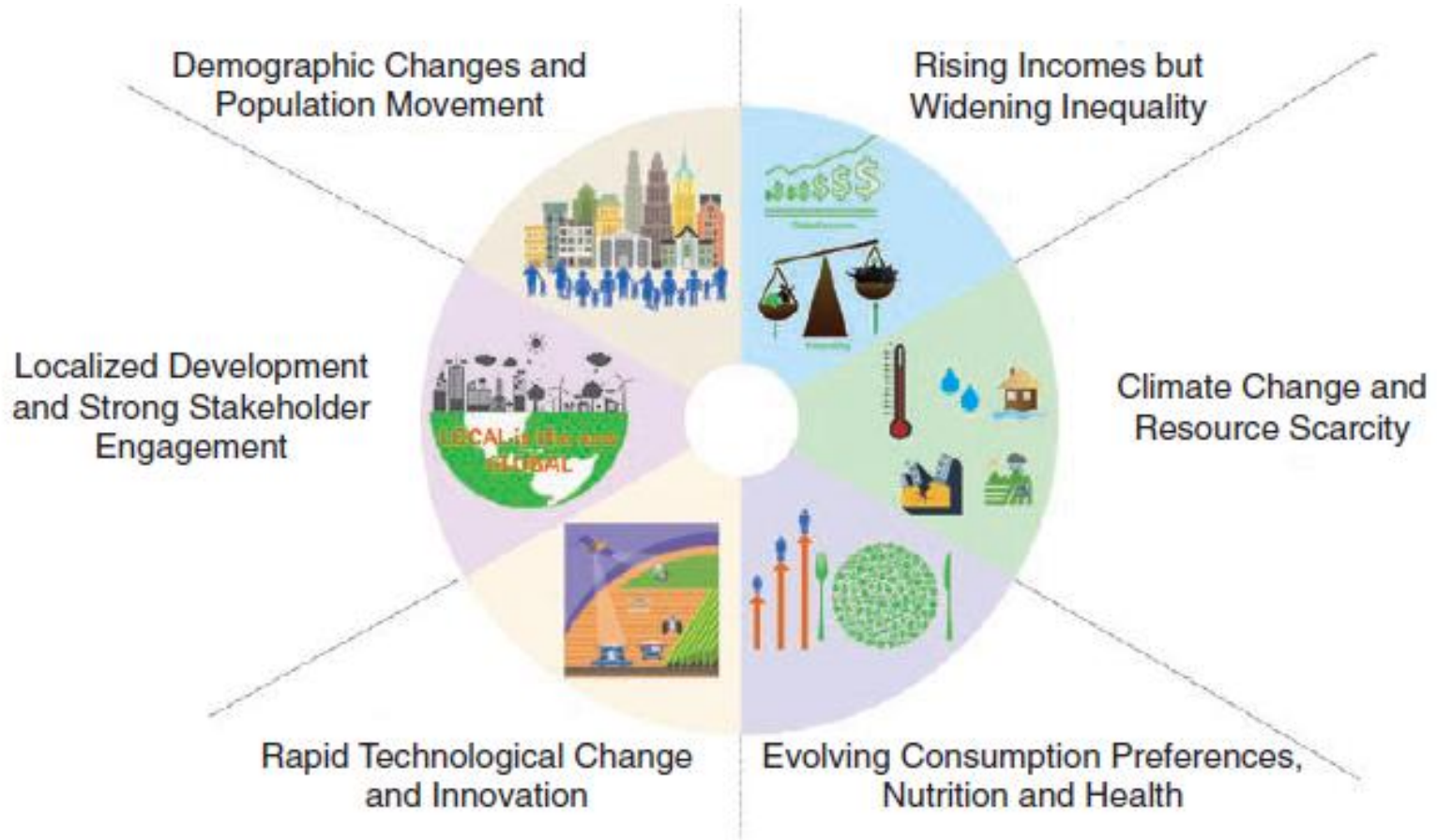
Reminder of today's lesson - PDL Create your own script.

Critical thinking Basics of deduction and induction, use of knowledge acquired on other subjects.

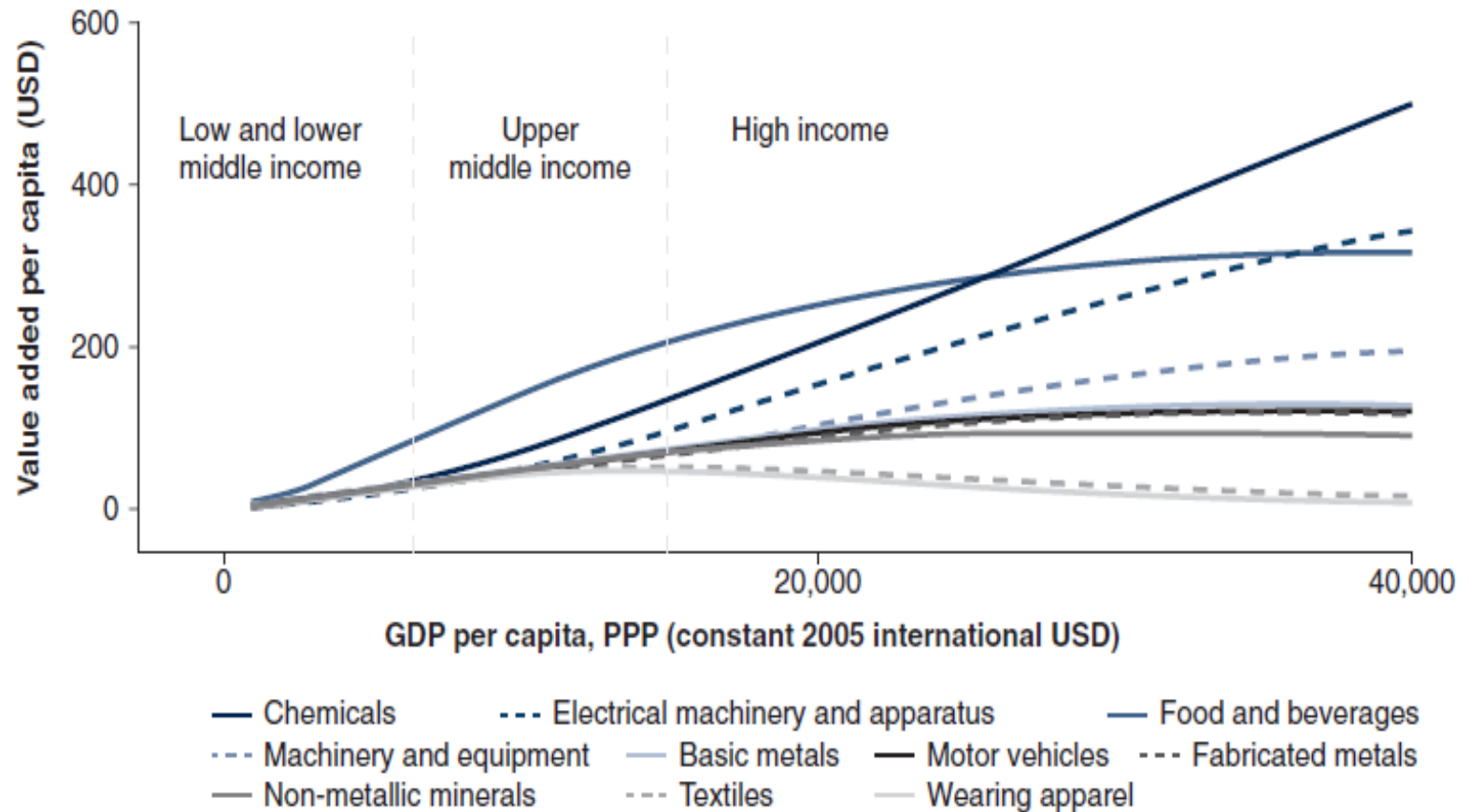
Quiz Questions from the PDL.

Seminar work and project task Mandatory semester activities.

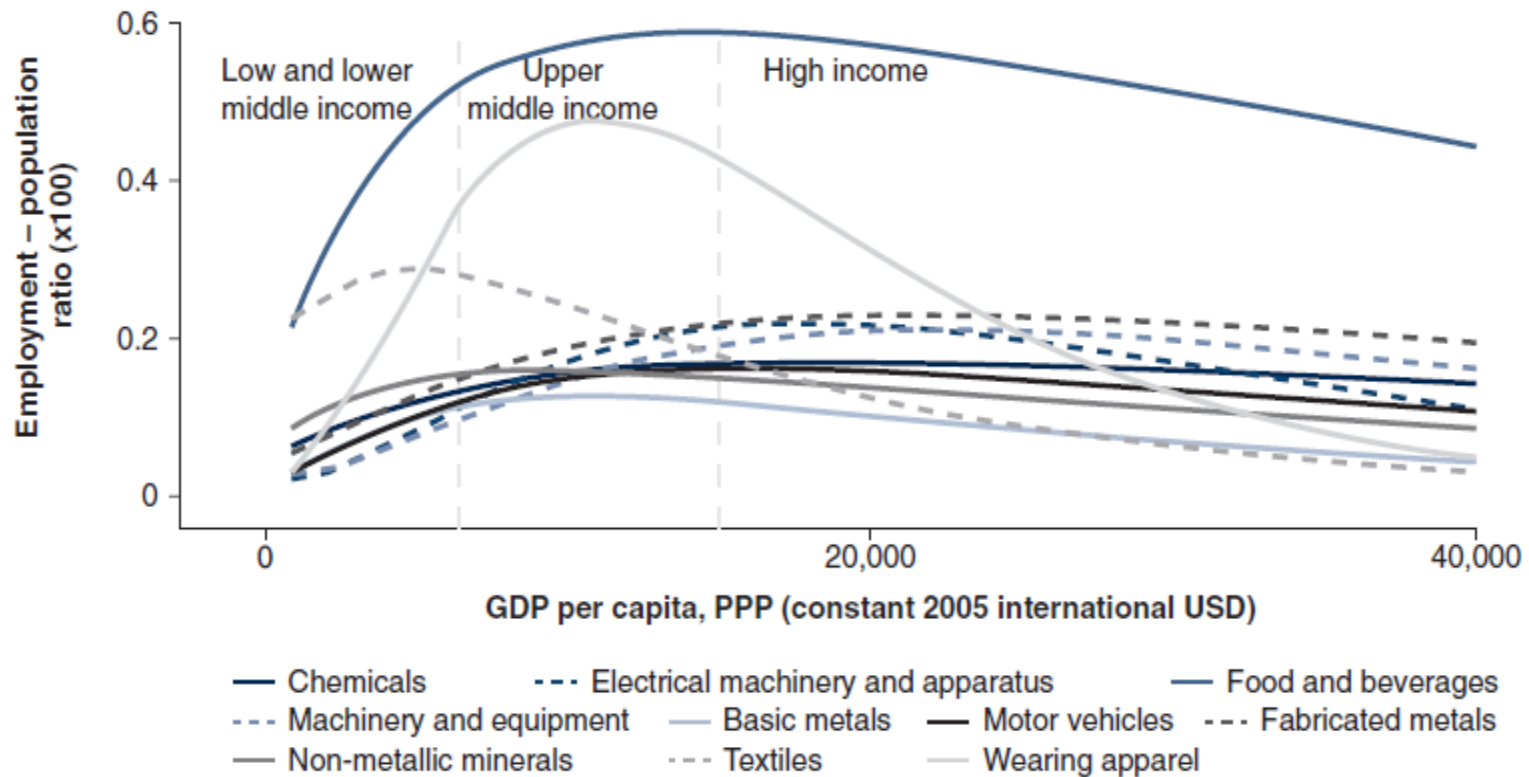
What's going to be talked about



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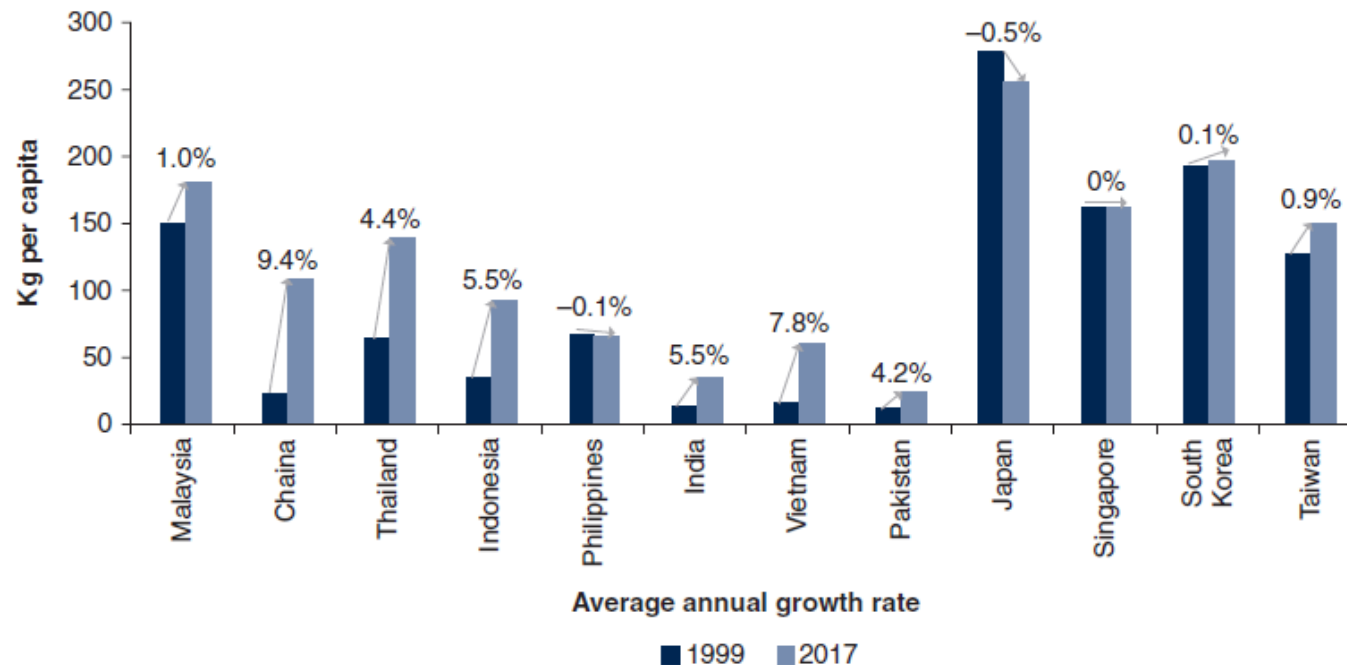
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Source: UNIDO (2014). (Ibid)

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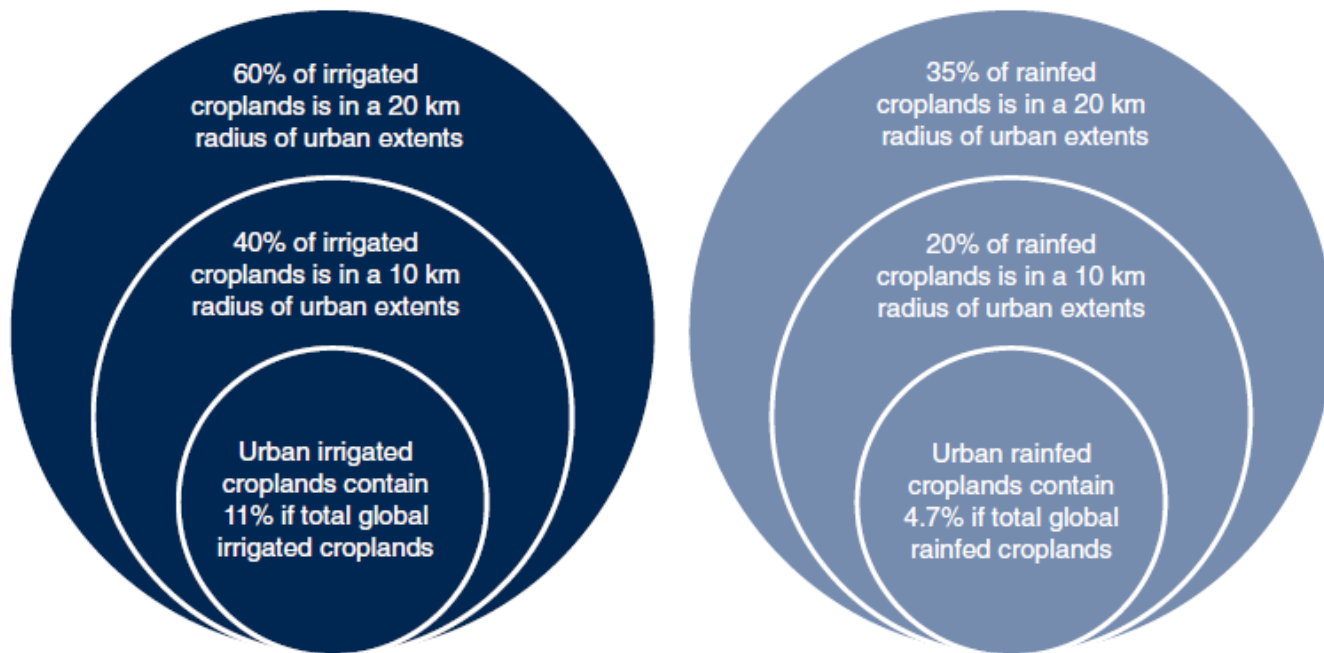
FIGURE 2.5 Growth in Per Capita Consumption of Processed Food Products in Asia: 1999 to 2017



Source: Baker, P., & Friel, S. 2014. Processed foods and the nutrition transition: evidence from Asia. *Obesity Reviews*, 15(7), 564–577.

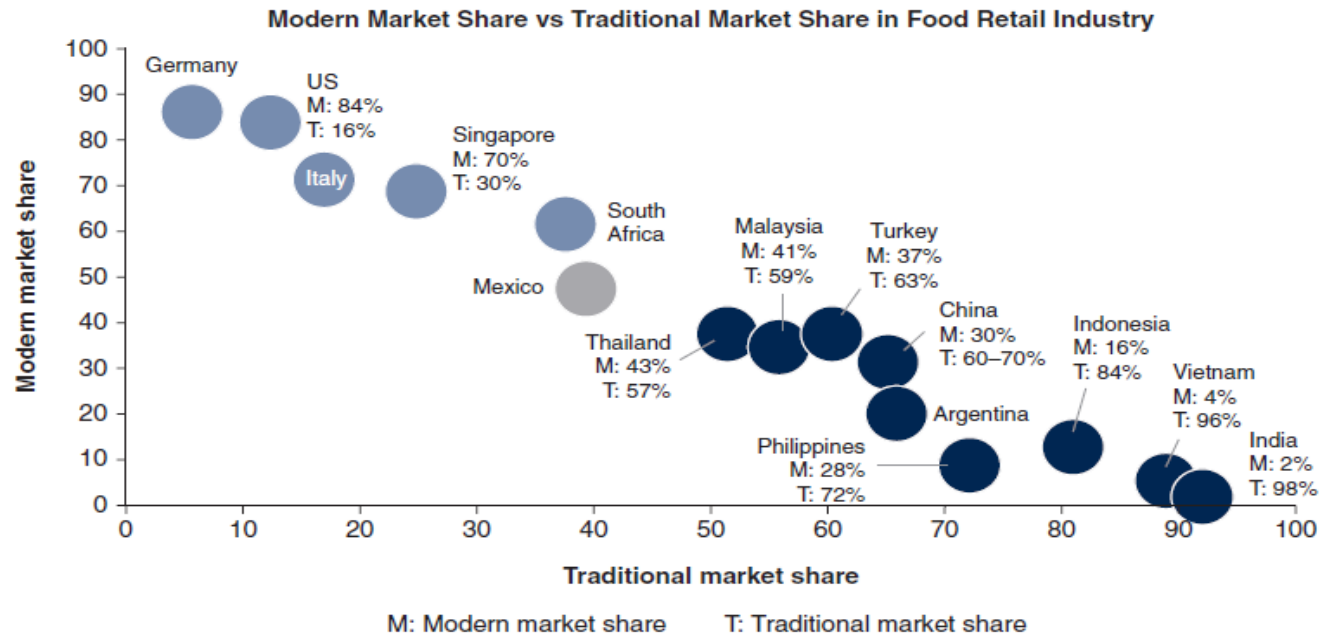
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FIGURE 3.2 Share of Urban and Peri-Urban Land in Total Global Agriculture Land



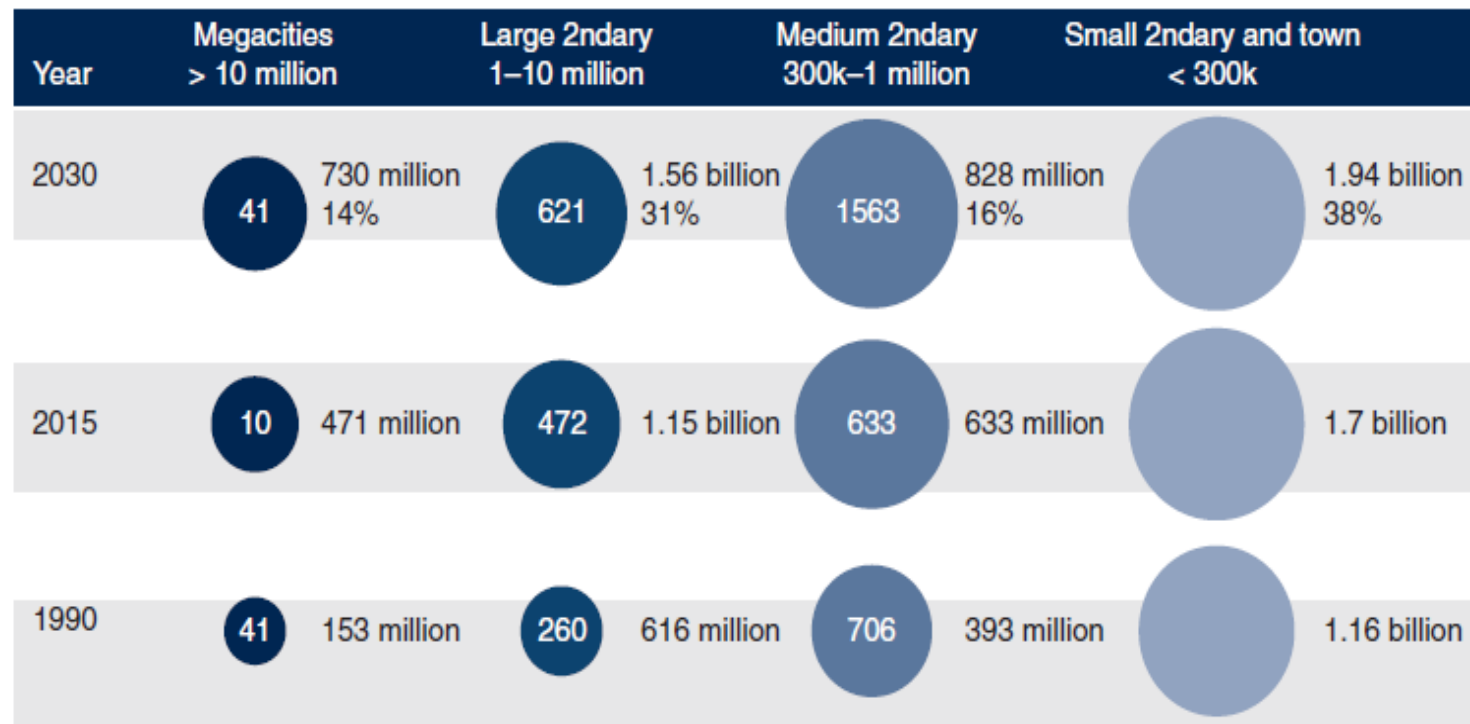
Source: Thebo, A. L., Pay Drechsel, and E. F. Lambin. 2014. Global assessment of urban and peri-urban agriculture: irrigated and rainfed croplands. *Environmental Research Letters*, 9(11), 114002.

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Source: DBS Group Research. 2015. Industry focus: Asian grocery retail report. Accessed June 1, 2017. https://www.dbs.com.sg/treasures/aics/pdfController.page?pdfpath=/content/article/pdf/AIO/150722_insights_whetting_asean_appetite.pdf; Delgado, Juan. 2015. Market structure, growth and competition in the supermarket sector in Latin America; Agriculture and Agri-food Canada. Modern grocery retailing in the United States. *International Markets Bureau Market Indicator Report*. Accessed June 1, 2017. <http://www.agr.gc.ca/resources/prod/Internet-Internet/MISB-DGSIM/ATS-SEA/PDF/6365-eng.pdf>; Yurdagul, Bulent and Neerav Agarwal. 2015. Turkish food retail. *HSBC Global Research*. Accessed June 1, 2017. http://f.bigpara.com/20151126_Turkish%20Consumers_HSBC.pdf; Battersby, Jane, and Stephen Peyton. 2014. The geography of supermarkets in Cape Town: Supermarket expansion and food access. *Urban Forum* 25, no.2: 153-164. Springer Netherlands, 2014; Zhang et al., Transformation of urban.

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● Number of cities by city type, data not available for cities < 300k

153 million: total urban population by city type 14%: share of 2030 urban population by city type

Data source: United Nations. World Urbanization Prospects.

Value chain

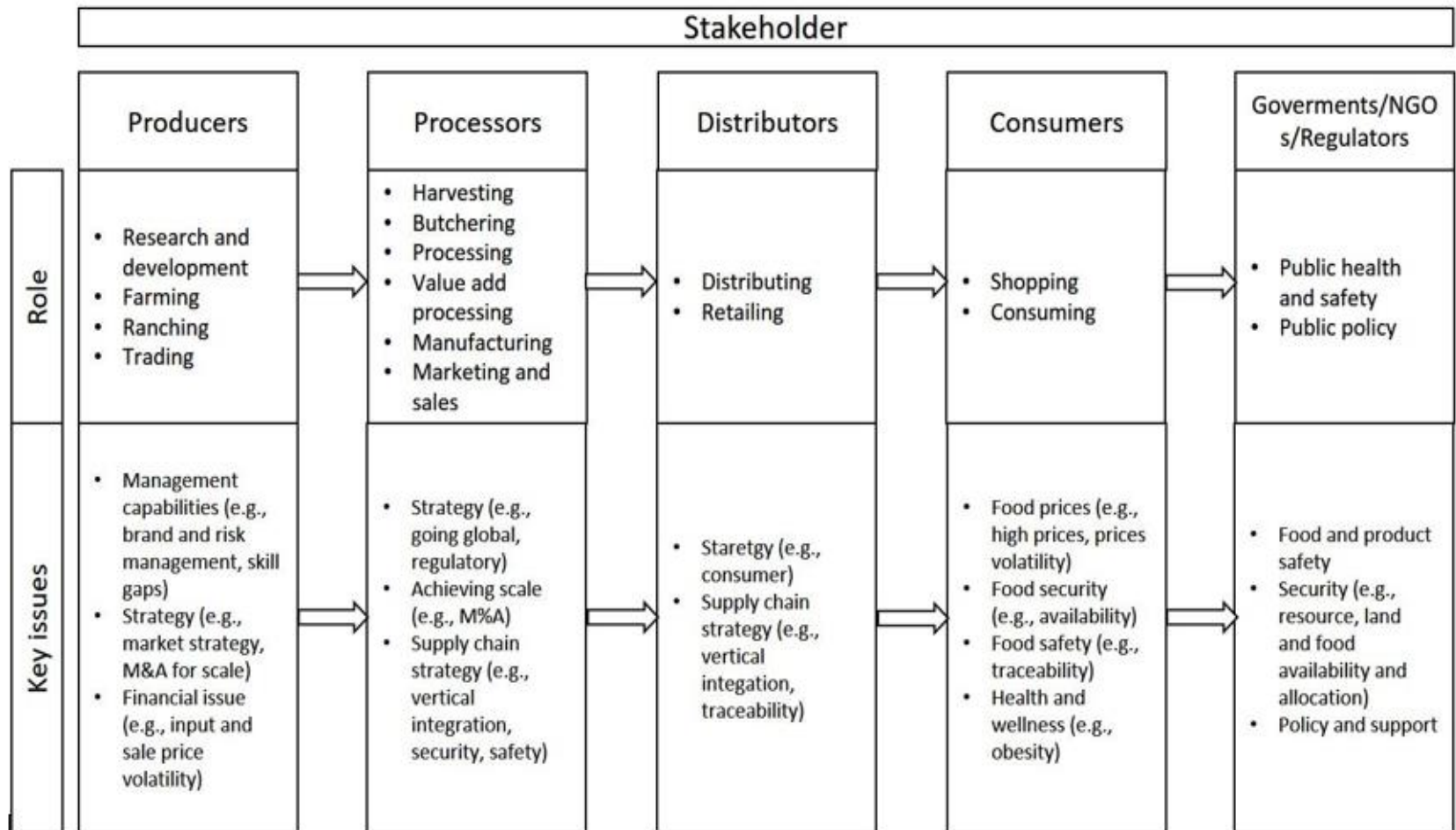
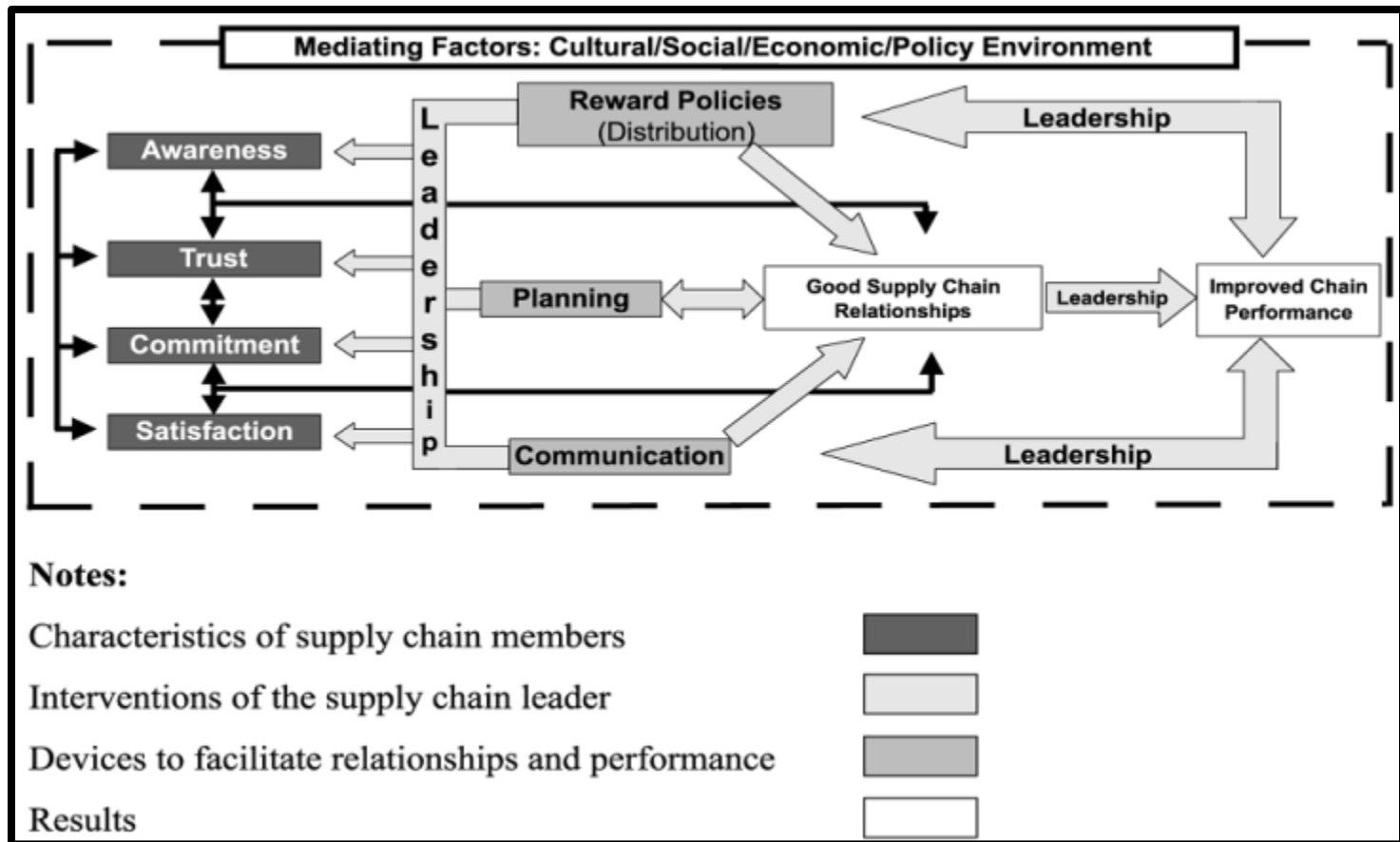
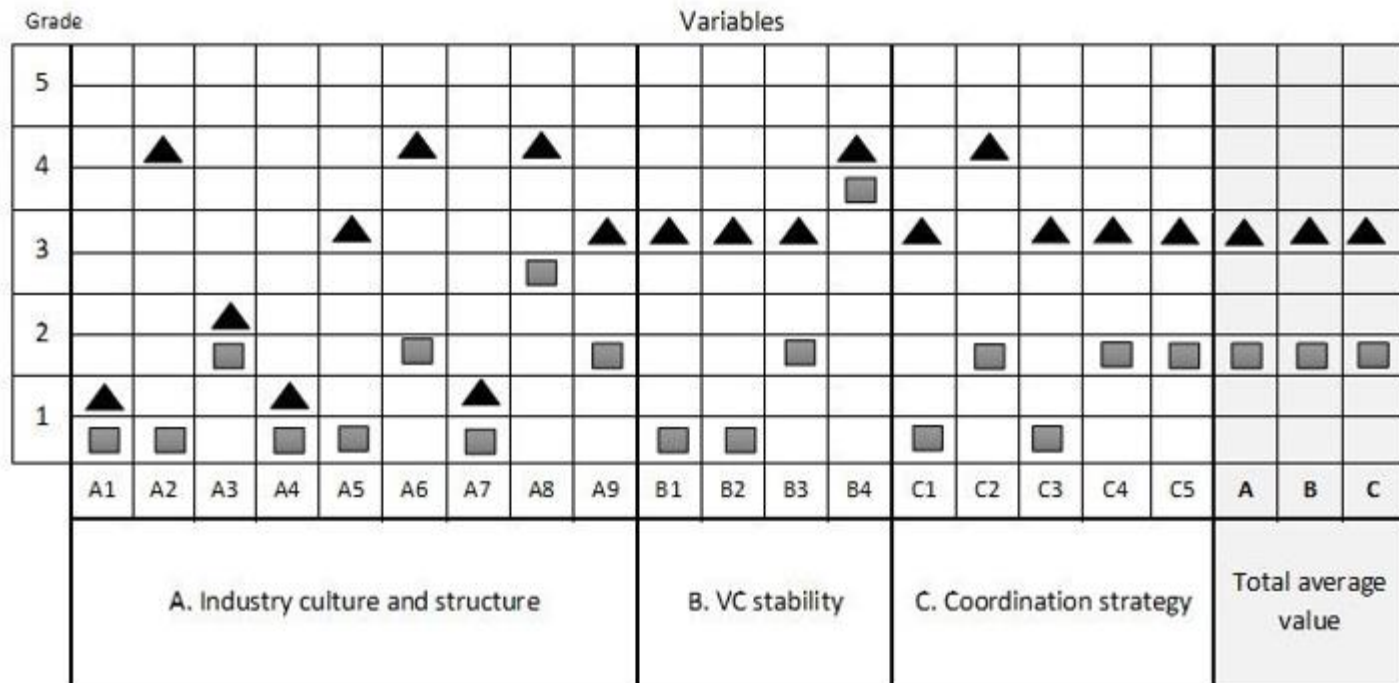


Figure 1 - Agrifood value chain map (Deloitte, 2013)

Value chain



Value chain efficiency



Legend:

- ▲ - average value for medicinal and aromatic plants sector
- - average value dairy sector

Value chain efficiency

- Note: each induced variable is evaluated and mark using Likert scale (1 undeveloped, 3 partially developed, 5 well developed).
- Industry culture and structure
 - A1 farm structure (1 fragmented & dispersed – 5 high share of middle size farms integrated sector);
 - A2 dairy structure (1 fragmented low economy of scale – 5 integrated, special sated high economy of scale);
 - A3 quality of logistics (1 undeveloped logistic – 5 well efficient logistic services, low transaction costs);
 - A4 ICT application (1 low, undeveloped – 5 active use, mutual involvement);
 - A5 share of information (1 – low willingness, not possible – 5 high willingness, systems and procedures developed);
 - A6 market orientation (1- commodity orientation – 5 value created and maintained);
 - A7 market strategy (1 – price competition – 5 diversification, quality competition);
 - A8 quality and safety (1 – undeveloped systems – 5 developed systems);
 - A9 cooperatives and associations (1 undeveloped, low activity and capability – 5 developed, capable and active);

VC stability

B1 market power (1 high market power of one player – 5 all have similar market power),

B2 risk share (1 no any attempt – 5 agreed procedure of risk sharing),

B3 contractual agreements (1 short agreements, poorly defined and hard to enforce – 5 long term stabile business agreements);

Coordination strategy

C1 type of company interest to become VC member (1 pure self-interest – 5 mutual interest, synergy),

C2 type of relationship (1 -short-term unstable – 5 long-term stabile relationship),

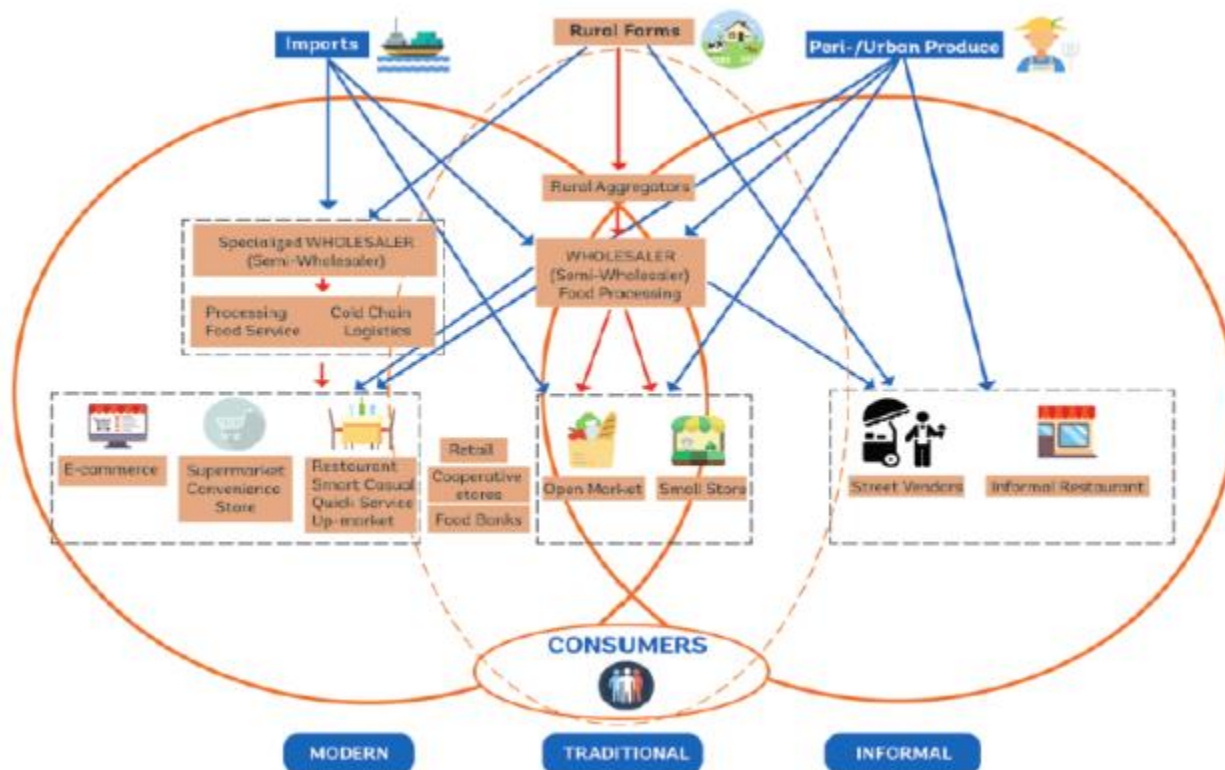
C3 willingness to share benefits and informations (1 very low – 5 high very motivated, associations who support and facilitate it),

C4 level of dependence (1 independent – 5 interdependent);

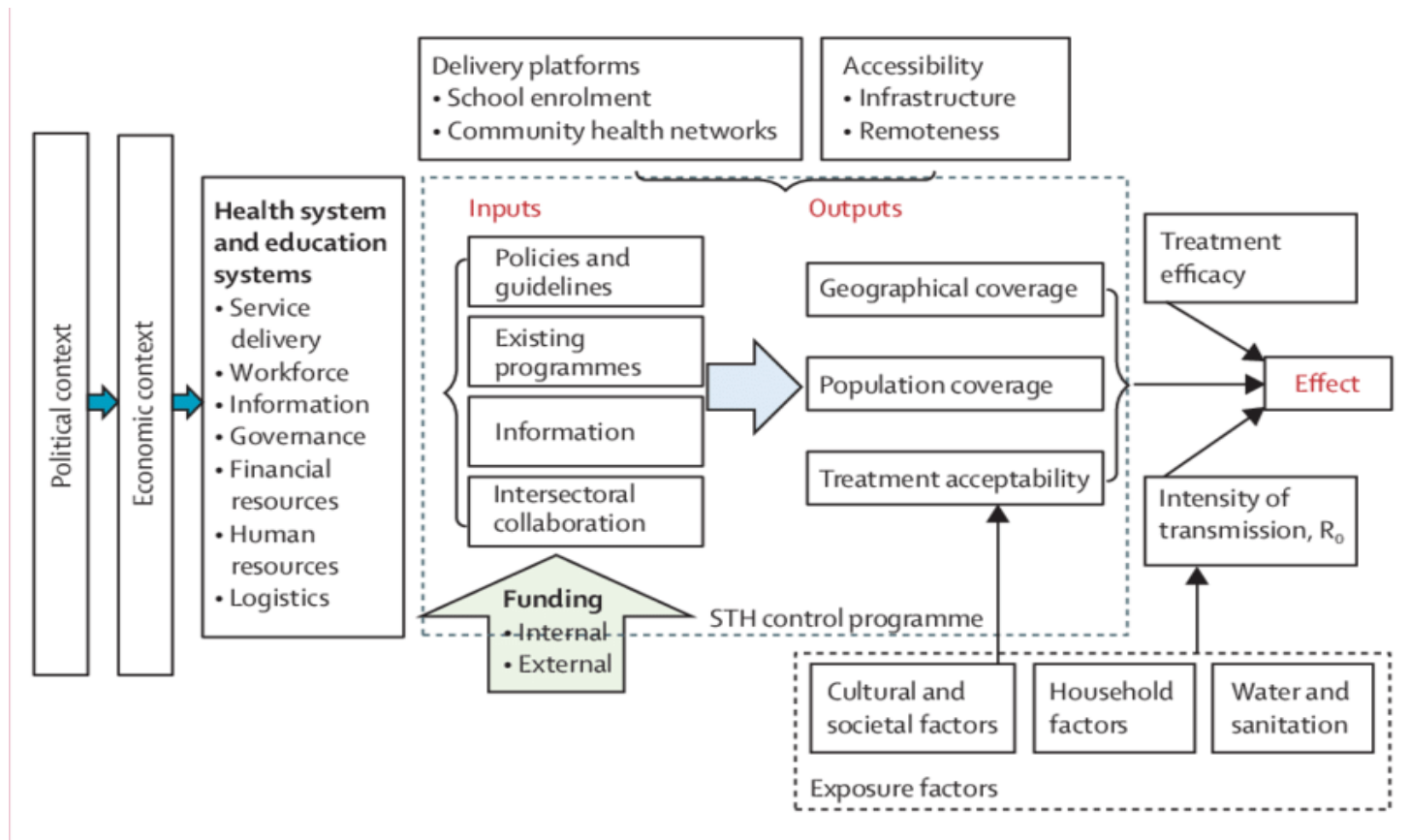
C5 transparency (1 low – 5 very high).

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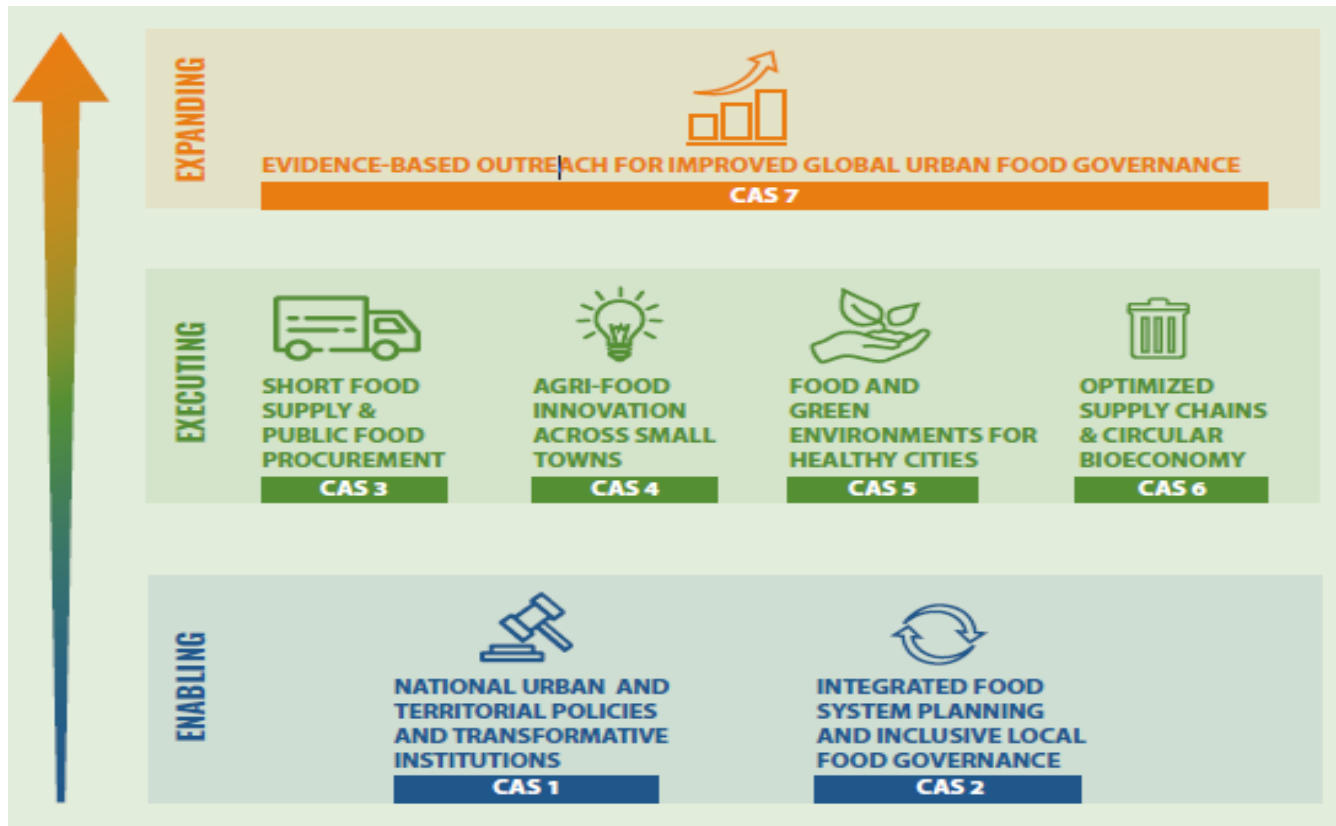
FIGURE 3.1 Evolving Food Systems: Modern, Traditional and Informal



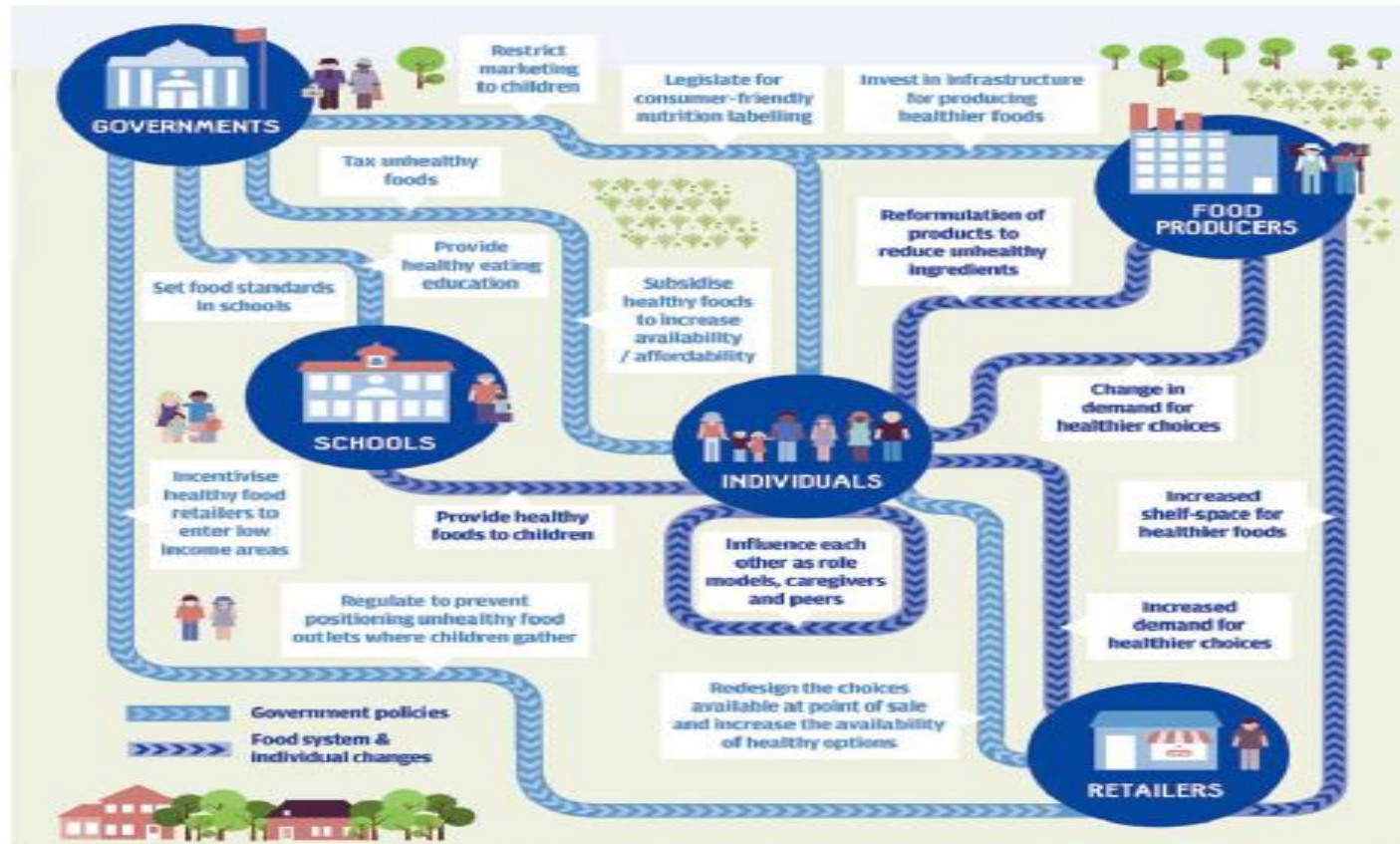
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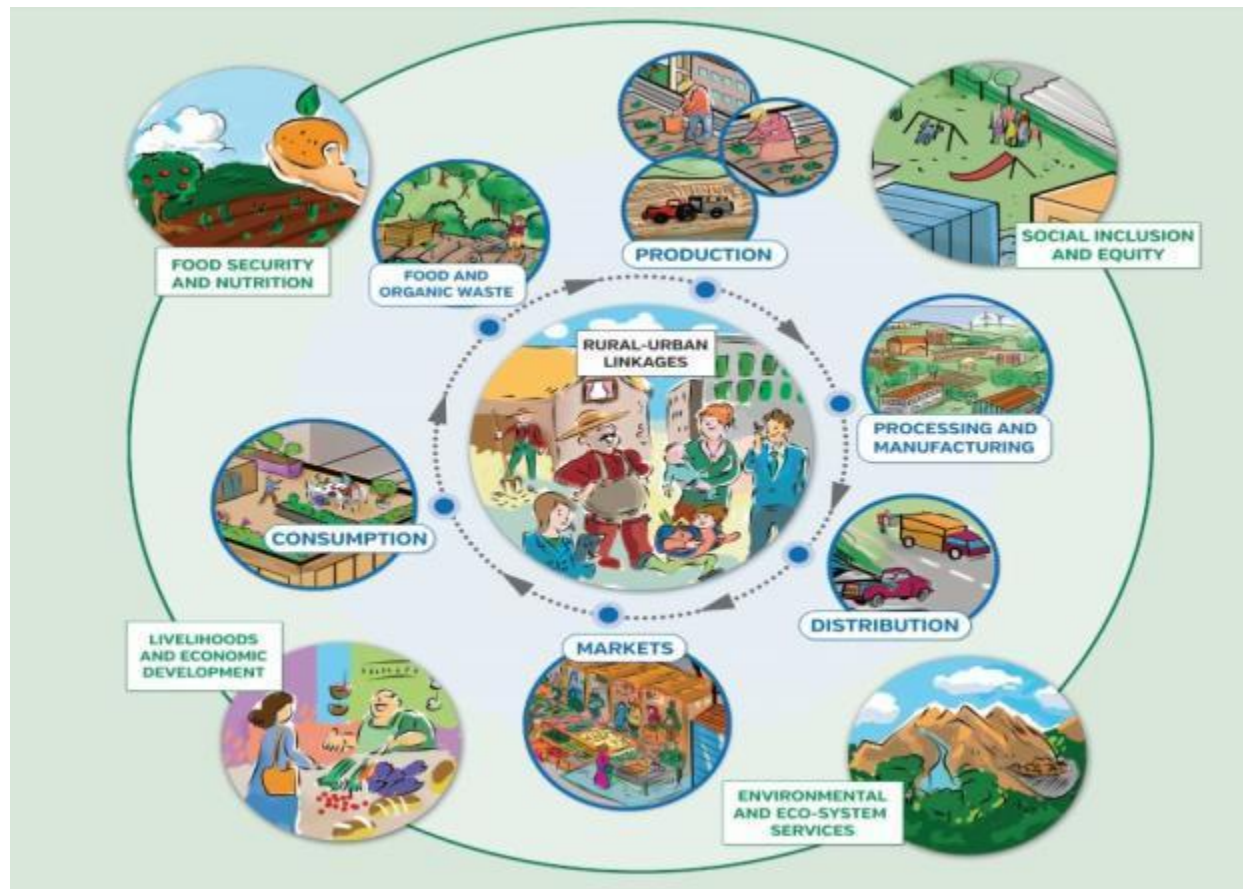


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Source: The Lancet. 2015. Obesity. Accessed June 1, 2017. <http://www.thelancet.com/series/obesity-2015>.

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Geneva **“Protecting Our Planet’s Health: Growing Cities, Poor Nutrition, What Can Be Done?”**

on 10 November 2016 to discuss how we can improve the nutrition of vulnerable urban populations.

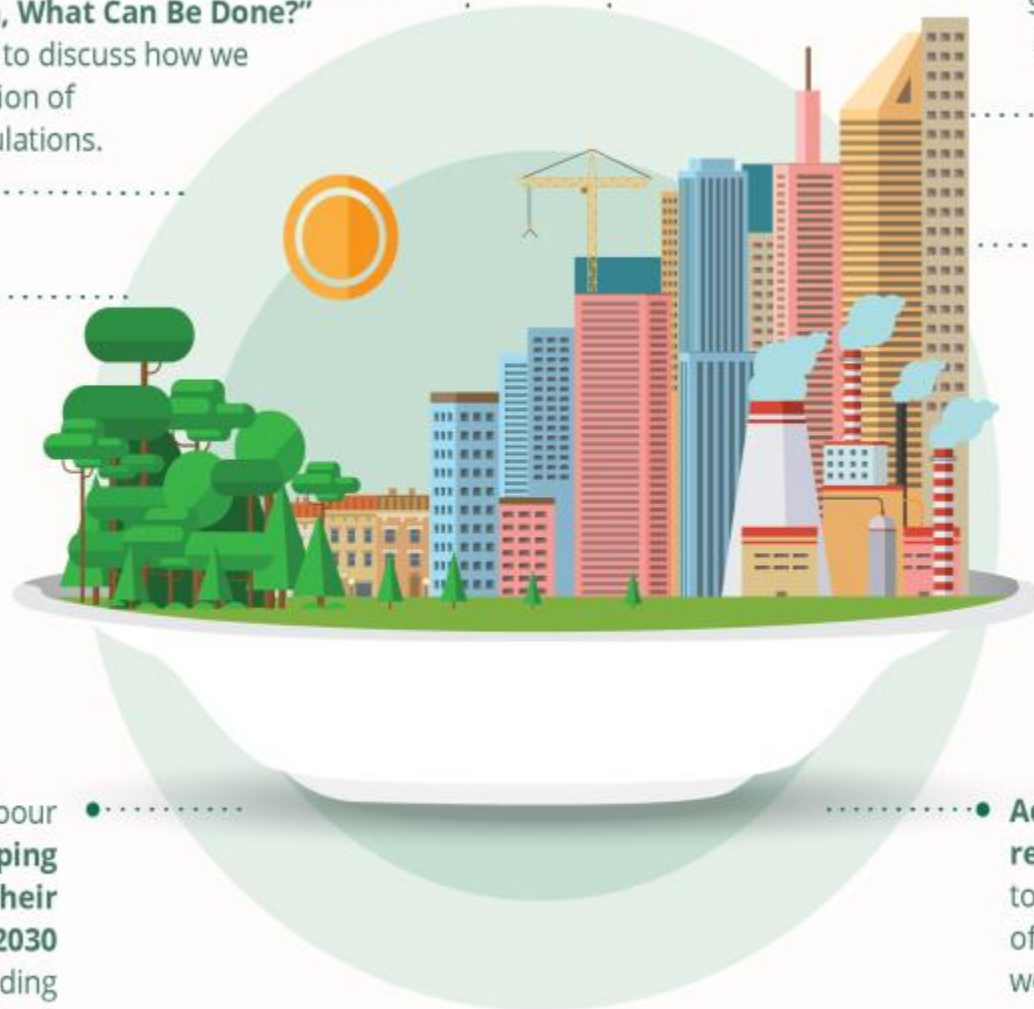
estimate of additional public spending to reach the goal of ending hunger by 2030.

While ISO standards have already played an important role in the food chain, ISO is currently developing **new documents on sustainability and social responsibility for the agri-food sector.**

The International Labour Organization is **helping farmers to double their productivity by 2030** through skills-building activities ranging from business development to

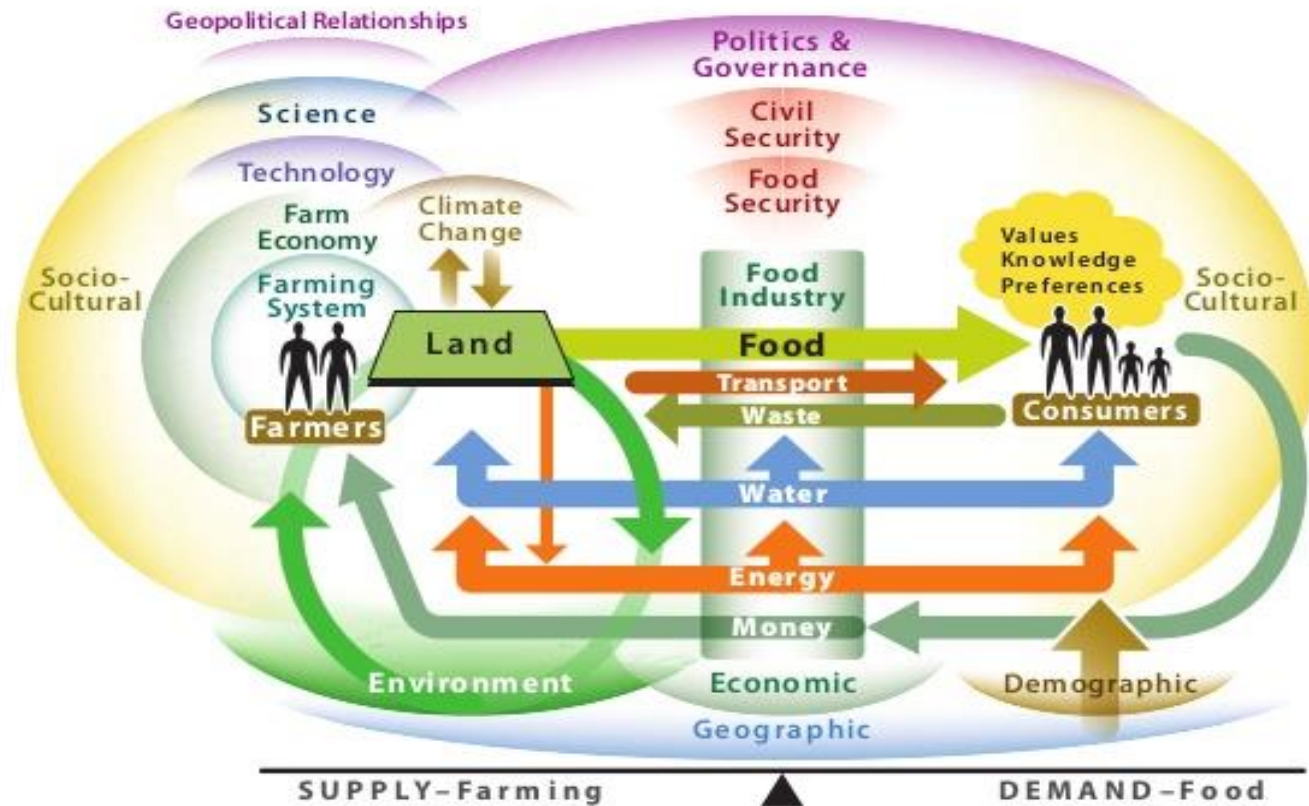
From crop to shop, **ITC’s Standards Map** helps ensure that smallholders in developing countries produce food that is fair, ethical and safe for consumers.

Adequate and reliable water resources are a prerequisite to the sustainable production of food and energy for human well-being as well as mitigating potential conflicts between increasing food and energy



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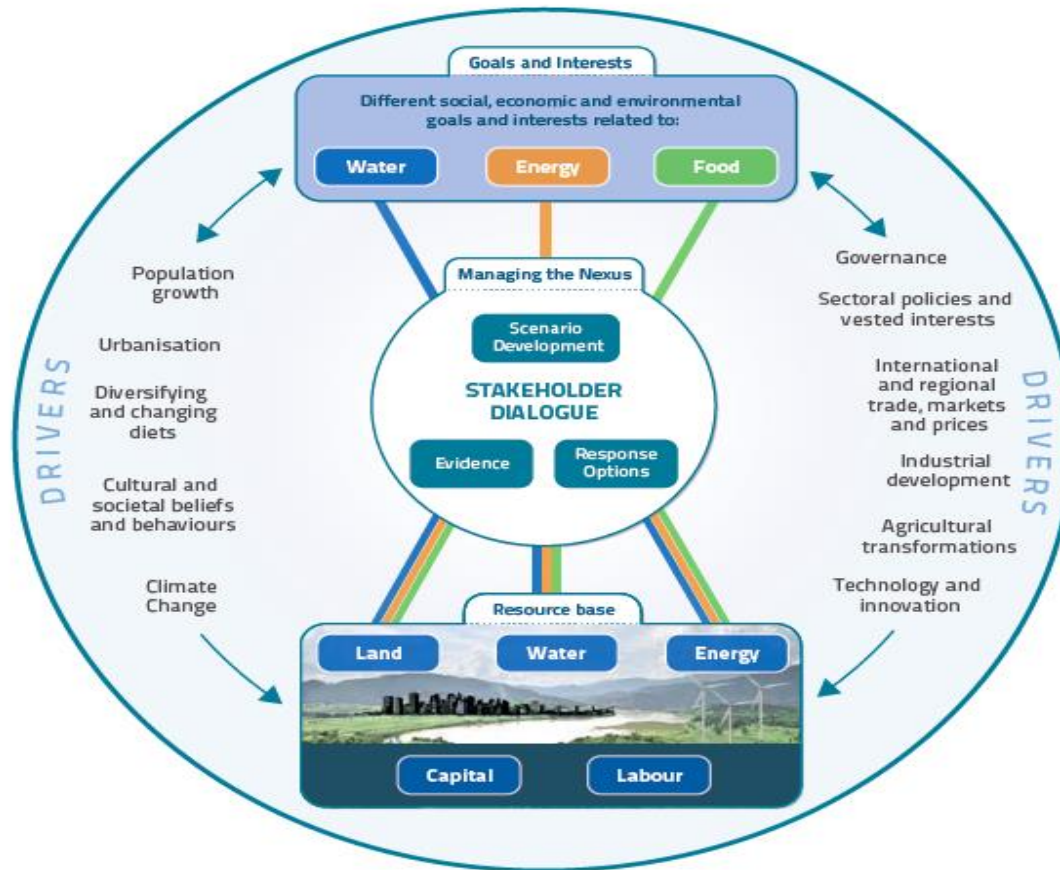
Food System Map – Basic Elements



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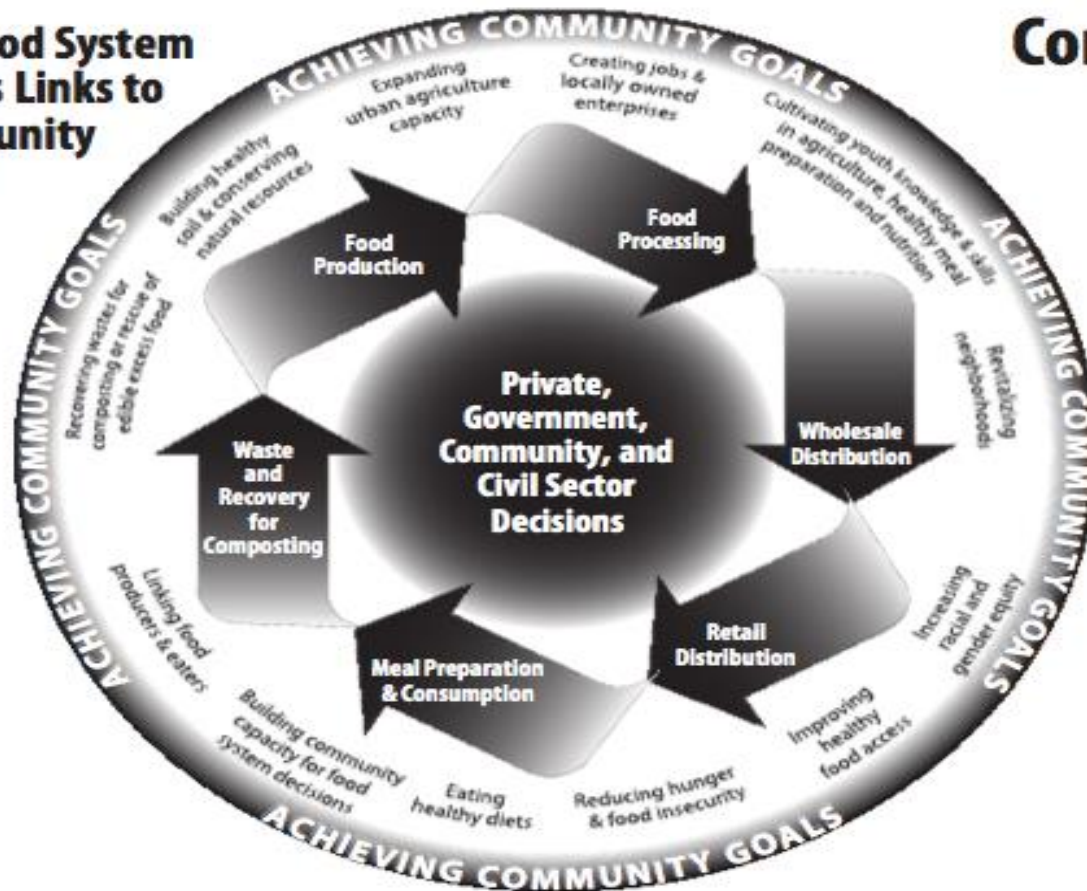


Source: FAO (Food and Agriculture Organization of the United Nations). Water-Energy-Food-Nexus. Accessed June 1, 2017. <http://www.fao.org/energy/water-foodenergy-nexus/en/>.

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The Food System and Its Links to Community Goals

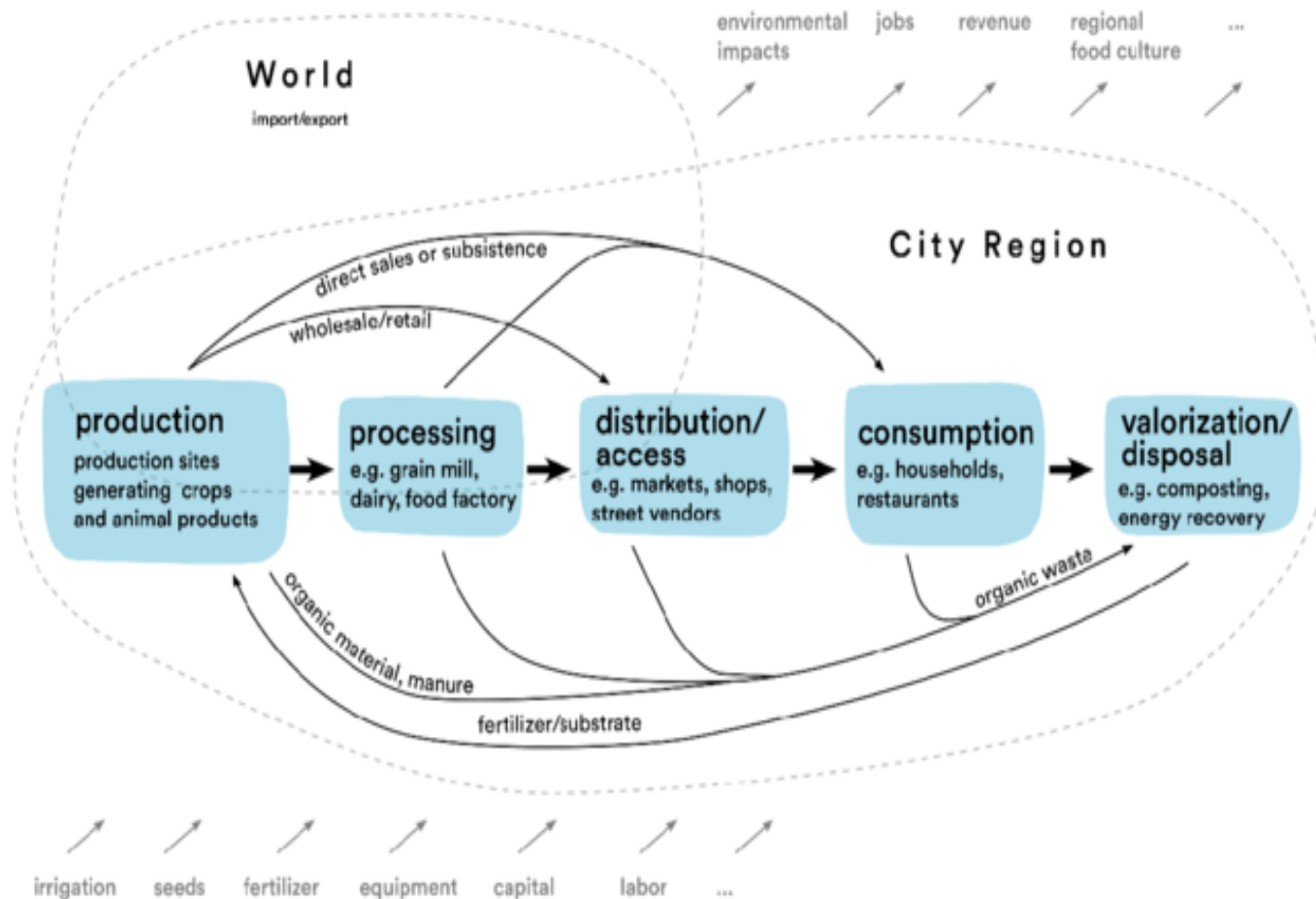
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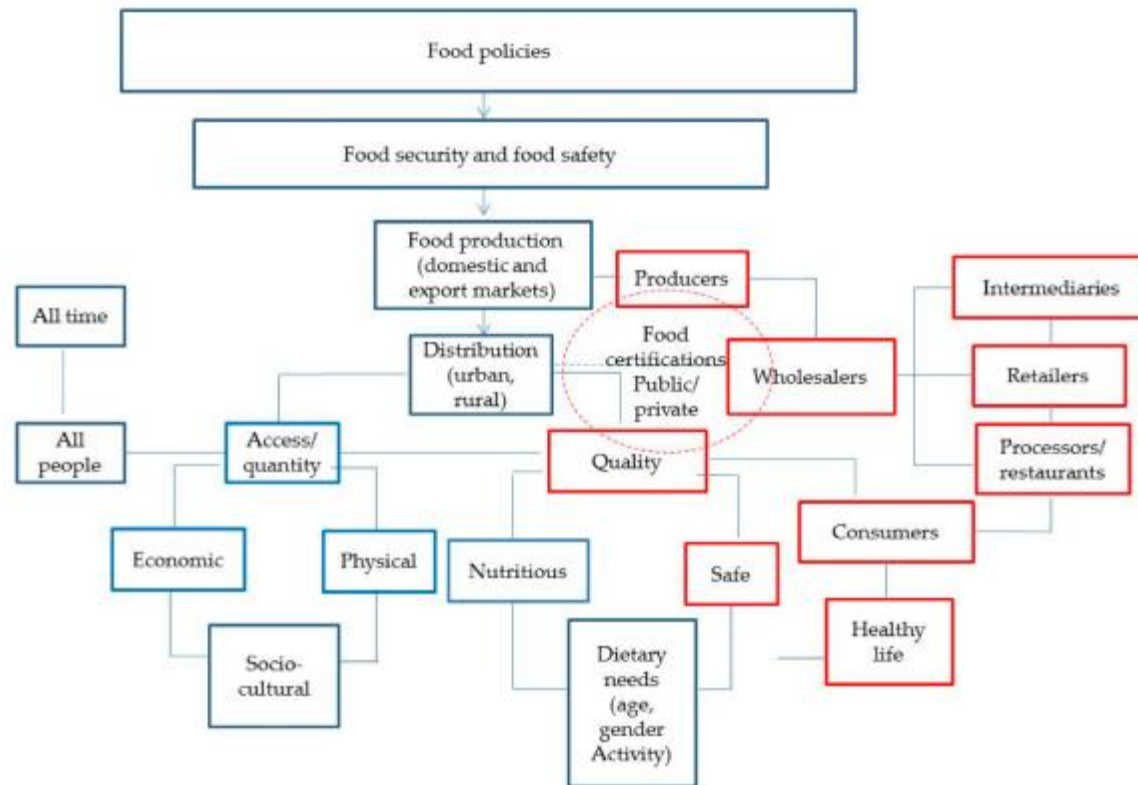
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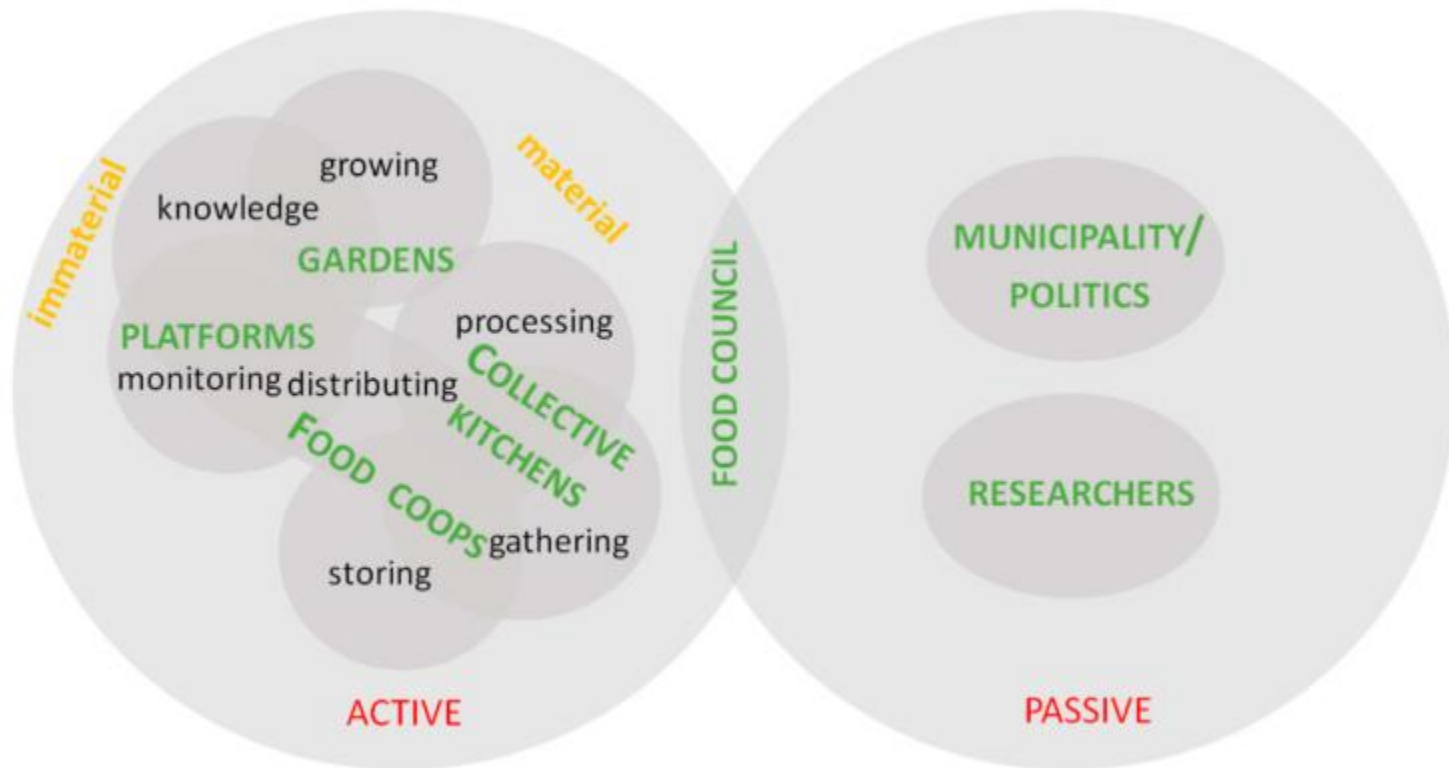
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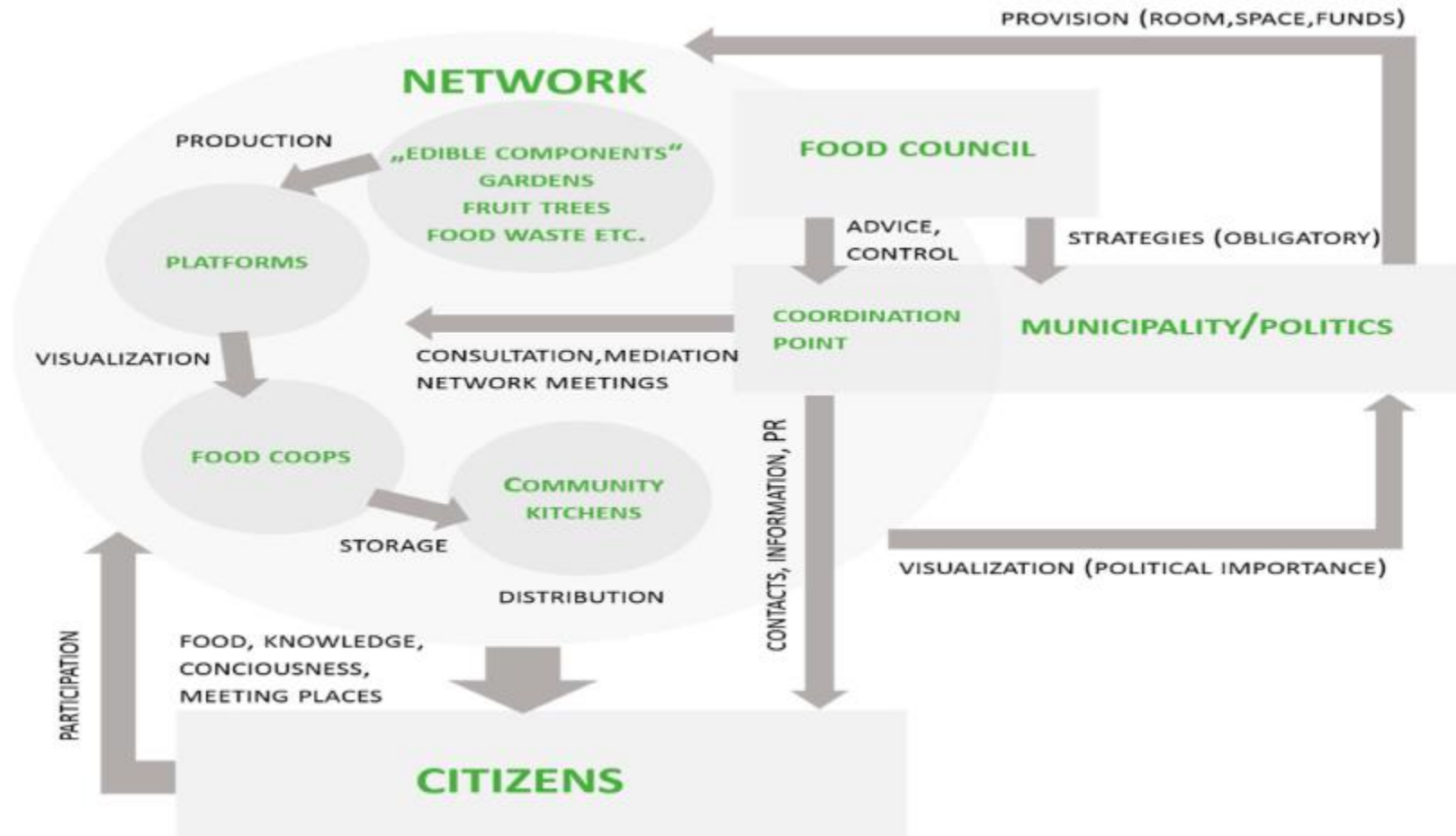
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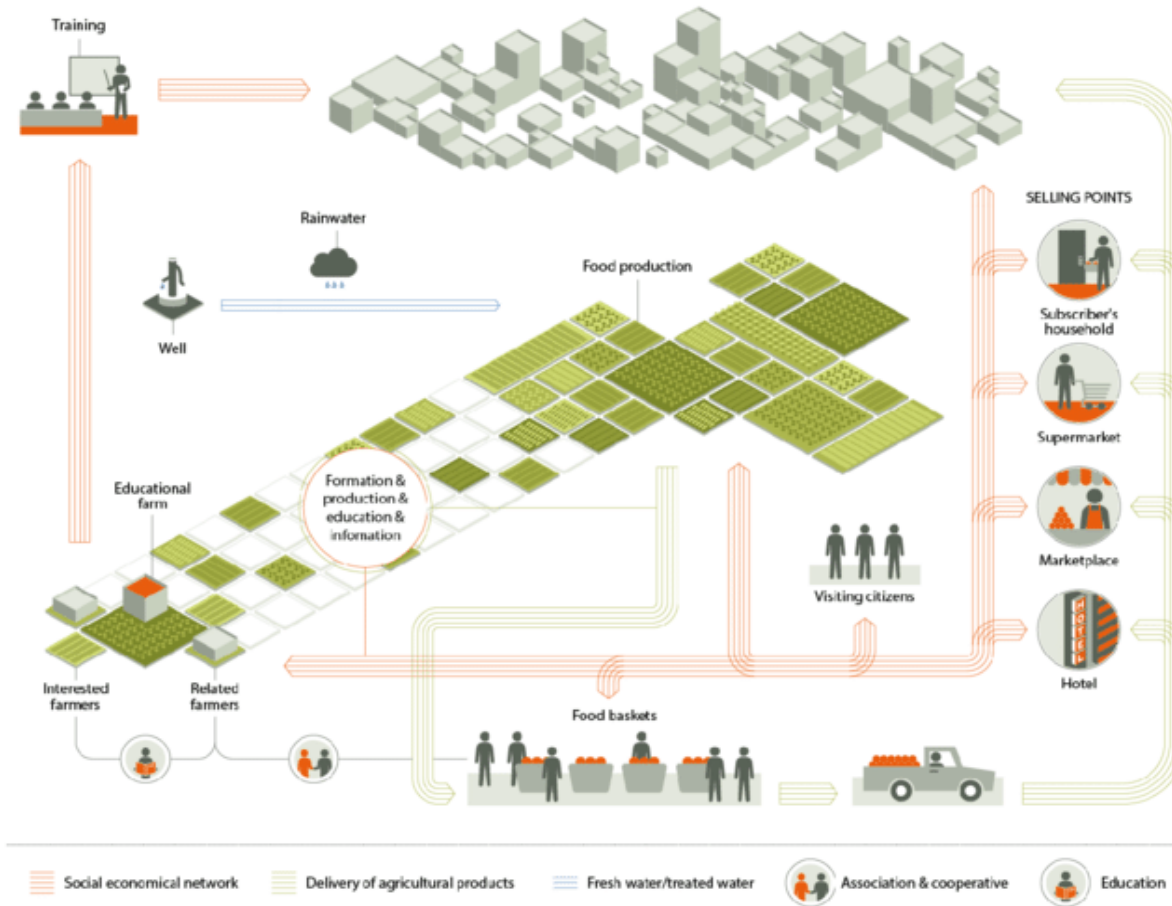
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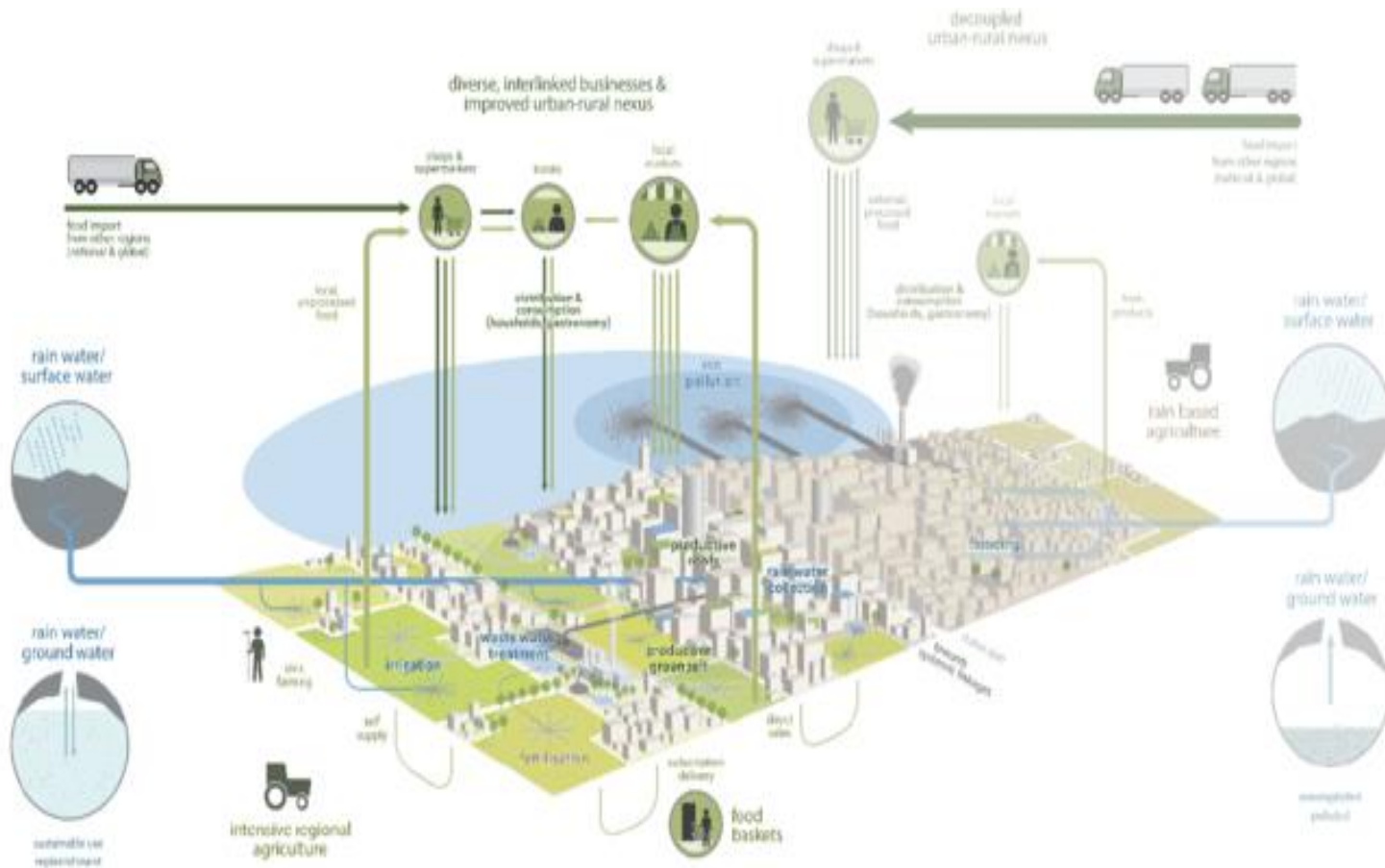
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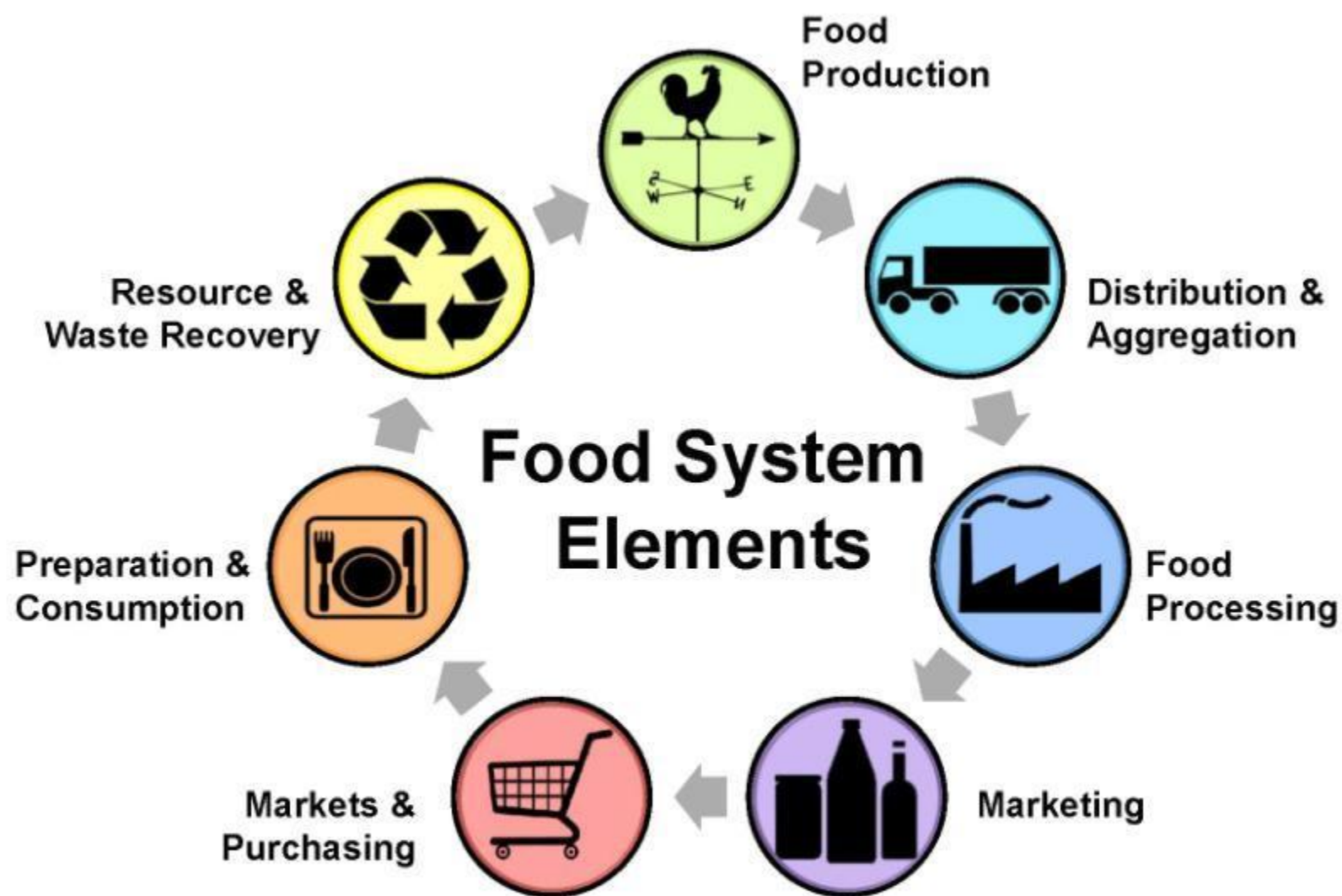
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FIGURE 5.1 Urban Food System Actors and Issues



Source: MacPhee, Rod, and Kendal Donahue. 2013. Municipal food policy entrepreneurs: A preliminary analysis of how Canadian cities and regional districts are involved in food system change. Toronto Food Policy Council.





Adapted by Christy Shi, Center for Environmental Farming Systems.

From: Wilkins, J. and Eames-Sheavly, M. Discovering the Food System; An experiential learning program for young and inquiring minds. Cornell University, Departments of Nutritional Science and Horticulture. <http://www.discoverfoodsys.cornell.edu/>

SMART URBAN DEVELOPMENT

JASON CHMURA / KSS Architects

MICHAEL GROVE / Sasaki
JAMES COFFMAN / Tower Farms

CHRIS FOREMAN / Marketplace City

MARIO CAMBARDELLA / City of Atlanta

DISTRIBUTION MEETS ARCHITECTURE



FOCUS ON METRICS, ROI, and VALUE



GLOBAL DESIGN FIRM
How FOOD SYSTEMS IMPACT CITIES



MILLIONS of MEALS PER DAY

CONNECTING SMART CITIES with NEW TECHNOLOGIES



FOOD!

STREET LIGHTS

TRANSPORTATION

FIND PILOT PROJECTS AS A FIRST STEP

BUT NEED a SYSTEMS APPROACH TO THE ENTIRE CITY

INCORPORATING AGRICULTURE INTO the CITY PLANNING PROCESS

FOCUS ON OUTCOMES

REPEAT WHAT WORKS

LEARN FROM OTHER CITIES

UNDERSTAND END USER GOALS

MAKE SURE THERE ARE DIVERSE VOICES AT THE TABLE



CREATE a FORUM

REACH OUT to ARCHITECTS and ENGINEERS to CREATE CONVERSATIONS

GATHER RESEARCH

FOSTER COMMUNICATION

BUT... WHAT ABOUT DATA SHARING?

WON'T BE PROPRIETARY FOREVER

LOOK FOR INTERESTING DATA PARTNERSHIPS

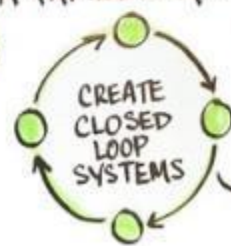
WORRY ABOUT CHINA

DON'T MAKE IT ABOUT PROFIT...

WORKING HARD TO SOLVE the PROBLEM

PROFIT...

of THE SMART CITY



FOCUS ON REGIONAL TRADITIONAL DIETS



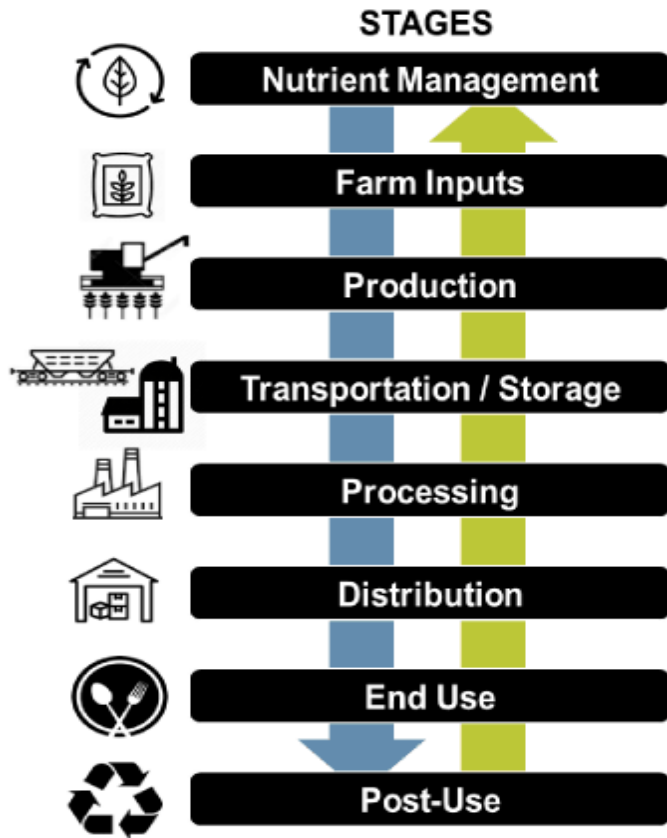
@groundworks6



The urban system looks like this



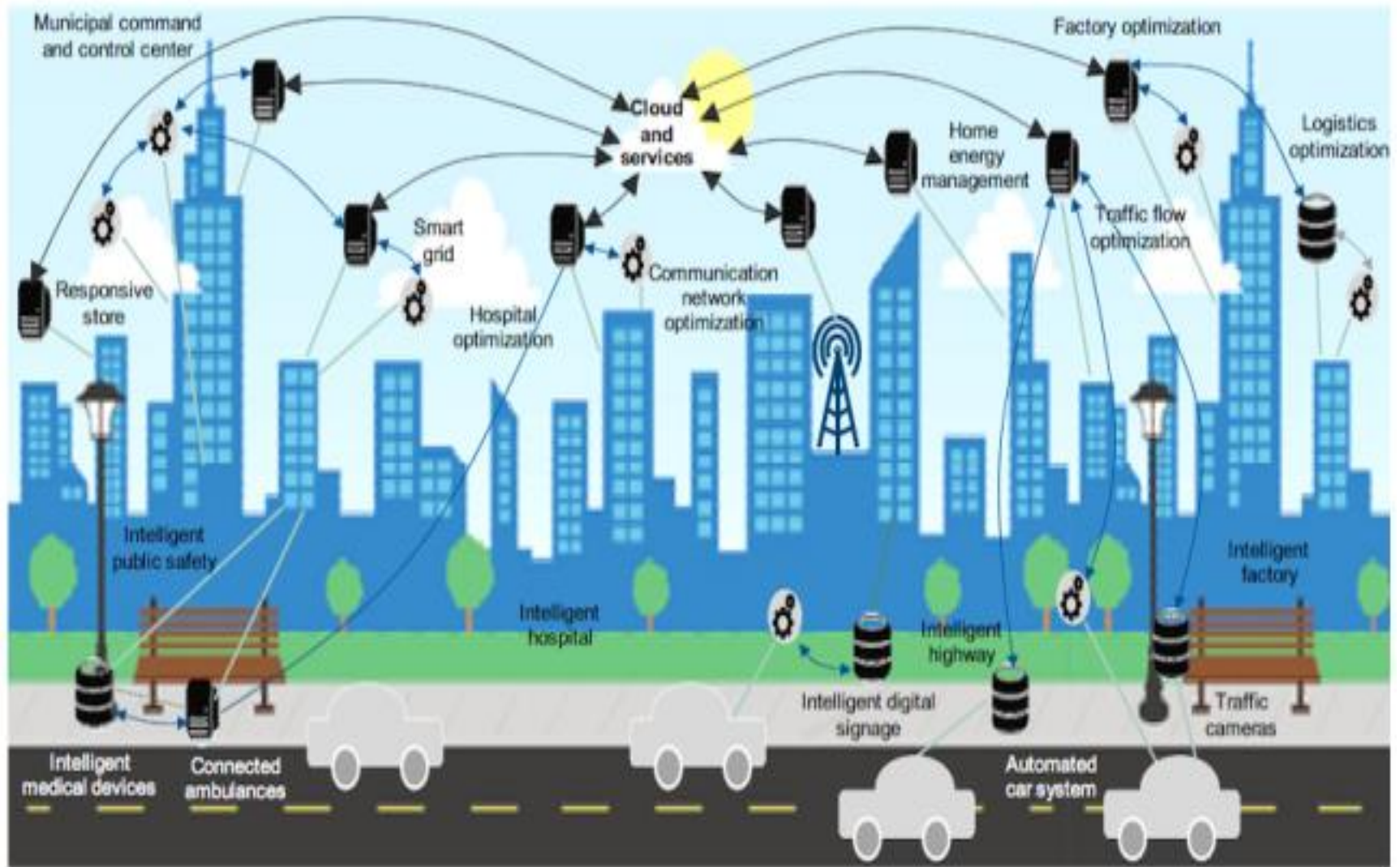
Food distribution system



Food distribution system



Smart city system



Food distribution

Distributors need to worry about their items being present on sales shelves and whether customers are buying them.

Orders received by the distributor through the passenger service or directly from the dealer should be delivered as optimally as possible to the client.

Distributors need all the information: customer information, previous orders, lists, list of actions, visit tasks, messages, personal goals, and more.

Warehouse management systems (WMS) using bar codes, transfer terminals and voice guidance have become a constant in successful distributor companies.