

Key adaptation principles

- Work in partnership
- Cope with uncertainty
- System vulnerability and resilience
- Manage climate and non-climatic risk
- Sustainable development context
- Explore co-benefits
- Iterative approach
- Action focus
- Low/no regrets approach
- Avoid maladaptation
- Multiple scales of governance

Earthwise Consulting Limited

Climate resilience

Issues associated with mainstreaming

- Working with nature
- Maladaptation
- Vulnerability and resilience
- Future pathways – the sustainability context
- Managing change – the psychology of change
- The importance of innovators
- Participatory approaches
- Integrating 'top down' and 'bottom up'
- A few other things to consider

Earthwise Consulting Limited

The industrial revolution

A new relationship with nature

"The industrial revolution (1785 – 1830) was the first manufacturing technology in human history that was, in a sense, independent of nature, of geography and season and weather, of sun or wind or water or human or animal power."

Fitzpatrick Sale

J Constable, Dedham Vale
Oil on Canvas, painted in 1828

Earthwise Consulting Limited

Our relationship with nature

"Look deep into nature, and then you will understand everything better." Albert Einstein

J Constable, Old Sarum
Watercolour, painted in 1834

Source: G Kenny, Old Sarum, 2007

Earthwise Consulting Limited

"The future condition of the globe's interlocking natural and social systems depends more on human behaviour than on the further investigation of natural processes, however desirable that may be." White, 1991

Earthwise Consulting Limited

Maladaptation



"The whole course of civilization ... may be seen as a process of trading up on the scale of vulnerability." Brian Fagan

Earthwise Consulting Limited



Maladaptation cont.



Wadi-as-Sirhan, Saudia Arabia

Source: Still Pictures/NASA/UNEP

Earthwise Consulting Limited



Maladaptation cont.

Deforestation and palm oil plantations, Solomon Islands



Wadi-as-Sirhan, Saudia Arabia

Source: Still Pictures/NASA/UNEP

Earthwise Consulting Limited



Maladaptation cont.

Tourism and sugar production, Fiji



Earthwise Consulting Limited



Vulnerability and resilience



Vulnerability

- Exposure
- Sensitivity
- Adaptive capacity

Resilience

- Buffering capacity
- Capacity for self-organisation
- Adaptive capacity

Earthwise Consulting Limited



Resilience



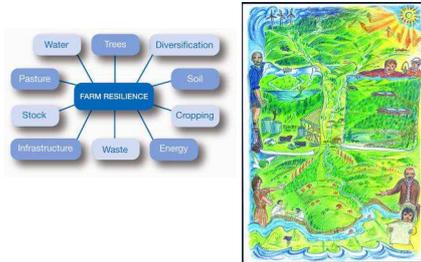
"Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future." www.resilience.org

Earthwise Consulting Limited



Resilience

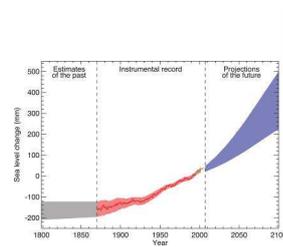
NZ farmer perspectives



Earthwise Consulting Limited



Future pathways



Sea-level rise of 0.9 – 1.6m is increasingly possible

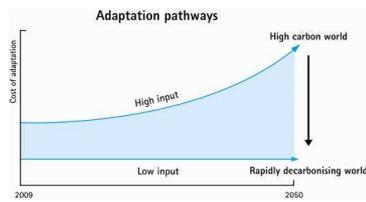
- A 'Business-As-Usual' pathway will have serious consequences
- Extra-ordinary responses are required

Earthwise Consulting Limited



Adaptation pathways

links to mitigation



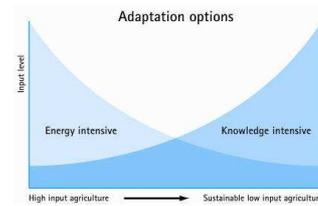
Source: Kenny, 2011, Climatic Change, 106: 441-462

Earthwise Consulting Limited



Adaptation pathways

Shifting from fossil fuel dependence to ecological complexity and knowledge systems



Source: Kenny, 2011, Climatic Change, 106: 441-462

Earthwise Consulting Limited



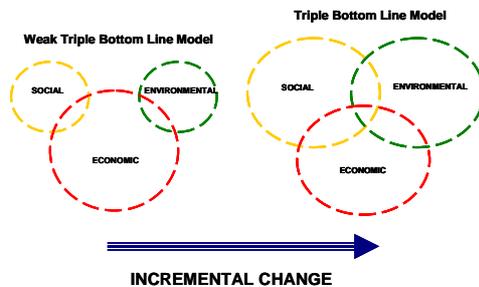
Managing change



Earthwise Consulting Limited



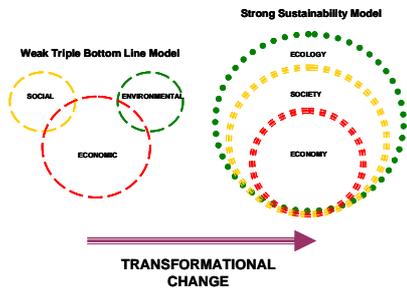
Incremental change



Earthwise Consulting Limited



Transformational change



Earthwise Consulting Limited



Business as Usual approach



- Top down
- Wait & see (reactive)
- Weak 'triple bottom line' sustainability
- Impacts assessment
- Efficiency improvement
- Accommodation

Painting by Carrie Marill, courtesy of Jen Bekman gallery

Earthwise Consulting Limited



Substitution approach



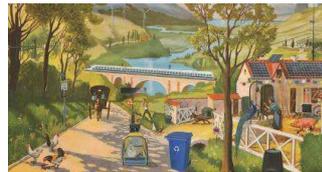
- Consultation
- Compliance/active
- Triple bottom line sustainability
- Vulnerability assessment
- Substitution
- Relocation

Painting by Carrie Marill, courtesy of Jen Bekman gallery

Earthwise Consulting Limited



Redesign approach



- Participatory
- Proactive
- Strong sustainability
- Resilience building
- Redesign
- Recreate

Painting by Carrie Marill, courtesy of Jen Bekman gallery

Earthwise Consulting Limited



Buzz groups (5 mins)

- Briefly articulate your future vision for Mauritius to each other

Earthwise Consulting Limited



Barriers to change

Top down	Consultation	Participatory
Wait & see (reactive)	Compliant/active	Proactive
Weak triple bottom line sustainability	Triple bottom line sustainability	Strong sustainability
Impacts assessment	Vulnerability assessment	Resilience building
Efficiency improvement	Substitution	Redesign
Accommodation	Relocation	Recreate

Earthwise Consulting Limited



Some of the barriers

- Information overload
- The psychology of denial
- It's all bad news
- Let the politicians and scientists sort it out
- Resistance to change – fear of the unknown

A 'Business-As-Usual' approach will not provide lasting solutions

Earthwise Consulting Limited



What does it take to change?



"On an island fighting for its future, the most visible reminder of the perils facing such an isolated and small nation is its rubbish."

Toxic Tuvalu: Nowhere to go for mountain of rubbish 10/8/2010
<http://www.stuff.co.nz/world/south-pacific/4008961/Toxic-Tuvalu>

Earthwise Consulting Limited



Do we need crisis to change?

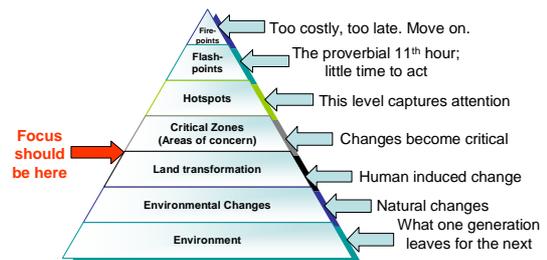


Real change isn't motivated by either crisis or fear, but through leadership, vision and community.

Earthwise Consulting Limited



Do we need crisis to change?

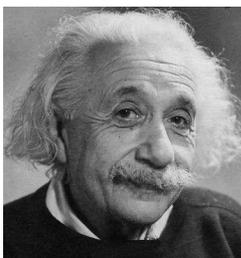


Source: Glantz, 2005

Earthwise Consulting Limited



A 'business as usual' response won't work



"We cannot solve our problems with the same thinking we used when we created them. We shall require a substantially new manner of thinking if mankind is to survive."

Albert Einstein

Earthwise Consulting Limited



The psychology of change

Build on existing knowledge, capabilities and resources

Seven psychological principles that can help foster positive actions in addressing climate change:

- Promote success stories
- Provide positive future visions
- Focus on opportunity not risk
- Support social impulses
- Identity with place
- Fairness is vital
- Ownership of change/being heard

Earthwise Consulting Limited



The importance of innovators



- The term **innovation** derives from the Latin word *innovatus*, which is the noun form of *innovare* "to renew or change," stemming from *in-*"into" + *novus* – "new"
- Innovation for climate resilience is relatively unexplored territory

Earthwise Consulting Limited



The importance of innovators

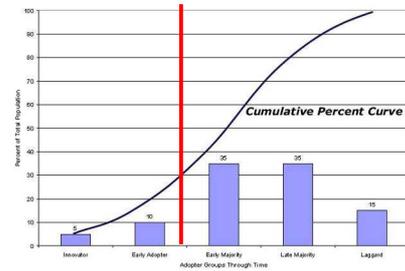


Figure 1. Percent Distribution of Diffusion Theory Adopter Groups

Earthwise Consulting Limited



Geoff and Gill Brann



- **SETTLING OF ROYDON DOWNS 'UNETHICAL ACTION,' AND 'GROSS MISTAKE'** Bay of Plenty Times, December 3, 1963

- Over a 40-year period Geoff and Gill Brann have planted 150 ha (60%) of their farm in trees



- Their pioneering work is now widely recognised, with many visitors to the farm

Earthwise Consulting Limited



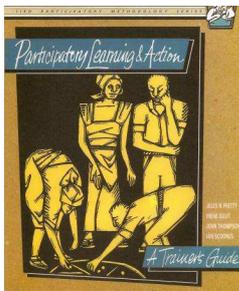
Participatory approaches



Earthwise Consulting Limited



Participatory approaches



- Adults are voluntary learners
- Adults usually come with an intention to learn
- Adults have experience and can help each other to learn
- Adults learn best in an atmosphere of active involvement and participation
- Adults are best taught with a real-world approach

Earthwise Consulting Limited



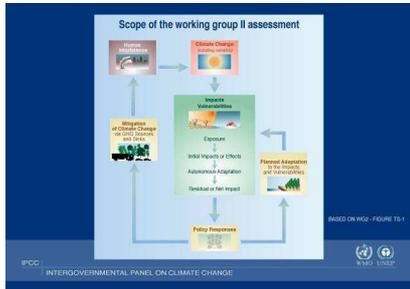
Integrating top down and bottom up approaches



Earthwise Consulting Limited



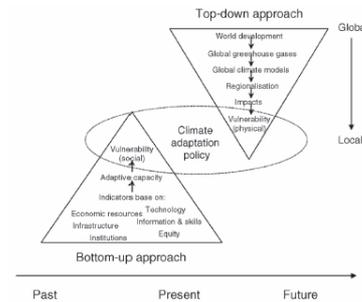
The IPCC Approach



Earthwise Consulting Limited



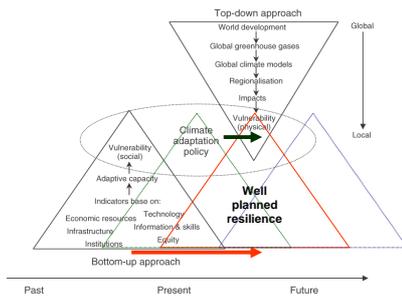
“Top Down” vs. “Bottom Up”



Earthwise Consulting Limited



A resilience approach



Earthwise Consulting Limited



Climate as a resource

What we can do locally

- **Some basic inputs**
 - Carbon
 - Water
 - Solar energy
- **It's how we manage these that matters**
 - *Fire and water are good servants but bad masters* (Aesop, 620–565 BC)
 - *Fire, water and climate are good servants but bad masters* (Glantz, 2005)

Earthwise Consulting Limited



Developing response capacity

A climate for change

- **Leadership**
 - Make leadership present throughout the community
- **Vision**
 - Design the community's preferred future
- **Community**
 - Organise networks and movements, identify and amplify the hubs of know-how, influence and coordination

From 'The shift is on to Craft Communities – in Organisations and Places' by Robert J. Leaver, www.newcommons.com

Earthwise Consulting Limited



The luxury of choice



These people have the option of being proactive



These people have no option but to be reactive

Earthwise Consulting Limited



Every situation is different...

we need to work with that diversity



"Imagination is more important than knowledge. Knowledge is limited."
Albert Einstein

Earthwise Consulting Limited



Some on-going challenges

- Crisis provides a learning opportunity
- Everyone has a point of view
- Innovation requires a change of thinking
- Action is increasingly a necessity

Earthwise Consulting Limited



Key points

- Future visioning is vital
- Resilience building – action focus
- The need to be more aware of the psychology of change
- Identify and engage with innovators whose actions are consistent with future vision
- Participatory approaches need to be fully understood and applied for an effective integrated approach

Earthwise Consulting Limited



'An oak tree lives in a four-hundred-year time-frame. Human time-frames are always too short. So we get it wrong, and we don't really understand the natural processes half the time.'

'So what's your rule for the Forest?'

'Look for a balance. But know that nature will find a better one.'

From 'The Forest', by Edward Rutherford

Earthwise Consulting Limited



A climate resilient Mauritius?



- Coastal environment (including fisheries)
- Water resources
- Land management (agriculture, land use change, forestry)
- Health and well-being
- Biodiversity

Earthwise Consulting Limited

