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Ministry for Primary Industries
Manatū Ahu Matua



Ruamahanga Economic Modelling Update to Whaitua Committee

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Monday 3 August 2015

Growing and Protecting New Zealand



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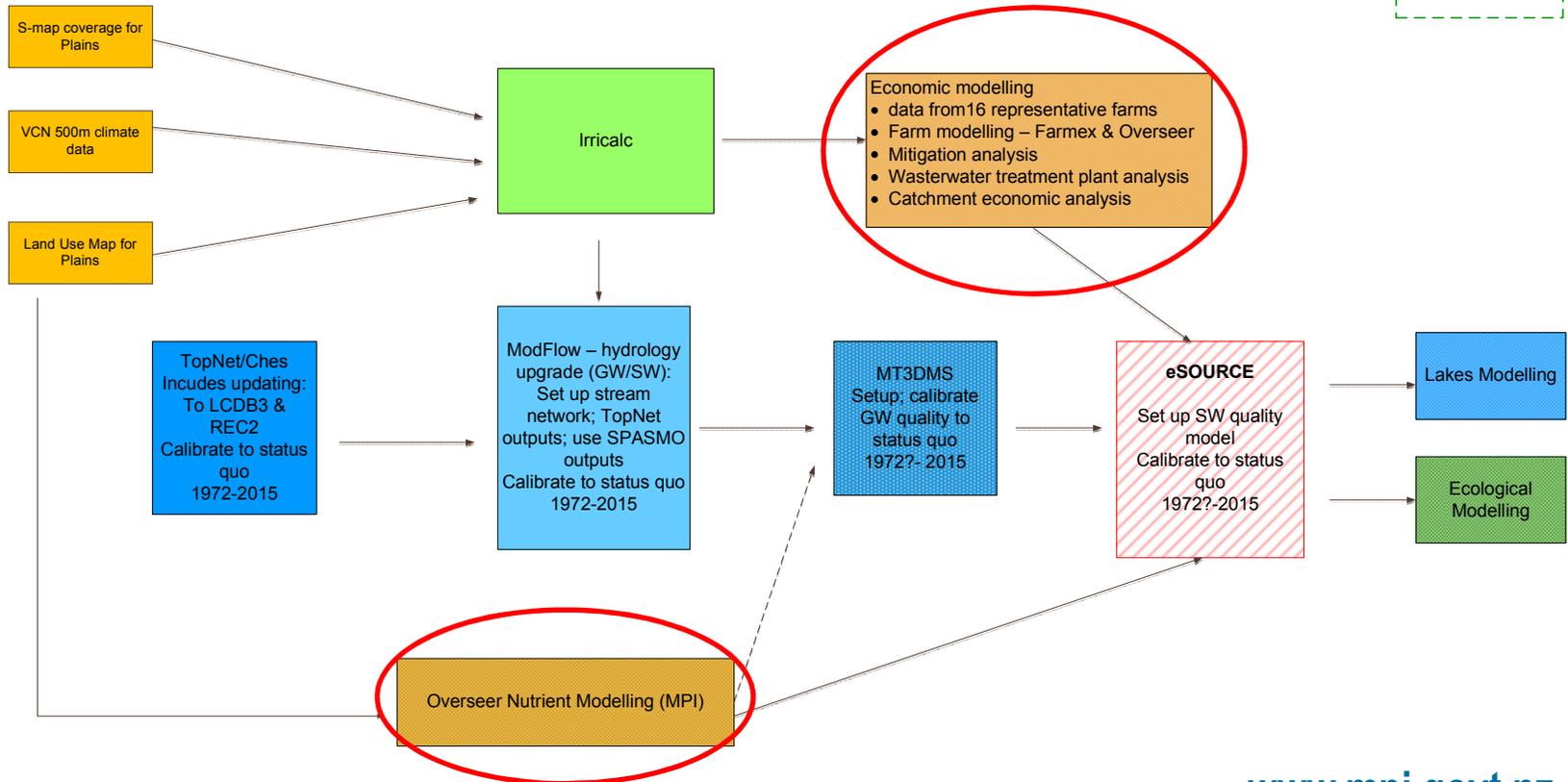


Collective Modelling Approach

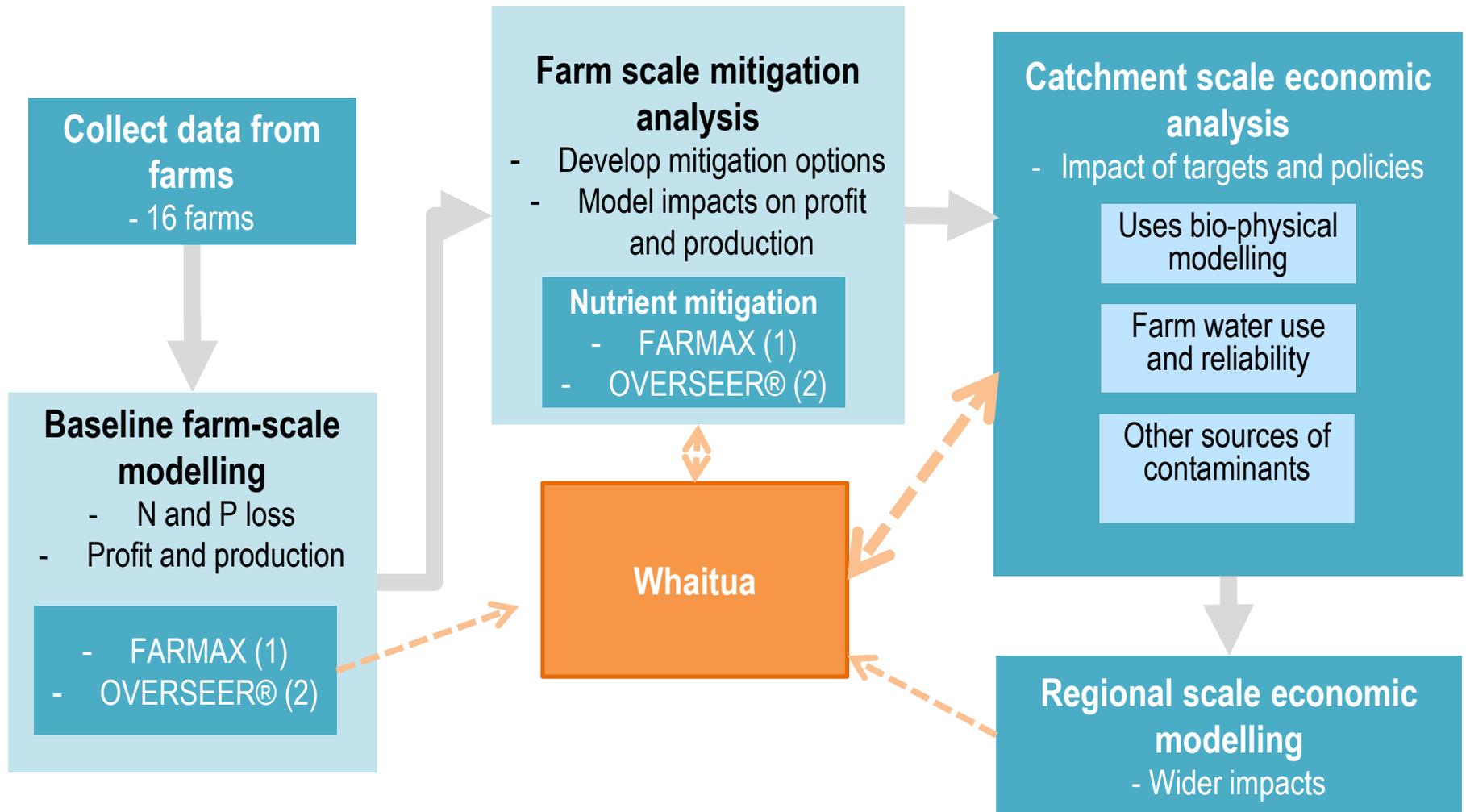
Ruamāhanga Whaitua Modelling Architecture
3 July 2015

SPASMO Crop yield modelling (representative farms from MPI) 1972-2015

SPASMO not secured; Irricalc will be used



Economic Modelling Framework



Farm-level Models



- Dairy, Sheep and Beef, and Deer
- Farm planning tool
 - Productivity
 - Stocking and rotation
 - Feed / pasture
- Forecasting; scenarios for financial and physical feasibility



- Dairy, Sheep and Beef, Deer, Dairy Goats, Horticulture, Cropping
- Nutrient budgeting tool
 - Profitability
 - Managing within environmental limits
 - Farm system efficiency
- Forecasting; scenarios for management practices and farm systems

Case study farms

Number	Description (farm type)	Farm area (hectares)
1	Dry flat dairy	127
2	Dry flat dairy	175
3	Irrigated flat dairy	260
4	Dry dairy, high rainfall	125
5	Organic farm (dairy)	210
6	Summer dry, breeding/semi-finishing	585
7	Summer wet, breeding/semi-finishing	360
8	Summer wet, breeding/semi-finishing	450
9	Flat drystock, beef finishing	927
10	Flat drystock, lamb finishing	360
11	Flat drystock, lamb finishing	93
12	Steep hill summer dry, store lambs	620
13	Cropping, some beef finishing	380
14	Dairy Support	210
15	Dairy Support	284
16	Viticulture	10

Farm scale progress update

- Raw data collected from all 16 farms
 - Finances and production
 - Environmental management
- Collecting further information to validate each farm, and adjust where needed
 - Sources include:
 - DairyBase (Dairy NZ)
 - Beef and Lamb annual benchmarking
 - Farm consultant's annual benchmarking data
- Commenced modelling in FARMAX, followed by Overseer (baseline scenario, before mitigation)

Completion of farm scale work

- Update to Whaitua and stakeholders on 31 August
- Develop a range of mitigation options that would be suitable for each farm type, based on data
 - Opportunity for input from Whaitua committee
- Model different mitigations in FARMAX and OVERSEER[®] to analyse impacts on performance

Catchment and regional scale

- Landcare to build catchment economic model to test:
 - Water quality targets
 - Policy options to meet these targets
- Then link with Wheel of Water project to estimate wider economic impacts

Questions & Discussion

