



Employing a One Health lens to farming

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Connecting People, Connecting Nature conference

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Acknowledgements

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- Mary Bonet and team
 - K2W Glideways
- Upper Lachlan Landcare
 - Ruth Aveyard, Nerida Croker and Paul Hewitt
- One Health colleagues



My passions: a commitment to family farming and systems thinking



Village chickens and their owners

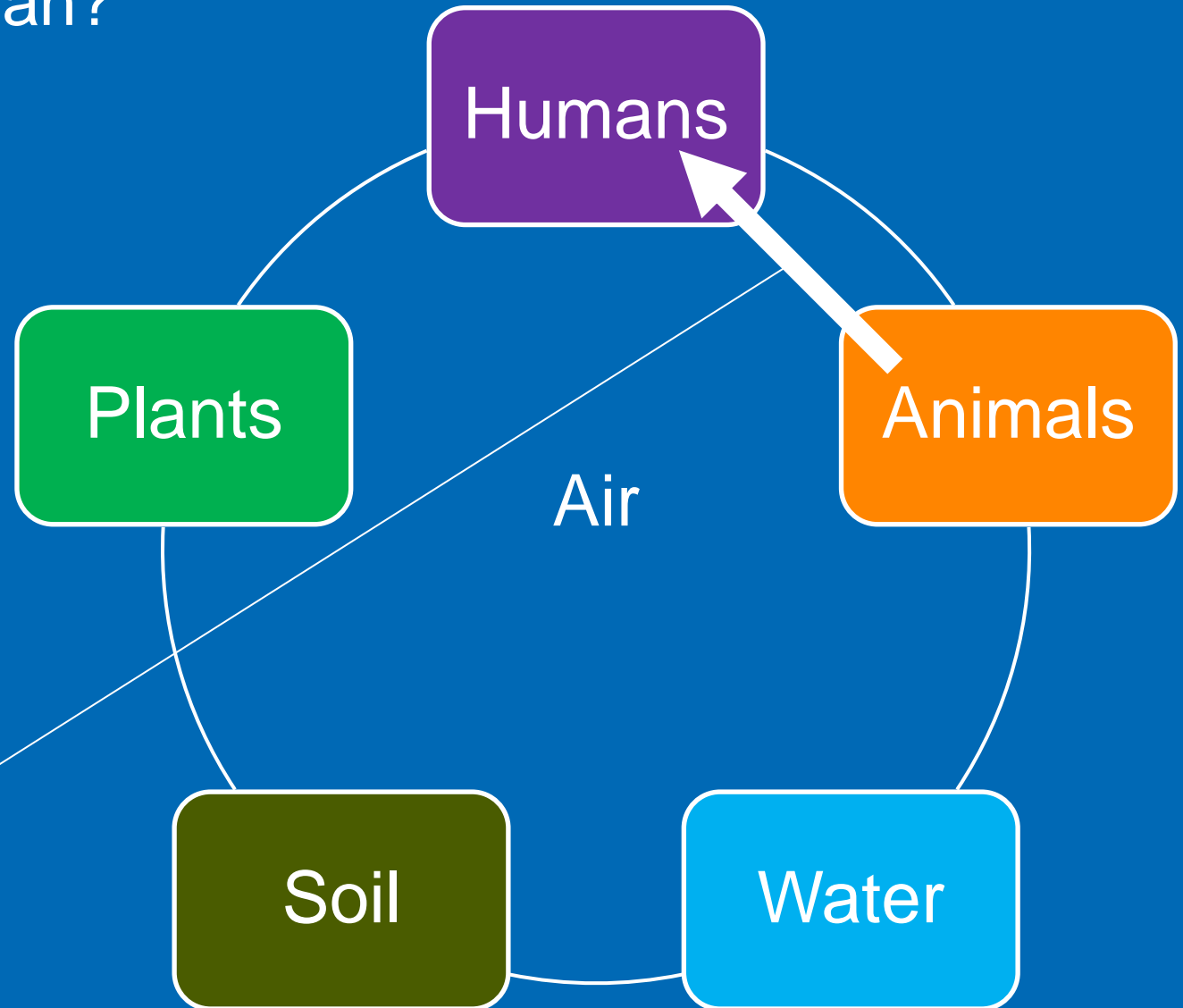


Merino sheep and Australian farmers

One Health: great term but what does it mean?

One way of viewing the environmental systems that are so important to the health of our world

In early 2000s, had strong focus on zoonotic disease, i.e. transmission of pathogens from animals to humans



2021 definition by One Health High Level Expert Panel (OHHLEP)

“One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems.

It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent.

The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for **clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.**”
(OHHLEP 2021)



Background: some macro issues

Agriculture largely seen as an engine of the national economy

Farming is strongly linked to commodity production

In my opinion, farming and farmers should be seen as essential to civilisation as we know it



The Sydney Morning Herald

Politics Federal

This was published 5 years ago

Hug a farmer, they've just saved Australia's economic bacon

 [Eryk Bagshaw](#)

March 3, 2017 – 10.30pm



The average age
Australian farmers
is 58

Numbers of
family farmers
have declined
noticeably over
the past 30 years

Organic soil carbon
has declined by
50% since European
colonisation

Australian
Government
expenditure in
support of the
Agricultural Sector
is well below that
seen in Europe and
North America.



Biodiversity consequences of disengaging farmers and agriculture from environmental health

2001: Declining Biodiversity and Unsustainable Agricultural Production-Common Cause, Common Solution?

“Living organisms provide a range of biological services that benefit people including pollination, recycling, nitrogen fixation, replenishment of atmospheric oxygen and removal of carbon dioxide. The value of these services is only starting to be properly recognised, and we are realising that in dollar terms alone, losses in biodiversity will have significant negative effects on the biological services that they provide.” (Stevens, 2001)

2021: Detailed assessment of the reported economic costs of invasive species in Australia

“Invasive species estimated to cost Australia up to \$24.5 billion annually.” (Bradshaw et al., 2021)

2021: State of the Environment

“Overall, the state and trend of the environment of Australia are poor and deteriorating as a result of increasing pressures from climate change, habitat loss, invasive species, pollution and resource extraction.” (SOE, 2021)

Tackling the separation of farmers and agriculture from environmental health

- **Aboriginal Australians** have lived and continuously managed land in Australia for **over 60,000 years**
- According to their world view (Dreamtime), **people and country are inseparable**
- **Family farmers and Traditional Custodians** are beginning to work together to regenerate soil and rebuild biodiversity
- An intersectoral, **One Health** approach to food system transformation is vital



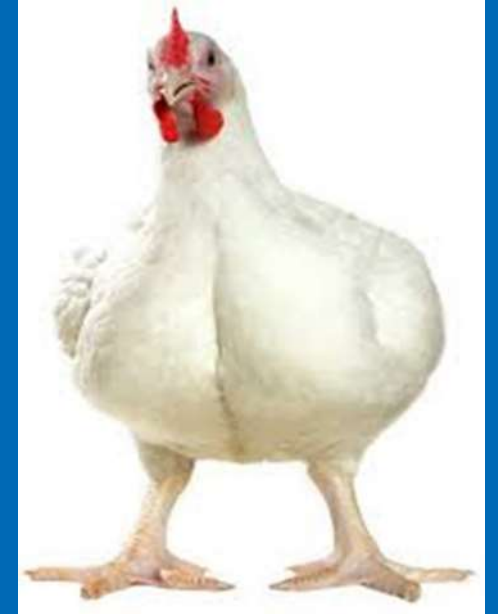
Nutritional consequences of disengaging farmers and agriculture from human health

Nutrient profile of staple grains declined as intensification of livestock production increased

The modern broiler carcass – **more energy coming from fat** than protein with **reduction in *omega-3* fatty acids** (Wang et al. 2009)

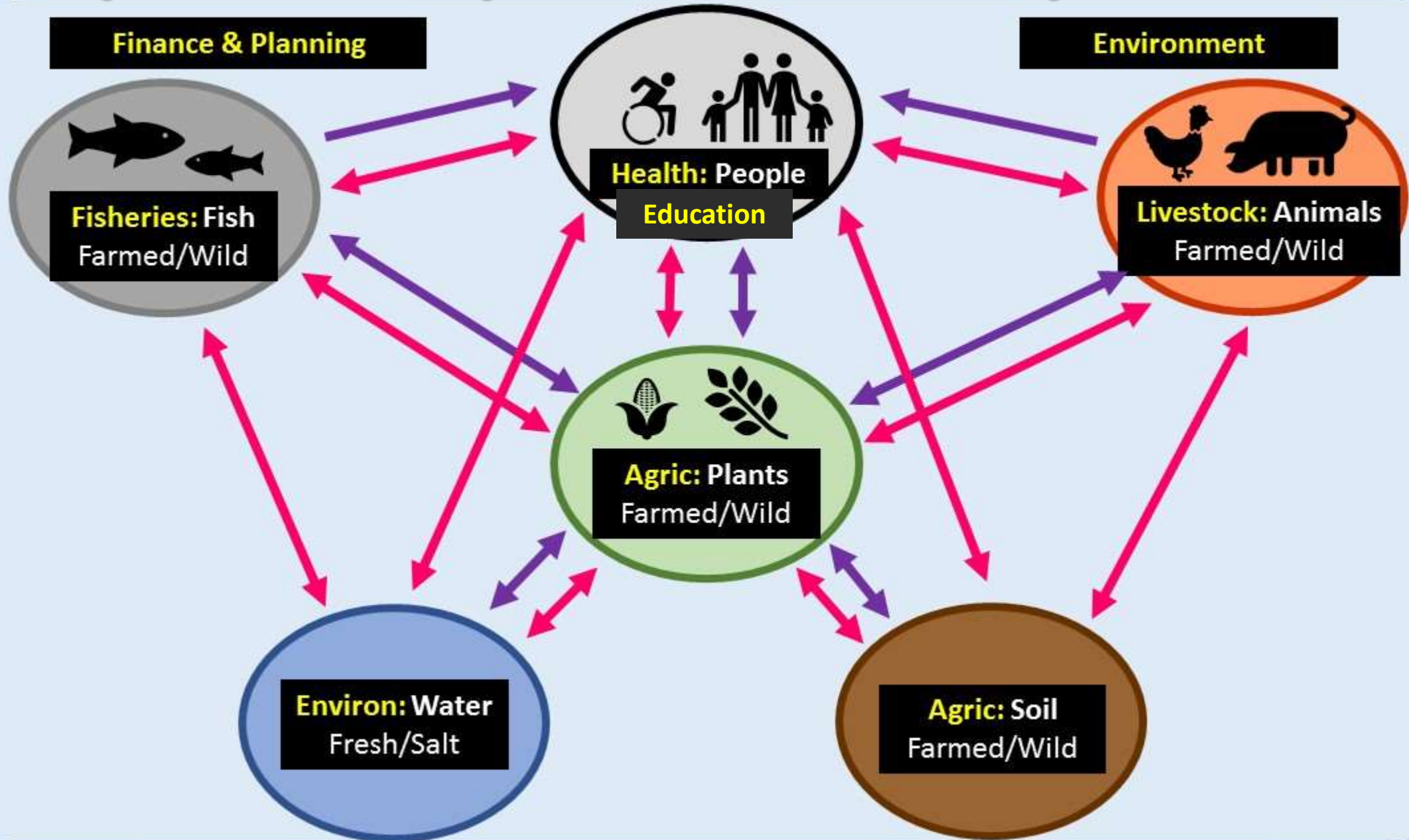
Diminished nutrient profiles of farmed fish
(de Roos et al. 2017)

Regenerative farming practices enhance the nutritional profiles of crops and livestock (Montgomery et al., 2022)



<https://www.istockphoto.com/photos/aquaculture?phrase=aquaculture&sort=mostpopular>

Achieving sustainable farming is an intersectoral, whole-of-government endeavour



Gov't Agencies:



Nutrient flows:



Microbe movement:



Micro level: a farming case study

Toledo: my farm

- Bought November 2014
- 204 hectares; merino sheep
- Transitioning to regenerative management
- Regular soil pH & organic carbon testing
- **K2W project: Great Eastern Ranges K2W**
Grant Project Number CT00234
- Start date: 1 September 2015
Finish date: 30 December 2016
- Conservation Volunteers
- German backpackers
- 3,036 metres of fencing
- ~ 3,000 indigenous trees & shrubs
- Glider nest boxes, Feb 2022



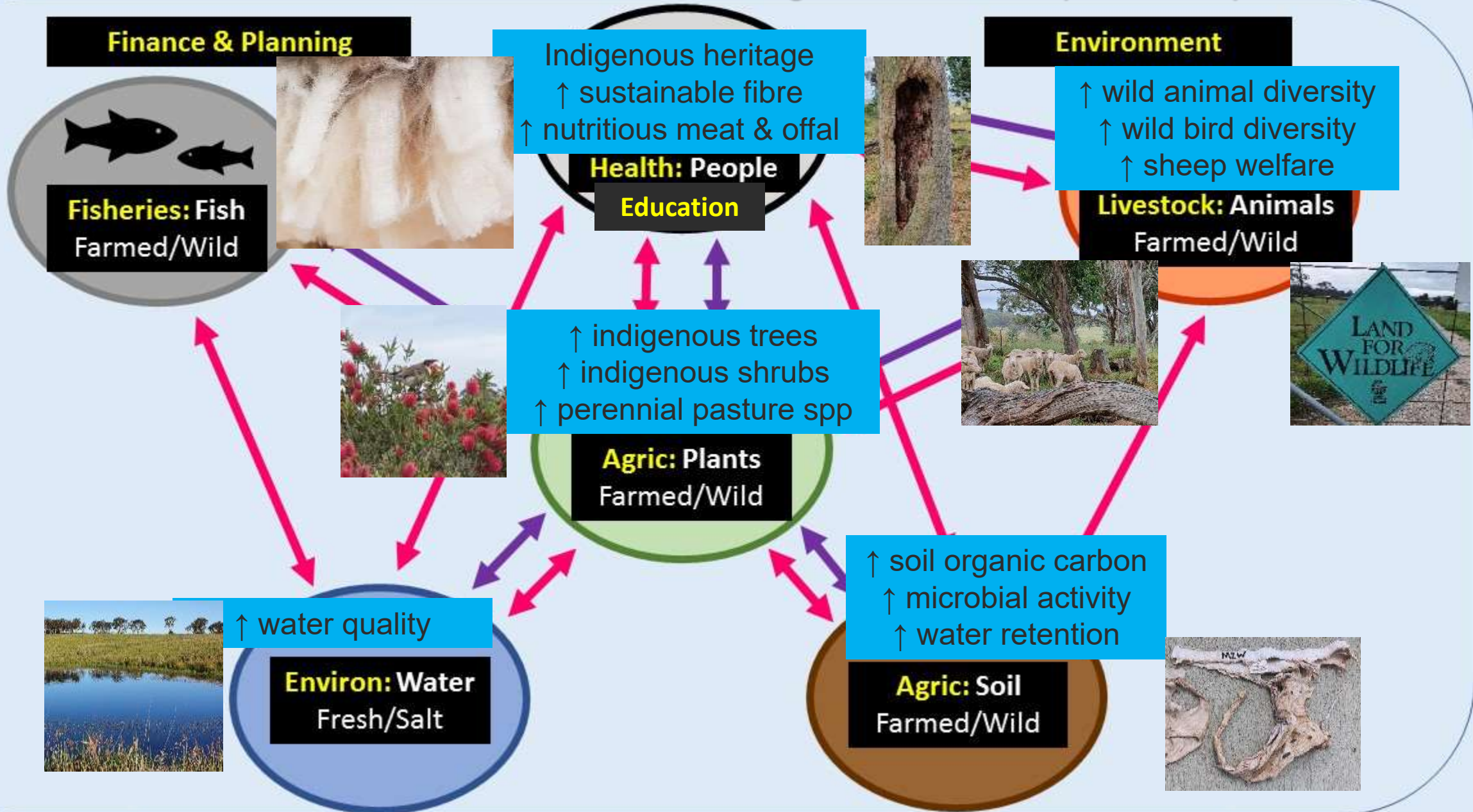
Before and after (I)



Before and after (II)




Toledo's contribution to One Health land management & sheep & wool production



Gov't Agencies: 

Nutrient flows: 


Microbe movement: 


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Recommendations for achieving a One Health approach to farming

 **Value family farmers and fishers**
who produce quality, sustainable food

 **Circular food bio economies**
valuing all inputs: e.g. labour, animal
welfare, nutrients, soil, and water

 **Include tailored information on food**
(e.g., the naturally nutrient-rich score
per unit cost, farm biodiversity and
carbon sequestration data)



Transform health services so that
farmers, fishers, food makers and
distributors are recognised as
essential partners in delivering
good health and wellbeing for
people and our planet

Thank you for your time and your interest