Nairobi work programme on impacts, vulnerability and adaptation to climate change
New Zealand submission May 2007

This submission responds to the invitation from SBSTA to provide information on adaptation approaches, strategies, practices and technologies for adaptation at the regional, national and local levels in different sectors, as well as on experiences, needs and concerns.

New Zealand provided a submission to SBSTA in February 2007 responding to the invitation to provide information on relevant programmes activities and views on the issues relating to climate related risks and extreme events. Some of the material in the February submission (FCCC/SBSTA/2007/MISC.4 refers) provides more detail on some of the information in the table below.

In the table below examples of adaptation approaches at the regional, national and local level are provided in different sectors.

Type of adaptation action[1]	**Title of adaptation action, including projects**	**Status of adaptation action** - ongoing - under implementation - under development - under consideration	**Needs in order to successfully implement the adaptation action**	**Concerns/ Barriers**	**Experiences/ Lesson learned**	**References** i.e. publications, websites etc.
Scope of adaptation action ***Regional level***						
Approaches/ strategies	Pacific outreach programme on IPCC 4th assessment report	Under implementation. This activity will be ongoing during 2007 with around six individual			Important to respond to needs identified in the region; tailoring the outreach activities to fit with events/other	

[1] Please be aware of the degree of adaptation within activities:
- Some activities are undertaken specifically to adapt to climate change, e.g. increased water storage capacity, development of new crop varieties.
- Some activities include a component of climate change adaptation, e.g. infrastructure replacement incorporating higher flood standards
- Some activities are not carried out for adaptation but have other objectives such as preserving biodiversity; however they can offer adaptation co-benefits, e.g. restored wetlands protect against storm surges.

		workshops/meetings in different locations in the South Pacific.			meetings already scheduled in the region is a practical way to implement the strategy.	
Practices						
Technologies						
National level						
Approaches/ strategies	New Zealand Climate Change Adaptation Programme: Focus on partnerships with key sectors (local government, engineers, insurance industry, and agriculture sector). One component is a national information programme using case-studies to illustrate practical adaptation actions. In addition climate change risk management is being factored into all existing work programmes where climate	ongoing			**Experiences/Lesson learned** Important to have adaptation needs identified by the sector rather than top-down. Important to identify the co-benefits of existing work programmes e.g. the Sustainable Water Programme of Action	www.climatechange.govt.nz

	change and variability will have an effect e.g. Sustainable Water Programme of Action, Review of Flood Risk Management, Review of the New Zealand Coastal Policy Statement.					
Practices						
Technologies						
Local (community) level						
Approaches/ strategies	*Community based dune management* for the mitigation of coastal hazards and climate change effects. Dune replanting is the technology employed.	ongoing			**Experiences/Lesson learned** Community based dune restoration partnership programmes may be the most effective and affordable method of managing climate change impacts on the coast in at least the short to medium term. Community involvement, empowerment, understanding and respect are essential.	www.ebop.govt.nz/Coast/Care/Coast-Care-Bay-of-Plenty.asp www.climatechange.govt.nz/resources/adaptation/index.html
	Adapting to climate change in eastern New Zealand – The Hawkes Bay Climate Change Adaptation Group, funded through the Sustainable Farming Fund.				**Experiences/Lesson learned** This community level project is aimed at identifying and implementing practical measures for the long-term sustainability (ecological, social and economic) of land and water resources in eastern New Zealand, in the face of uncertain climate change projections. The project is being implemented through development of a "best practice" adaptation resource kit for	http://www.mfe.govt.nz/publications/climate/view-from-the-ground-jul03/view-from-the-ground-jul03.pdf

					the management of climate change impacts in eastern New Zealand, and education and awareness raising of farmers and rural communities on climate change and adaptation measures that can be adopted over time. Part of this project resulted in publication by Earthwise Consulting of *The View from the Ground* – a farmer perspective on climate change and adaptation. The approach taken, used six workshops for farmers in different parts of New Zealand to develop a grassroots perspective on adapting to climate change, and to draw relevant information together in order to share it more widely. The "view from the ground" is a very positive and proactive view – farmers collectively have a lot of capacity to adapt to climate change. However, this adaptive capacity is qualified by a need for a more cooperative environment in which a strong sense of community is needed along with greater communication between farming and non-farming communities	
	Changing attitudes and practice for farming dry land in Marlborough – Starborough - Flaxbourne Soil Conservation Group, funded through the Sustainable				**Experiences/Lesson learned** This project aims to change farmer attitudes and land management practices for farming fragile dry land in Southern Marlborough. It is led by a farmer management group based in the Starborough - Flaxbourne area of Marlborough	http://www.maf.govt.nz/sff/about-projects/search/05-132/index.htm

	Farming Fund					
	Sustainable production in Marlborough's variable climate - Marlborough Sustainable Primary Production Group, funded through the Sustainable Farming Fund				**Experiences/Lesson learned** The implementation and demonstration of systems of sustainable pastoral and arable farming within Marlborough's dryland climate by using predictive pasture modelling based on soil moisture analysis as a management tool to identify sustainable farming systems	http://www.maf.govt.nz/sff/about-projects/search/00-337/index.htm
Practices						
Technologies						

Sectoral level[2]						
Agriculture						
Approaches/ Strategies	The Sustainable Farming Fund administered by the Ministry of Agriculture and Forestry supports environmentally sustainable community projects. A large proportion of the funded projects have benefits for adaptation of current farming systems to increase economic and environmental resilience e.g. drought tolerant species, dry land management, irrigation efficiency, water feasibility studies and new forestry species. Examples of these community projects are provided under the ***Local***				**Experiences/Lesson learned** Community based programmes are an excellent way of building capacity and understanding at the on-farm level.	http://www.maf.govt.nz/sff/index.htm

[2] The sectors below are given as examples. Please provide information on any other sectors which you consider important and have examples to share.

	(community) level heading above					
Practices						
Technologies						
Water resources						
Approaches/ Strategies	Building climate change into Sustainable Water Programme of Action	Under development			**Experiences/Lesson learned** Important to identify the co-benefits of existing work programmes. This programme addresses water quality, water allocation and availability, including consideration of the impacts of climate variability and change. The work on more efficient water allocation will assist land and water users across a range of sectors (including agriculture, forestry, electricity generators and communities) to adapt to the impacts of climate change and increase resilience to climate variability. Linkages between other government programmes are being made to ensure climate change actions are consistent	http://www.mfe.govt.nz/issues/water/prog-action/index.html
Practices						
Technologies						
Health						
Approaches/ Strategies						
Practices						
Technologies						
Coastal zones (settlements)						
Approaches/ Strategies	Provision of guidance material through the Coastal Hazards and Climate	To be updated using information from IPCC AR4			**Experiences/Lesson learned** The type of approach including a decision-making framework to assess risks is very successful with the target audiences	www.climatechange.govt.nz www.climatechange.govt.nz/resources/adaptation/index.html

	Change Guidance manual					
Practices	Set-backs from waterways and raised floor levels in flood prone areas have been incorporated into the Christchurch City Plan and Urban Development Strategy.				**Experiences/Lesson learned** These changes to the Christchurch City Plan and Urban Development Strategy seek to reduce the risks to the community from climate change (sea level rise and flooding). While these practices are geographically specific in their scope, it is expected that many of the issues, challenges, and methodologies relating to coastal hazard planning within a climate change framework presented in the report that was commissioned by the Christchurch City Council and on which the changes to the City Plan were based, will also be applicable in other regions and catchments.	www.ecan.govt.nz/climate www.climatechange.govt.nz/resources/adaptation/index.html
Technologies	See community based dune management example under the ***Local (community) level*** heading above					
Infrastructure						
Approaches/ Strategies	Development of CLINZI (Climate's Long-term Impact on New Zealand's Infrastructure) an integrated assessment				**Experiences/Lesson learned** Wellington City Council (WCC) has undertaken a risk analysis using CLINZI. Seven risks were identified as requiring further attention including: change in water demand, possible reduced water quality,	www.wellington.govt.nz/services/environment/climate.html www.climatechange.govt.nz/resources/adaptation/index.html

	process for assessing the long-term impact of climate on infrastructure investments. Its purpose is to assist local councils with their functions using a decision-tool. CLINZI was developed by the New Zealand Centre for Ecological Economics (NZCEE, a joint venture between Landcare Research NZ Ltd and Massey University) in conjunction with NIWA and the International Global Change Institute (IGCI). It involves generation of local climate scenarios, regression modelling and qualitative analysis, all within a risk management framework.				impacts on storm water discharge rates to the sea from sea level rise, changes in electricity demands, impacts on transmission assets, increased maintenance of roads, and changes in traffic demand. The modelling analysis concluded that it would be prudent for WCC to build a state of readiness for climate change. The analysis of policies and strategies concluded that while WCC acknowledged potential climate change risk in a range of official documents, further work was recommended. The study recommended that WCC place a greater focus on communicating the climate change aspects of its policies to the public.	

Practices	Building projected climate change into design criteria for stormwater infrastructure	On-going			Being pro-active with stormwater infrastructure upgrades will reduce the impact of high rainfall events that are projected to increase in frequency and intensity.	www.climatechange.govt.nz www.kapiticoast.govt.nz/Sustainability/ClimateChange.html
	Building projected climate change into design criteria for bridges and culverts that are part of New Zealand's state highway system	On-going			Transit New Zealand (the Crown Entity responsible for state highways in New Zealand) has demonstrated its ability to incorporate a changing physical environment into its planning processes.	www.transit.govt.nz/planning/climate.jsp www.climatechange.govt.nz
Technologies						