



Centre for Agricultural Engineering



Nutrients in a Circular Economy (NiCE)

Australian Research Council Research Hub



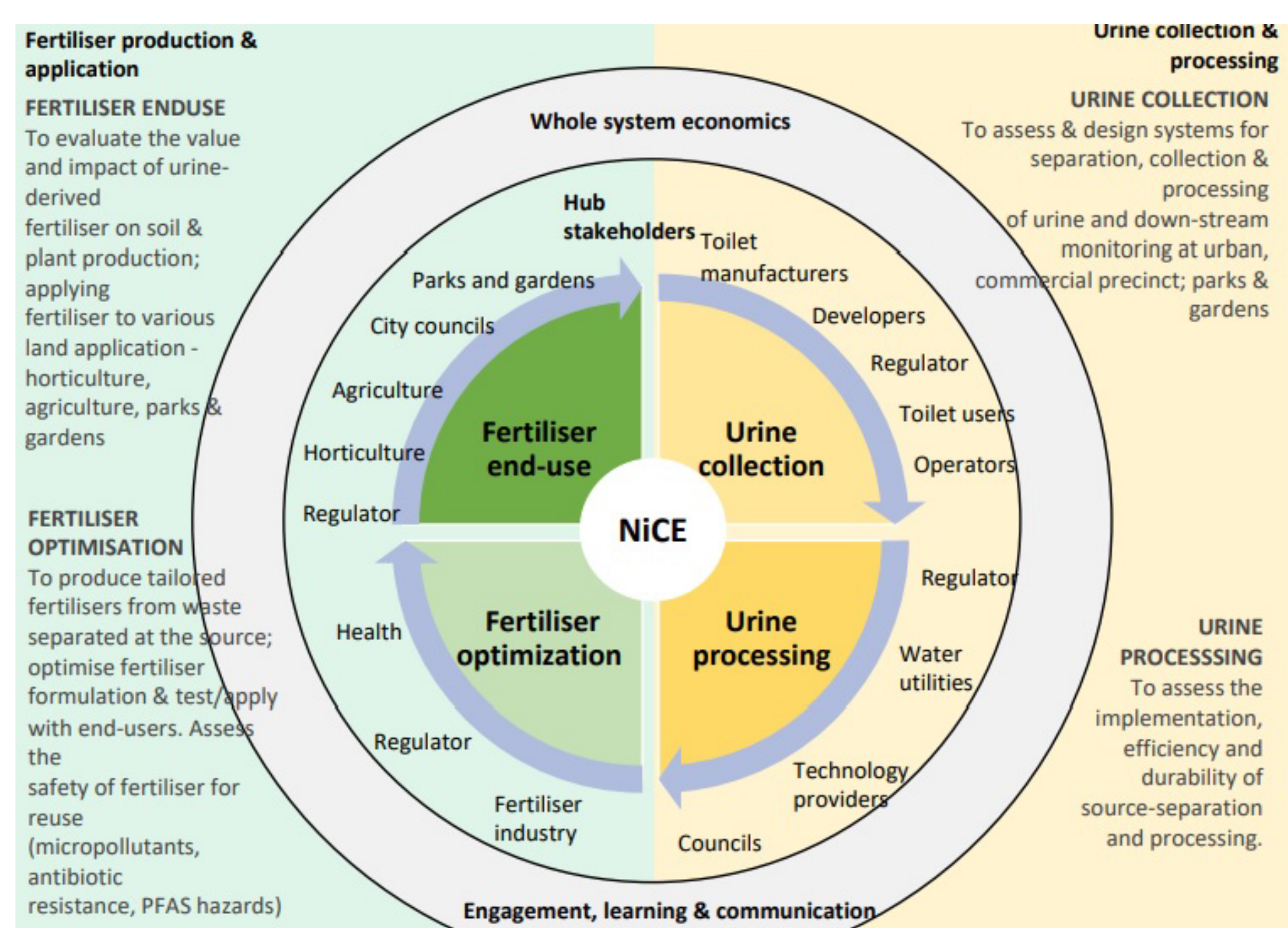
Program background

The Nutrients in a Circular Economy ARC Hub is a key partnership to transform the wastewater industry and build confidence for a market in re-using urine separated and collected at building level as the source of productive fertilisers for agriculture, horticulture and/or parklands. The hub aims to transform the wastewater industry through urine diversion and decentralised treatment:

- To make removal, transport, and treatment of sewage adaptable to fast-changing cities
- To better protect waterways from the harms of excess nutrients (e.g. nitrogen and phosphorous), pharmaceuticals and hormones
- To secure a new sustainable source of fertiliser for agriculture and horticulture.

Research themes

1. Urine collection
2. Urine processing
3. Fertiliser optimisation
4. Fertiliser enduse



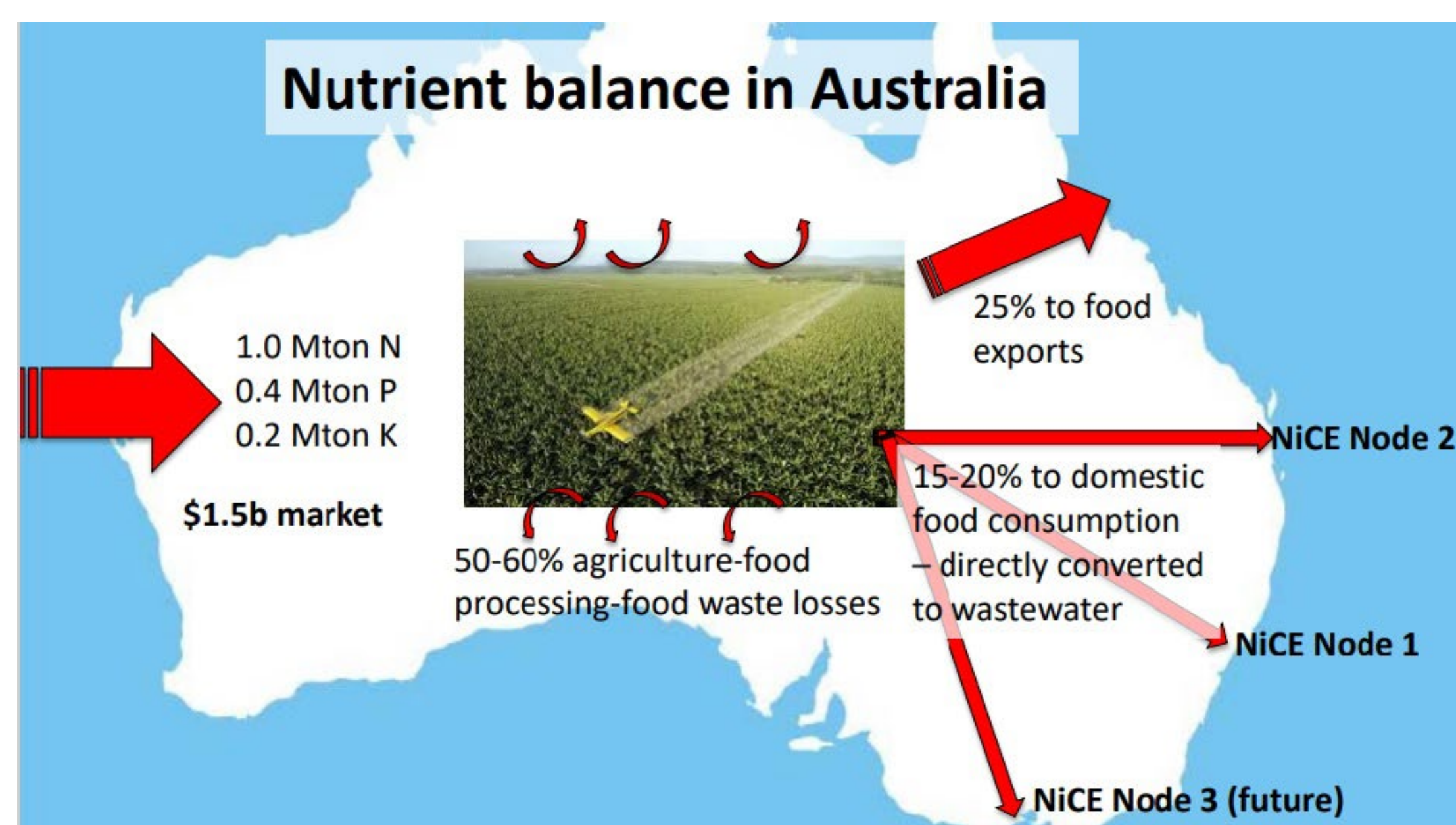
Work program

The work will be delivered across 3 nodes. USQ will collaborate as part of the Brisbane node delivering to:

Evaluate and demonstrate urine derived biofertiliser efficacy in field trials. Research will investigate fertiliser effects on nutrient cycles, plant productivity and nutrient recovery in plants over a range of peri-urban land management practices (paddocks, gardens, plantations and lawns. The urine-derived product (Ugold) and derivatives will be applied to soils at trial sites near Brisbane (including USQ sites and City Parklands).

Key benefits of the NiCE ARC Hub

- Economic - know-how for a new manufacturing industry
- Commercial - decreased dependency on fertiliser imports to Australia
- Environmental - healthier waterways and ecosystems
- Societal - flexible and more resilient wastewater management



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