

OUR LAND
AND WATER

Toitū te Whenua,
Toiora te Wai

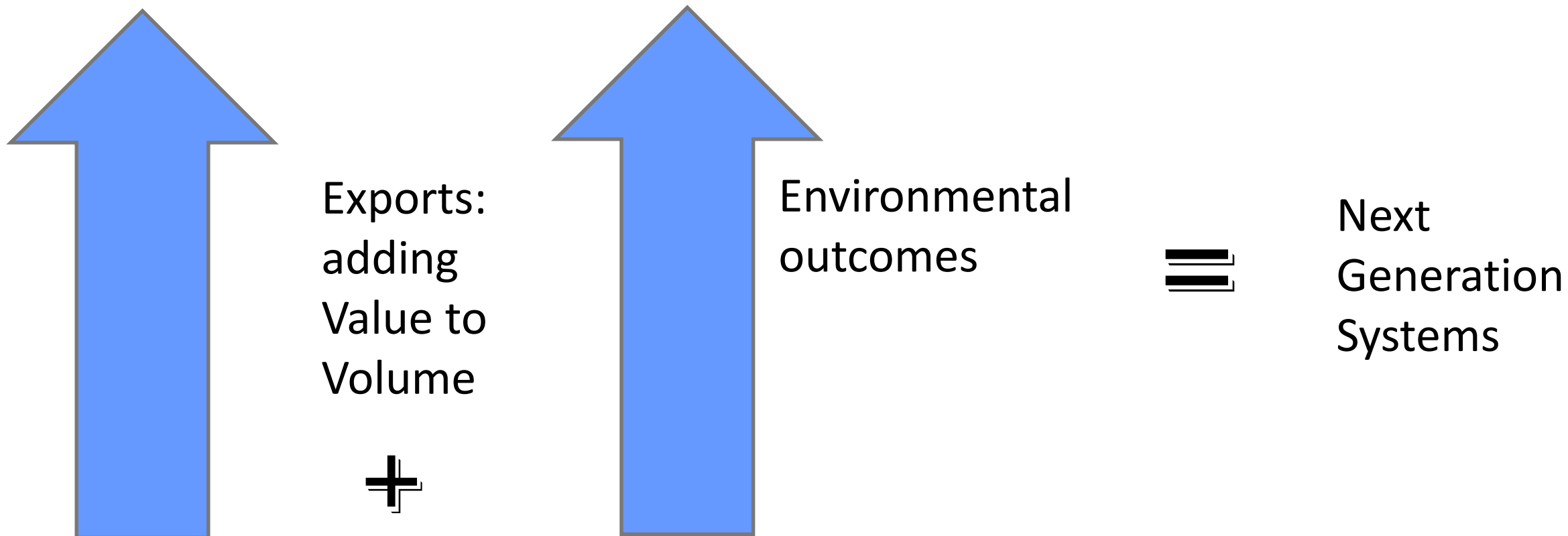
Our Land and Water National Science Challenge

Toitū te Whenua Toiora te Wai

Next Generation Systems

Robyn Dynes, Anita Wreford, Alan Renwick, Warren King, Paul Johnstone, Peter Clinton,
Carolyn Hedley, Grant Edwards.

Beyond business as usual



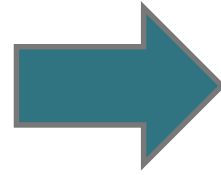
Linking to other Challenge research & aligned research



Sources & Flows

The Problem

- We know Water quality needs to improve
- We know the contaminants are coming from the land



Next Generation Systems:

- new systems
- New technologies
- Transformational change

- So **what** do we need to do on the land and **where**?

– Within a catchment

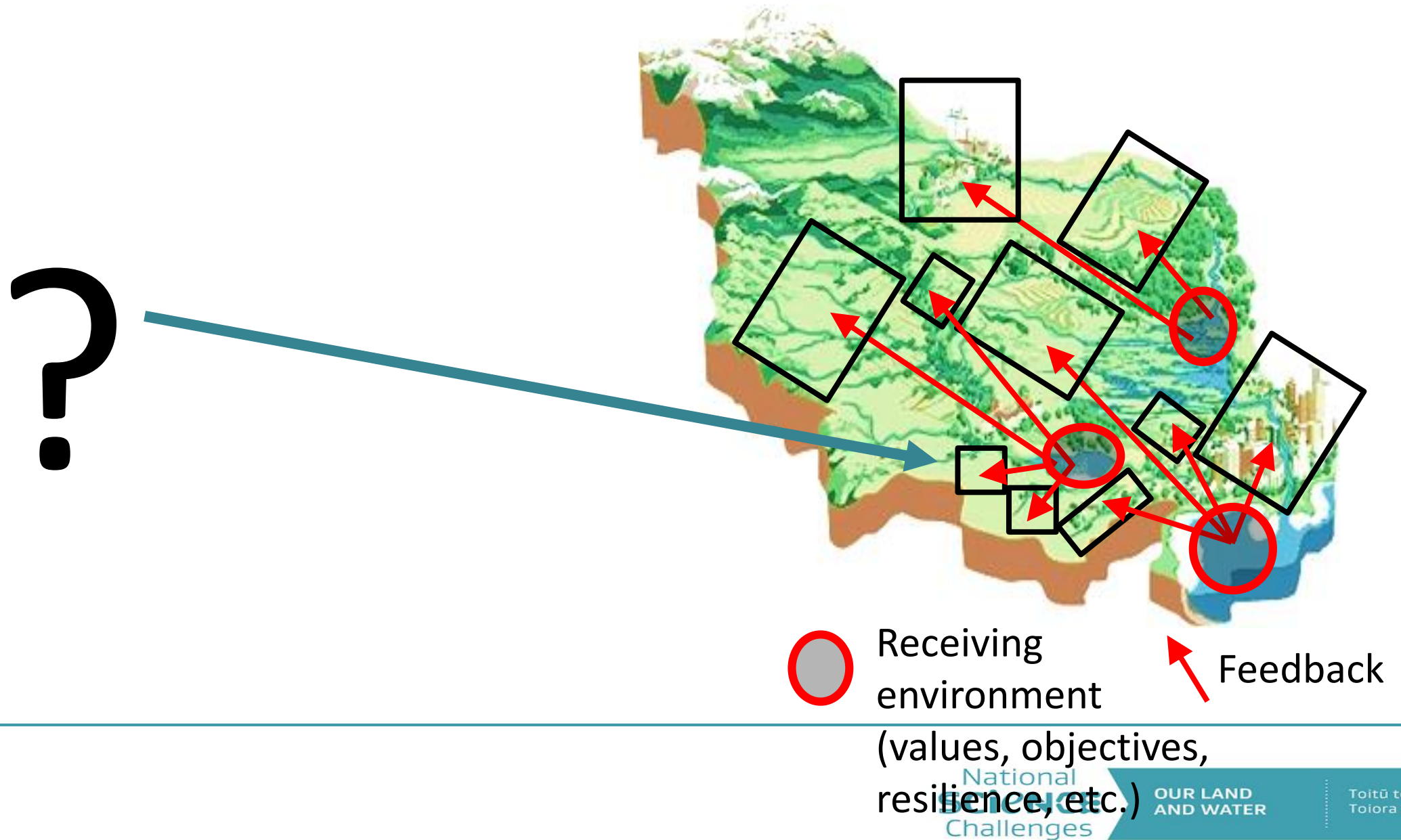
- Sources = where to target

- Flows = where to target

What and where
In catchment & in landscape



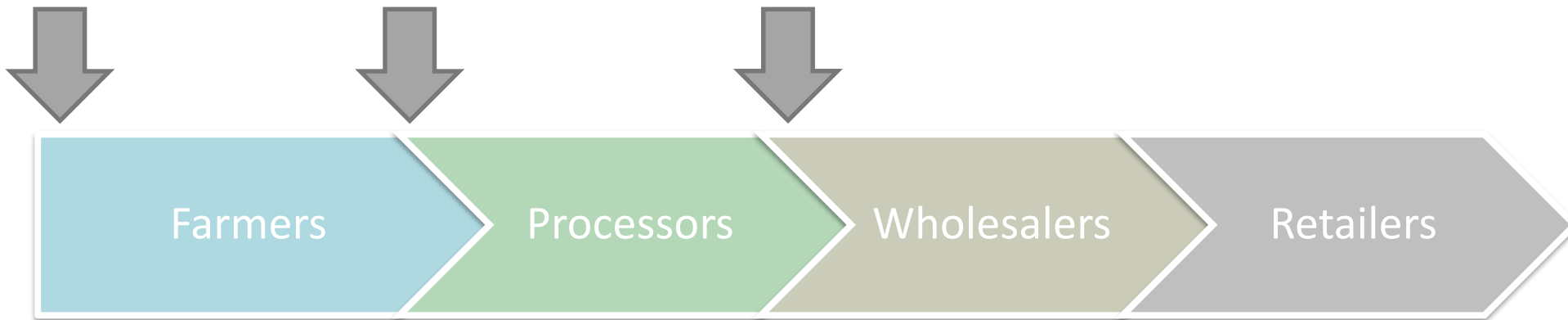
Feedback from receiving environments to land use decisions at source areas.



The value chain

Next Generation Systems:

- Science supporting business innovation
- Selecting NGS in with complex drivers
- Multiple criteria decision making.



Vision Mātauranga

- partners in transformation
- sharing collated data
- case studies in value chain
- case studies in supply chain development?

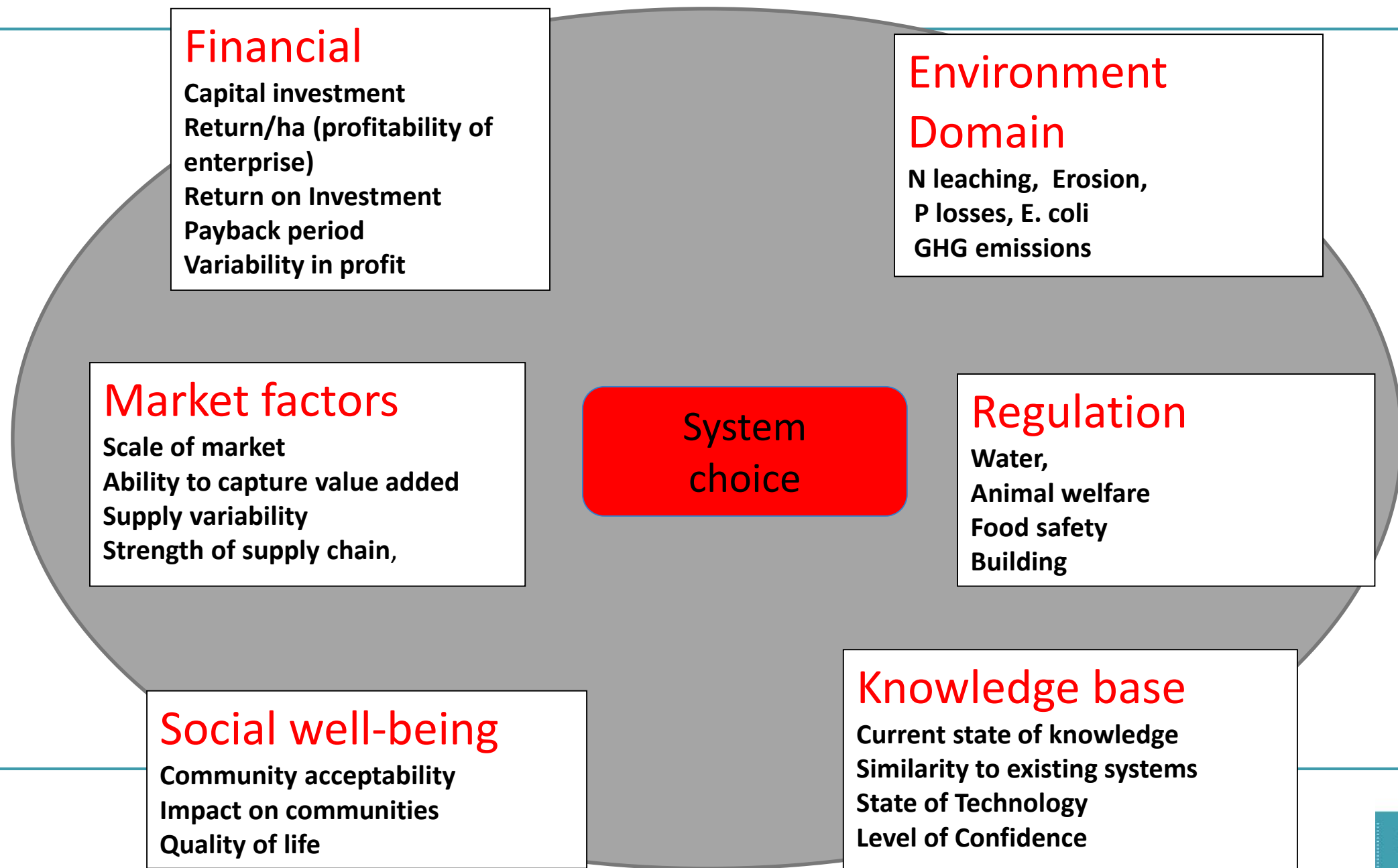
Why science in NGS

- Development, redesign, New technologies
- Science supporting innovation
- Business decision
- Which solutions have comparative advantage??



Which system?

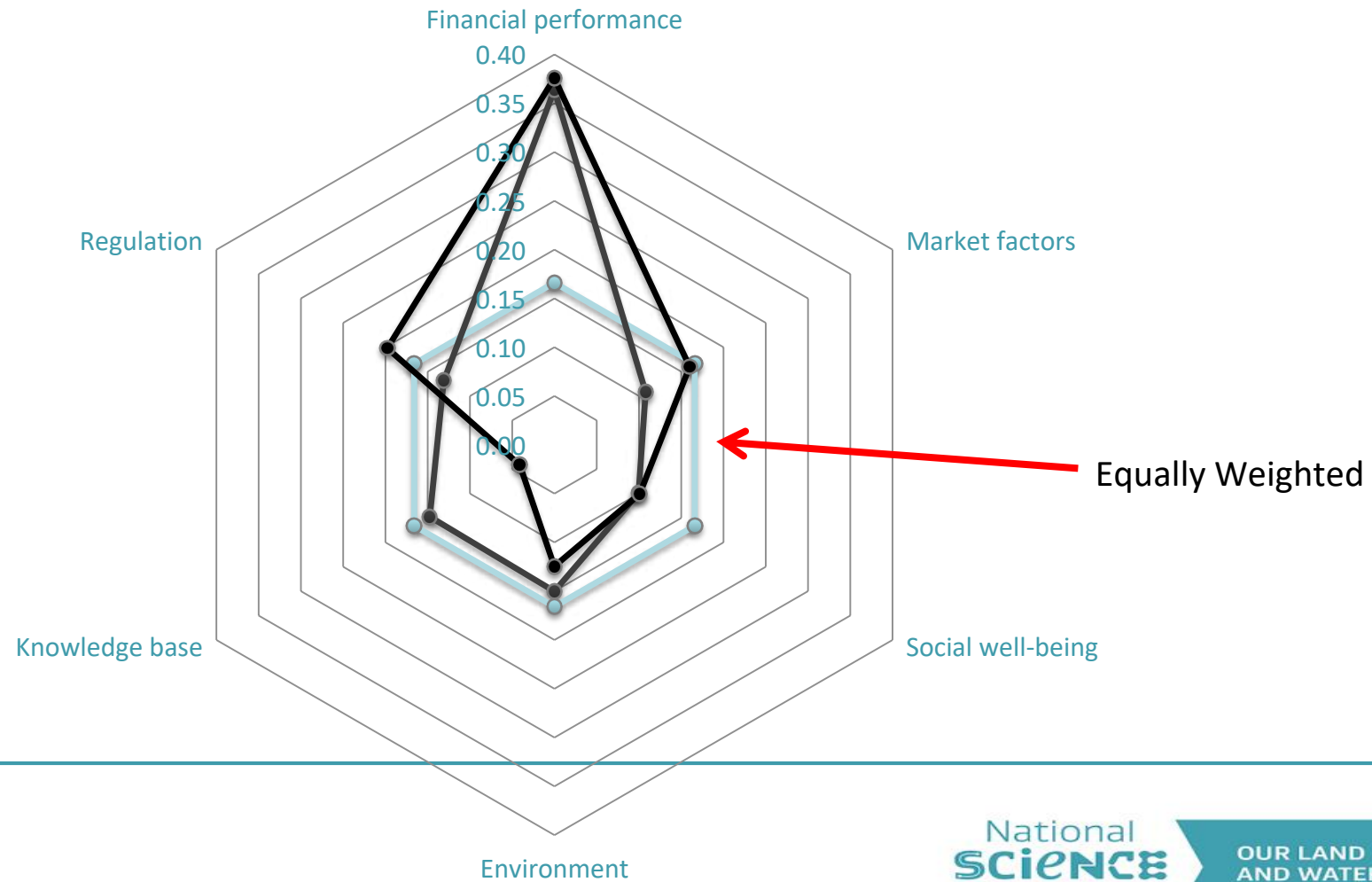




Case study-sheep milking



Weights at Domain Level



Weighting of each alternative under each criteria – sheep dairy example



Selection of Preferred Options

	Milking Sheep (Actual)	Dairy Goats	Blueberries	Specialty seeds
Int 1	3.69			
Int 2	3.77			
...	...			
...	...			
Score				



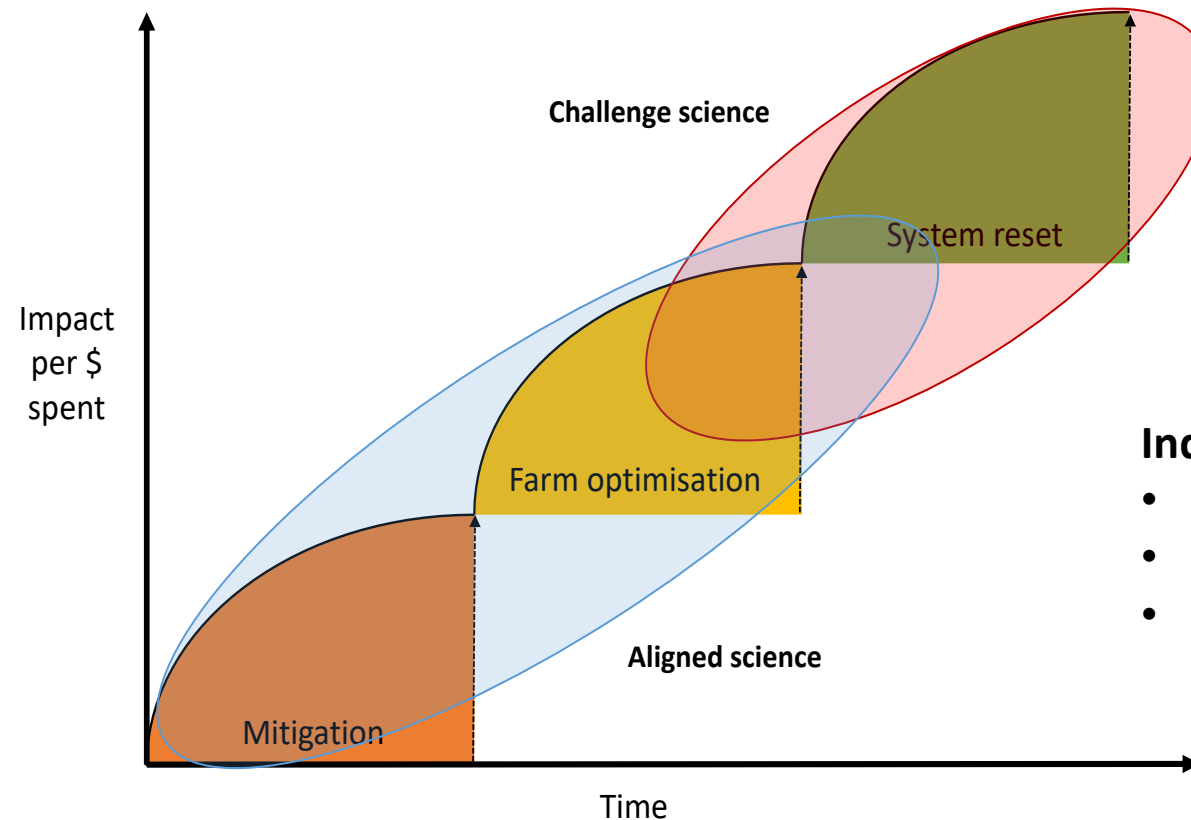
What are the benefits from partnering with NGS?

Business

- Certainty of investment
- Less risk

Science

- Investment priorities



Industry

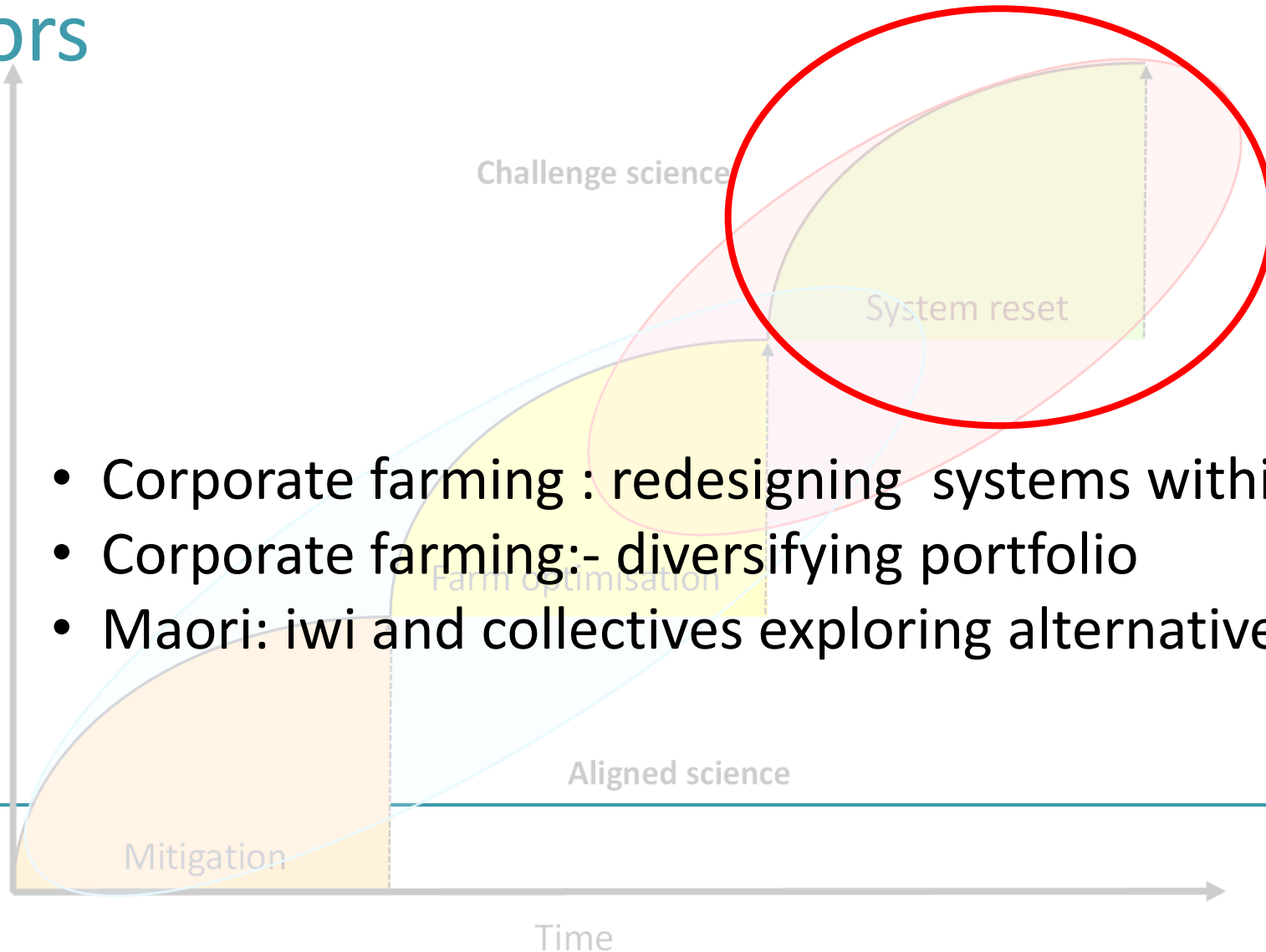
- Consistency of desired product
- Valued NZ brand
- Shifting culture and performance

Next Generation Systems: partnerships with innovators

- Regional Councils
- Land owners

Impact
per \$
spent

- Corporate farming : redesigning systems within nutrient limits
- Corporate farming:- diversifying portfolio
- Maori: iwi and collectives exploring alternatives



Next Generation Systems: case studies of optimised systems

- Value chain – Taupo beef
- Precision Agriculture - Greenvale pastures
- Continuous-harvest forestry
- Iwi – supply chain development
- ????

