Responding to climate change in early childhood care and education: An exploration of curriculum potential in two countries, Vanuatu & Aotearoa (New Zealand)

Carol Smith & Jenny Ritchie
He Mihi - Welcome

- He whakawhanaungatanga – making connections
- Where are you from?
- What is your interest in being here today?
- What is your name?
Welcome to the Anthropocene

• The Inter-Parliamentary Climate Commission (IPCC) has confirmed that the world is now facing unprecedented climate change, and that this change is the result of human activities, in particular the release of carbon into the atmosphere from the burning of fossil fuels: we are entering the age of the ‘Anthropocene’, the era of human induced climate change
Sea level rising

In January 2011 Auckland’s Northwestern Motorway flooded in a storm surge. This type of flooding is set to become more common this century. (Parliamentary Commissioner for the Environment. Te Kaitiaki Taiao a Te Whare Pāremata, 2014, p. 45)

Repeated flooding in Northland, severe flooding across the nation... Wellington, Dunedin, Wanganui, Gisborne, Taranaki....

Floodwaters at Otria marae and surrounds on Friday, 11 July 2014.
Source: http://www.radionz.co.nz/news/national/249494/northland-bracing-for-more-flooding
Coastal erosion – Haumoana

Credit Alan Blacklock NIWA. Source: https://www.niwa.co.nz/media-gallery/detail/110407/37531
Extreme droughts: 2013 the worst in recorded history

Source: http://www.3news.co.nz/nznews/study-2013-drought-worst-in-70-years-2013072605#axzz3piDKenoj
Climate change threatens ecosystems & biodiversity

Tuatara - a highly specialised native species vulnerable to climate change
So many endangered species...

Eastern rockhopper penguin is one of 25 different species listed as ‘critically endangered’

Orange-fronted parakeet is one of 17 different species listed as ‘endangered’

Pied shag is one of 34 different species listed as ‘vulnerable’

Department of Conservation underfunded

Source: http://thestandard.org.nz/a-takahe-is-not-a-pukeko/
Maui’s dolphins – less than 50 remaining

Widespread affects of climate change...

- Sea level rise affecting small Pacific Island nations
  - Climate change refugees from Kiribati, Marshall Islands, Tuvalu, and Maldives
- Ocean acidification
  - Coral reefs bleaching and dying
  - Mussel, crab, and oyster shells de-calcifying
- Higher temperatures causing climate extremes such as droughts, food-shortages, flooding, heat-waves, super-storms
- Vectors of illnesses shifting, such as mosquito borne diseases
  - Dengue fever, zika, and chikungunya are all diseases caused from being bitten by infected *Aedes* mosquitoes
- Children being impacted (Lawler, 2011)
What is happening in your land?

- What signs of climate change have been noticed already in your part of the world?
- Who or what is being impacted, and how?
Current intended nationally determined contributions (INDCs)

Why is ECEfS important?

‘Rapid, sweeping, and long-lasting change is altering our planet’s environment in an unprecedented manner, while societies are undergoing profound shifts in their demographic makeup and social and economic fabrics.

Political agreements, financial incentives or technological solutions alone do not suffice to grapple with the challenges of sustainable development.

It will require a wholesale change in the way we think and the way we act – a rethink of how we relate to one another and how we interact with the ecosystems that support our lives.

To create a world that is more just, peaceful and sustainable, all individuals and societies must be equipped and empowered by knowledge, skills and values as well as be instilled with a heightened awareness to drive such change.

This is where education has a critical role to play.’ (UNESCO, 2014, p. 8)
UNESCO definition of ‘Education for Sustainable Development’

• ESD allows every human being to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development and take informed decisions and responsible actions for environmental integrity, economic viability, and a just society for present and future generations

• ESD relates to the environmental, social and economic pillars of sustainable development in an integrated, balanced and holistic manner. It responds to local specificities and respects cultural diversity

• ESD encompasses formal, non-formal and informal education and lifelong learning from early childhood to old age (Leicht, 2014)
UNESCO: Education for Sustainable Development

UNESCO approach to education for sustainability requires the simultaneous engagement of a range of lenses:

- An **integrative lens**: taking on a holistic perspective that allows for integrating multiple aspects of sustainability (e.g. ecological, environmental, economic and sociocultural; local, regional and global; past, present and future; human and non-human);

- A **critical lens**: questioning predominant and/or taken-for-granted patterns and routines that are or may turn out to be unsustainable (e.g. the idea of continuous economic growth, dependency on consumerism and associated lifestyles);

- A **transformative lens**: moving beyond awareness to incorporate real change and transformation through empowerment and capacity-building that may lead to or allow for more sustainable lifestyles, values, communities and businesses;

- A **contextual lens**: recognizing that there is no one way of living, valuing and doing business that is most sustainable everywhere and always, and that although we can learn from each other, places and people are different and times will change. Therefore, sustainability needs to be recalibrated as realities and times change. (UNESCO, 2012, p. 10)
Learning content: Integrating critical issues, such as climate change, biodiversity, disaster risk reduction (DRR), and sustainable consumption and production (SCP), into the curriculum.

Pedagogy and learning environments: Designing teaching and learning in an interactive, learner-centred way that enables exploratory, action-oriented and transformative learning. Rethinking learning environments – physical as well as virtual and online – to inspire learners to act for sustainability.

Learning outcomes: Stimulating learning and promoting core competencies, such as critical and systemic thinking, collaborative decision-making, and taking responsibility for present and future generations.

Societal transformation: Empowering learners of any age, in any education setting, to transform themselves and the society they live in.
- Enabling a transition to greener economies and societies.
  - Equipping learners with skills for ‘green jobs’.
  - Motivating people to adopt sustainable lifestyles.
- Empowering people to be ‘global citizens’ who engage and assume active roles, both locally and globally, to face and to resolve global challenges and ultimately to become proactive contributors to creating a more just, peaceful, tolerant, inclusive, secure and sustainable world.
Sustainability and science as reconnecting children and nature

• Concern has been expressed regarding the increasing distance between children and natural, wild spaces, such as forest, bush, wetland, grasslands, streams, rivers, and seashores (Louv, 2010; Davis, 2010; Elliott 2010).

• For Val Plumwood (2002), the separation between people and the natural world caused by the Western project of colonisation & technologisation has also served as a justification for the exploitation of the ‘Other’, resulting in ‘othering’ of both Indigenous peoples and the environment.

• Sustainability and science can both serve as bridges of reconnection.
Indigenous knowledges as sustainability

• The Indigenous peoples of each locality have over many years of living closely with the land and as cohabitants of that place, garnered specific, intimate understandings of their local ecologies and the ways in which humans can respectfully and sustainably coexist within these places (Rose 2002, 2005 as cited in Ritchie, 2014)

• Indigenous people have traditionally been responsive, resilient, and intra-active within their environments, and are well-positioned to continue their role as custodians (in Māori, kaitiaki) of their locales (Kanawa 2010)

• Importance therefore of sustaining these traditions, hence the need for both cultural and ecological sustainability as a response to climate change
Rub away the earthen clump to leave but one lone grain of dirt;
whilst it is but one, yet it is inextricably joined to the land,
from the land to the sky, the sky to the land, to the
mountain, to the sea, to the people;
tis I who is that one lone grain.

(Anaru Kira, as cited in Waitangi Tribunal, 2004, p. 12-13)
Māori worldview as holistic

‘Relationships between people and the natural environment, between tangible and intangible dimensions, between organic and inorganic material, and between past and future constitute the foundations upon which indigenous populations understand the world. An energy flow that spirals outwards connects the multiple threads so that even very small objects become part of a wider context that gives them shape and meaning’ (Durie, 2010, p. 239).
Kaitiakitanga – the responsibility to care for our environment

• Kaitiakitanga is a traditional cultural system that upholds ecological conservation” (Ritchie, Duhn, Rau & Craw, 2010, p. 38)

• The concept of kaitiakitanga underpins “the mutual nurturing and protection of people and their natural world... it was and is fundamentally a matter of spiritual and physical survival” (Waitangi Tribunal, 2004, p. 8)

• Kaitiakitanga is more than a passive acknowledgement of guardianship, but an active responsibility to care for the environment (Waitangi Tribunal, 2004)

• Kaitiakitanga is the exercise of guardianship, stewardship and protection, a way of managing the environment based on the Māori worldview where people are the descendants of nature and therefore responsible to tipuna (ancestors) and uri (descendants) to care for the environment (Waitangi Tribunal, 2004)
Whanaungatanga - Relationships

- The state or circumstances of being a relative; that is, kinship and the rights, responsibilities and expected modes of behaviour that go with this.

- Whakapapa [layering of interconnected relationships, sometimes translated as genealogy] is an important concept of whanaungatanga. Whakapapa identifies and connects the numerous relationships.

  (Benton, Frame & Meredith, 2013)
I te timatanga

- One of the most important ways to understand relationships in te ao Māori, the Māori world view, is to understand the Māori cosmology, the story of our origins.
What are your stories?

• Can you share some stories about how to care for the land that come from your own ancestors?

• E.g., what did your grandparents or other family members tell you about the earth, sea, sky, plants, animals, birds, insects and other creatures?
Te Whāriki and cultural sustainability

• This document recognises the distinctive role of an identifiable Māori curriculum that protects Māori language and tikanga (culture), Māori pedagogy, and the transmitting of Māori knowledge, skills, and attitudes through using Māori language (p. 12)

• New Zealand is the home of Māori language and culture: curriculum in early childhood settings should promote te reo (Māori language] and ngā tikanga Māori, making them visible and affirming their value for children from all cultural backgrounds. Adults working with children should demonstrate an understanding of the different iwi and the meaning of whānau (extended families) and whānaungatanga (relatedness) (p. 42)
Te Whāriki and environmental sustainability

• Liaison with local tangata whenua (people of the land – Indigenous people) and a respect for Papatūānuku [Earth Mother] should be promoted (p. 54)

• Children should gain:
  • knowledge about the features of the area of physical and/or spiritual significance to the local community, such as the local river or mountain’ (p. 56)
  • knowledge about the wider community and environment and be able to take some responsibility for caring for their own environment (p. 56)
  • skills in caring for the environment, such as cleaning, fixing, gardening, and helping others with self-care skills (p. 58)

• Experiences also help to build relationships, as children develop the ‘give and take’ of communication and learning and have opportunities to work effectively with others in ways which have an impact on their environment (p. 72)
New Zealand Schooling Curriculum

Values
Excellence; Innovation, inquiry, and curiosity; Diversity; Equity; Community and participation; Ecological sustainability; Integrity; Respect.

Students will be encouraged to value:
- **excellence**, by aiming high and by persevering in the face of difficulties;
- **innovation, inquiry, and curiosity**, by thinking critically, creatively, and reflectively;
- **diversity**, as found in our different cultures, languages, and heritages;
- **equity**, through fairness and social justice;
- **community and participation** for the common good;
- **ecological sustainability**, which includes care for the environment;
- **integrity**, which involves being honest, responsible, and accountable and acting ethically;

and to **respect** themselves, others, and human rights.

Future focus
The curriculum encourages students to look to the future by exploring such significant future-focused issues as sustainability, citizenship, enterprise, and globalisation.
Cultural sustainability
Some examples of learning standards & activities

• Demonstrates respect for community custom

• *Learning activities:*
  • To see namele leaves as a sign of taboo
  • To learn about customary ways such as calling or whistling to indicate presence; bending at waist when passing in front of older people, serving older people first (p. 25)

• Children participate in a variety of custom art forms and explain the stories behind them

• *Learning activities:*
  • Displays an interest in custom weaving, carving, sand drawing and string games
  • Talks about the meaning of carvings; carves using local materials; makes and tells finger string stories, weaves simple objects (p. 54-55)
Cultural ceremonies

- Displays some understanding of the importance of ceremonies in their own community
- To participate in exchange ceremonies by exchanging mats, money, food, produce and pigs to honor weddings, deaths, circumcision and transfer of chiefly titles (p. 56)

‘Getting ready to perform a custom dance on Kindy Dei!’ (p. 55)
Custom story, song and dance

- Children participate with confidence in custom story-telling, singing and dancing

- **Learning activities:**
  
  - To hear older people in the village singing custom songs, to practice singing custom songs
  
  - To hear about how the story, song and dance are connected together
  
  - To practice the rhythm and beat of traditional songs and dances using a variety of instruments (p. 49-50)

‘And what do people do when they hear the sound of the conch shell? Who uses the shell? Are there different messages?’ (p. 49)
Environmental sustainability

• Tells traditional stories which support the environment
• Looks after plant and animals in the environment
• Talks about consequences of man’s actions on the environment

Learning activities:

• To find examples of man’s impact on the environment, e.g., trees that have been burnt down, rubbish on beaches and on river banks, the burning of plastic rubbish
• To talk about what the children can see and what can be done about it (p. 59)
Where to from here?

‘To create a world that is more just, peaceful and sustainable, all individuals and societies must be equipped and empowered by knowledge, skills and values as well as be instilled with a heightened awareness to drive such change. This is where education has a critical role to play.’ (UNESCO, 2014, p. 8)

- What ideas might you have of ways of incorporating into your teaching”
  - Education for sustainability ideas
  - Indigenous wisdom
  - Working at all levels and within all disciplines of education...
E Tu Kahikatea

E tu kahikatea
Hei whakapae ururoa
Awhi mai awhi atu
Tātou tātou e

Stand like the kahikatea (tree)
To brave the storms
Embrace and receive
We are one together

Source: https://www.teawamutu.nz/info/attractions/yarndleys-bush/
References:


