Submission No 53

FOOD PRODUCTION AND SUPPLY IN NSW

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"Veganic farms are complex systems where native animals, birds and insects are not driven away, but are welcome to co-habitate. Insect control happens naturally, as part of the overall ecosystem. "Biological control of insect and disease pests occurs naturally by creating or maintaining habitat for pest-eating birds, bats, insects, fungi, bacteria and soil microorganisms." Helen Atthowe, Veganic farmer and Horticulture Research Assistant for Oregon State University

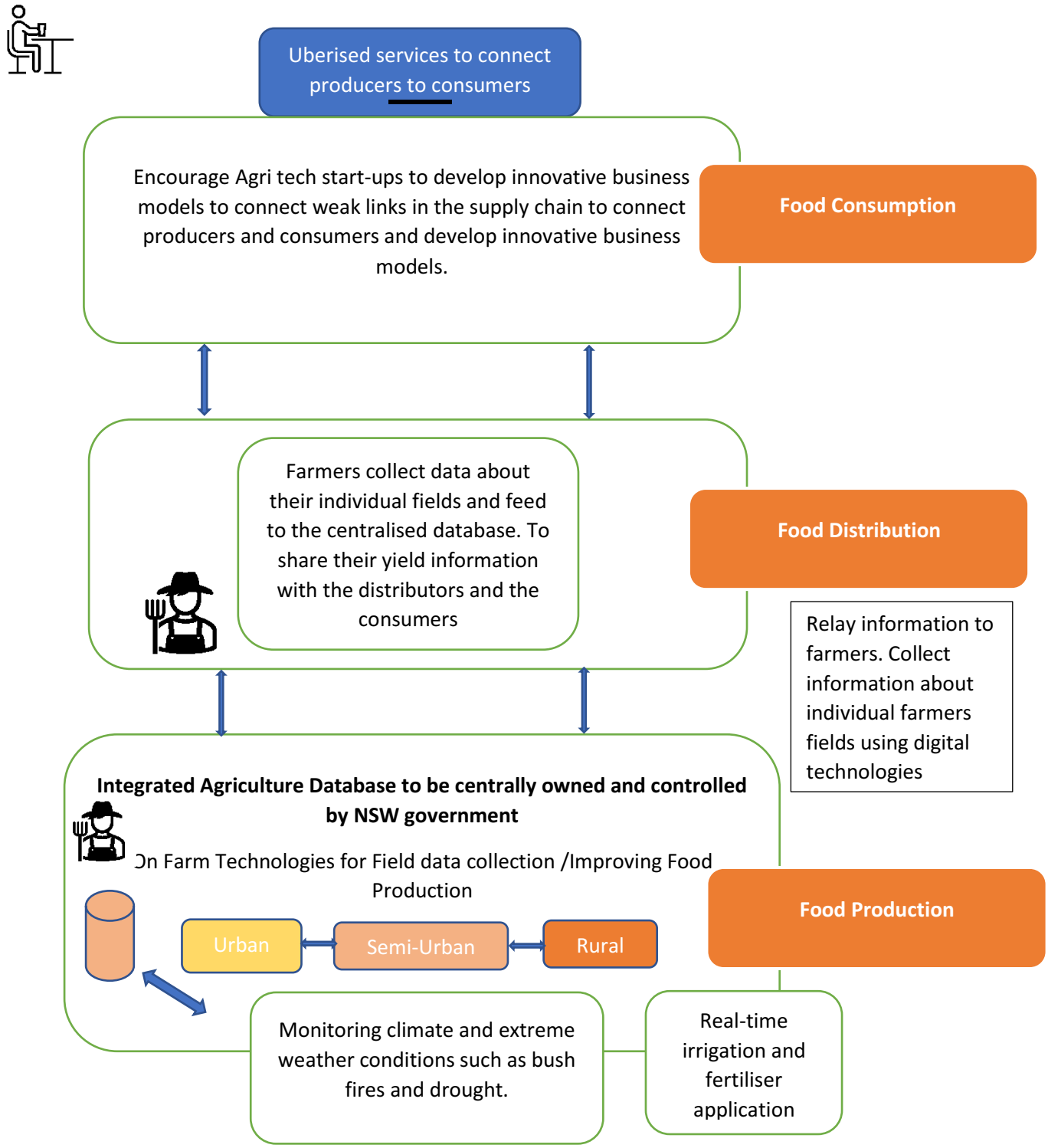
Sustainable veganic food ecosystems for the population living in the cities could be created by smart integration of technology in the farms. Digital technologies such as Social Media, cloud computing, and Artificial Intelligence could help in enhancing connectivity, environmental sustainability and productivity that links urban, rural and peri-urban producers and consumers and increases overall food production and distribution (Appeaning Addo, 2010). Focusing only on maximising yield has resulted in climate change and has significantly eroded natural resources including soil, land and water. There are many community-based farms across NSW. However, there are a few veganic farms which uses sustainable veganic farming practices (no harsh chemicals or blood & bones-based soil/manure) for garden bed preparation. The challenge in NSW agriculture sector is understanding weak links along the agricultural supply chain and leveraging digital technologies to create new business models to boost the food production and distribution. Australia ranks second in the growing vegan movement and a 2020 study found 47% of Australians saying they are reducing their meat and/or milk intake, with a further 5% saying they are vegetarian and 3.4% vegan (Euromonitor, 2020).

Application of data science and technology in agriculture is a growing phenomenon. NSW could potentially collect, use and analyse massive amounts of machine-readable data about every aspect of the agri-food value chain and perform data-driven decision making to enhance NSW food production and distribution. Digital technologies could be leveraged to link farmers to the upstream and downstream markets, by supporting the vulnerable farmers in remote and regional areas of NSW with digitised support services, monitoring environmental impacts such as bush fires and cyclones, soil fertility monitoring and to tackle multiple inefficiencies present in the NSW agrifood system. The value addition and productivity could be improved without necessarily industrialising in the traditional sense (UNCTAD, 2019).

On the farm, farmers could leverage the digital technologies to maximise agricultural output by combining data about the farmer's land with information on how to better use production knowledge. For instance, farmers cannot grow good quality vegetables and fruits without irrigation, which worsens further with the impact of extreme climate conditions. "Packaging Technologies" such as solar pumps fitted with soil sensors linked to the cloud would greatly improve the effectiveness of drip irrigation systems (Davies & Garrett, 2018).

Off the farms the technologies could be used to lower transaction costs arising from farmer's interaction with markets and the NSW government, by lowering the time and cost of transmitting huge volume of data across greater distances.

Figure 1: Integrated framework – Using digital technologies to connect all the actors: Urban, Semi-Urban and remote/rural/regional communities with the producers and the government in the entire Agri-Food supply chain (Production, Distribution and Consumption)



References

Appeaning Addo, K. (2010). Urban and peri-urban agriculture in developing countries studied using remote sensing and in situ methods. *Remote Sensing, 2*(2), 497-513.

Davies, F. T., & Garrett, B. (2018). Technology for Sustainable Urban Food Ecosystems in the Developing World: Strengthening the Nexus of Food–Water–Energy–Nutrition. *Frontiers in Sustainable Food Systems, 2*. doi:10.3389/fsufs.2018.00084

Euromonitor. (2020). The Rise of Vegan and Vegetarian Food. *Euromonitor International*. Retrieved from https://www.euromonitor.com/the-rise-of-vegan-and-vegetarian-food/report

UNCTAD. (2019). *Digital Economy Report*. Retrieved from https://unctad.org/system/files/official-document/der2019_en.pdf