Challenges for Sustainable Development in the Motueka Catchment

Participatory Modelling with an Influence Matrix

Thinking about the Future

- what will the Motueka Catchment look like 20 years from now?
- how many people will live here?
- what social services will they need?
- which businesses will lead the way?
- will our natural resources support our economic and social development?

What Are Our Future Goals for the Motueka?

The group agreed these goals for the Motueka:

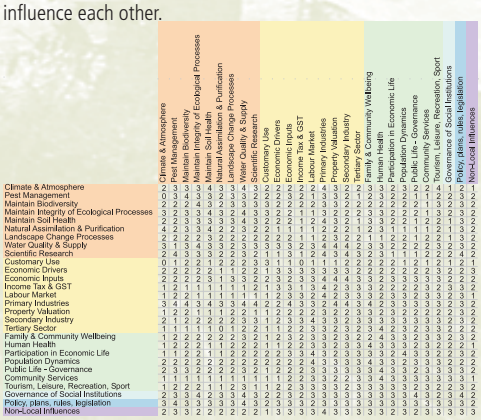
- a safe place to play and live
- economic & ecological balance
- pristine character & beauty
- economic viability for business development
- maintain biodiversity
- community diversity
- landscape diversity
- coastal integrity
- identity

Which Factors Influence Progress Towards Our Goals?

The group identified 171 factors, which could help or hinder achievement of these goals. To make these manageable, they were grouped into 28 key factors.

Participatory Modelling

During 5 evening meetings with the ICM Community Reference Group (CRG) we worked together to build a number matrix for the Motueka that shows how we think the 28 key factors influence each other.



Factor Influence on…

We calculated the total influence of each factor on all other factors and ranked the scores.

Influence on …

Ecological .....
Economic .....
Social .....
Governance .....
Policy / legislation .....
Non-local .....

	Influence
Customary Use	43
Landscape Change Processes	54
Tertiary Sector	55
Natural Assimilation & Purification	56
Community Services	56
Property Valuation	57
Income Tax & GST	57
Labour Market	59
Human Health	60
Pest Management	61
Tourism, Leisure, Recreation, Sport	62
Economic Drivers	63
Participation in Economic Life	64
Family & Community Wellbeing	65
Maintain Soil Health	65
Maintain Biodiversity	66
Scientific Research	67
Maintain Integrity of Ecological Process	68
Secondary Industry	71
Population Dynamics	72
Climate & Atmosphere	73
Public Life - Governance	73
Non-Local Influences	73
Water Quality & Supply	75
Economic Inputs	75
Governance of Social Institutions	82
Policy, plans, rules, legislation	83
Primary Industries	85

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Group Factor Influence on …

We also looked to see which groups of factors have the strongest influence on other groups of factors. We were surprised to learn that according to our scores economic factors were least influential.

Looking at Different Types of Factors

We were able to use the influence matrix to identify critical, active, buffer and passive factors.

Critical Factors – have a strong influence on all other factors and are strongly influenced by them. One example we found was water quality & supply. The achievement of long-term goals identified by the CRG members was dependent on critical factors: ecosystem services, human demographics (population change), policy / regulatory interventions / governance and the extractive and conversion activities of primary industries. The active factors driving change and development in this catchment are perceived by the CRG to relate to policy / regulatory interventions and commodity markets.

What Next?

Now we understand better which factors help us make progress towards our vision of a sustainable future.

Next we will build a simulation model to help us test different ideas about how we should use our resources and develop our businesses and community.

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