

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Cook Islands

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (<http://www.fao.org/3/a-au190e.pdf>). These reports were submitted to FAO as official government documents.

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Report preparation and contact persons

Contact persons

The present report was prepared by the following person(s)

Name (FAMILY NAME, first name)	Institution/address	Email	Tables
Tokari Nooroa	Ministry of Agriculture, P.O. Box 96, Rarotonga, COOK ISLANDS.	noot@agriculture.gov.ck	all
APERERA Edwin	Ministry of Agriculture P.O. Box 96 Rarotonga COOK ISLANDS	eapera@agriculture.gov.ck	6
TANGIANAU Otheniel	Prime Minister Office Private Mail Bag Avarua Rarotonga COOK ISLANDS.	otheniel@pmoffice.gov.ck	1-2
SAMUEL. N. Reboama	Cook Islands Red Cross P.O. Box 888 Avarua Rarotonga COOK ISLANDS	drr@redcross.org.ck	2

Introductory Text

Place an introductory text on the content of this report

<p>INTRODUCTION</p> <p>TE KAVEINGA NUI 2011-2015 - OUR VISION, OUTCOMES AND GOALS</p> <p>National Sustainable Development Plan</p> <p><i>National Vision</i></p> <p><i>“To enjoy the highest quality of life consistent with the aspirations of our people in harmony with our culture and environment”</i></p> <p><i>“Te oraanga tu rangatira kia tau ki te anoano o te iti Tangata, e kia tau ki ta tatou peu Maori e te aotini taporoporo ia o te basileia:</i></p>		
<p>What does this means?</p> <p>(The National Goals)</p>		<p>Where do we want to be by 2020?</p> <p>(The National Outcomes)</p>
1. A vibrant Cook Islands economy	#	1. Sustainable Economic growth in harmony with our social values, culture & environment
2. Infrastructure for economic growth, sustainable livelihoods & resilience		
3. Energy Security		

4. Opportunity for all people who reside in the Cook Islands	#	2. Well educated, a healthy productive people & resilient communities
5. Resilient & Sustainable Communities		3. Enhanced Cultural & Environmental Values
6. Environment for living	#	3. Enhanced Cultural and Environmental Values
7. Good governance	#	4. Responsible & Mature Foreign relations with New Zealand & other regional & international communities in the interest of the people of the Cook Islands.
8. Safe, Secure, Just & Stable Society		5. A Secure Society built on Law & Order & Good Governance.

The NSDP 2011-2015 is the second planning phase in our journey of Te Kaveinga Nui towards the achievement of desired 2020 development outcomes and our national Vision – *“to enjoy the highest quality of life consistent with the aspiration of our people, and in harmony with our culture and environment”*.

We must focus on positive action through our shared vision that is realistic and relevant to us as individuals, families and as a society.

The NSDP 2011-2015 integrates the thoughts, ideas, hopes and dreams of a broad cross-section of our society, both in Rarotonga and the outer islands (Pa Enuu). It is culmination of many community based consultations, brain storming and focus group sessions, perusing past reports, and numerous public, private and community sector meetings to review our progress on NSDP 2007-2010 and formulate this NDSP.

In outlining how we will achieve our National Vision and 2020 development outcomes, NDSP 2011-2015:

- Identifies our medium term goals and objectives;
- Presents national and sector strategies for achieving these goals and objectives;
- Propose outcome indicators to measure performance over the medium term;
- Identifies actions for the medium term; and
- Presents a framework for its implementation, monitoring and evaluation.

The Cook Islands is a small country of 240km² spread over fifteen widely scattered islands, with an oceanic EEZ of about two million square kilometres (200-nautical miles). They are located between 9° and 23°S latitude and 156° and 167°W longitude. The islands are divided into groups: a Northern and Southern Groups. Northern Group consists of mainly atolls with a very limited terrestrial flora and fauna, and abundant and diverse marine fauna. They are Penrhyn, Manihiki, Rakahanga Suvarrow and Pukapuka, and a sand cay island of Nassau.

The Southern Group consists of four makatea¹ island Mangaia, Atiu, Mauke and Mitiaro, two atolls Palmeston and Manuae, one almost island Aitutaki, one sand cay island Takutea and one high islands Rarotonga. Twelve of the islands are permanently settled, while the other three islands are wildlife reserve (Suvarrow and Takutea and Manuae).

Forestry in the Cook Islands is for conservation and local cottage-type industry use, such as hand crafts, fire-woods, and land management in areas prone to erosion, such as rivers, streams and foreshores. There is no commercial harvest. Apart from 1,110 hectares of planted forests, the rest is natural forest, comprising a number of tropical species. Protection of the water lends by the country’s forest cover is seen as critical to ensuring quality water supply for domestic use.

This report presents the current status of forest in the Cook Islands, both natural and planted. It provides data where this is known. Because, there is no commercial forestry in the country, a lot of the required data are therefore not known, or does not apply.

Desk Study?

Check "yes" if this survey is a Desk Study, "no" otherwise	
Desk Study?	no

1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

1.1 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as "Forest" spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of 5-10 percent or trees able to reach these thresholds ; or with a combined cover of shrubs bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as "Forest" or "Other wooded land".
...of which with tree cover (<i>sub-category</i>)	Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity. It includes bothe forest and non-forest tree species.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.
Forest expansion	Expansion of forest on land that, until then, was not defined as forest.
...of which afforestation (<i>sub-category</i>)	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.
...of which natural expansion of forest (<i>sub- category</i>)	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.
...of which human induced (<i>sub-category</i>)	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.
Reforestation	Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.
...of which artificial reforestation (<i>sub- category</i>)	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

1.2 National data

1.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	OLIVER. W. 1992 Plantation forestry in the South Pacific: A compilation and assessment of Practices. Project RAS/86/036, UNDP/FAO, Rome	Plantation area	1991	N/A
2	OLIVER. W. 1999. An update of plantation forestry in the South Pacific RAS/97/330. Working paper, UNDP/FAO, Rome	Land cover types	1998	N/A
3	Cook Islands Natural Heritage Project- Cook Islands Biodiversity Database	Names of trees	2000	N/A
4	Agroforestry Guides for Pacific Islands by Craig R, Elevich and Kim M. Wilkinson	Names of trees	2000	N/A
5	Cook Islands Biodiversity – Strategy and Action Plan. April 2002.	Strategy and Action	2002	To equitable share the responsibility and use of biodiversity sustainably, and tyo equitably share benefits.
6	Short Term Consultancy Assignment to the Island of Mangaia, Cook Islands. By Hans Christoph Jahn, SPC/GTZ-Pacific German Regional Forestry Project.	Information on forestry conditions with aim to come up with recommendations for a future sustainable and nature-oriented management planning.	June – August 2001	Did a plantation inventory for the island of Mangaia. (see Table 1.5 Comments)

1.2.2 Classification and definitions

National class	Definition
Littoral forest	The littoral zone in the Cook Islands, were not pre-empted by human modification, includes coastal area forest dominated by some combination of trees such as: Hibiscus tilliaceus, Aleurites moluccana, Artocarpus altilis, Artocarpus hererophyllus, Averrhoa carambola, Bambusa vulgaris, Bischofia javanica, Erythrina variegata, Cocos nucifera, Pandanus sp, Pisonia grandis, Plumeria sp, Pometia pinnata, Hernandia nymphaeifolia, Guettarda speciosa, Barringtonia sp, Calophyllum inophyllum, Cassia sp, Casuarina equisetifolia, Ceiba pentandra, Delonix regia, Cordia subcordata, Ficus sp, Mangifera indica, Terminalia catappa, Tamarindus indica, Melia azedarach, Morinda sp, Persia Americana, Cananga odorata, Pisonia grandis, Pemphis acidula

Makatea forest	<p>The vegetation of makatea is generally well preserved because the rough surface, for it is unsuitable for cultivation or human habitation. Examples can be seen on the islands of Mangaia, Atiu, Mauke and Mitiaro. The vegetation becomes more species-rich with distance inland. The coastal makatea forest changes with distance inland from a combination of the followings: Pandanus sp, Casuarina equisetifolia, Calophyllum inophyllum, Cordia subcordata, Thespesia populnea, Hibiscus tiliaceus, Terminalia catappa, Tectona grandis, Syzygium cumii, Pisonia grandis, Homalium acuminatum, Pemphis acidula, Scaevola taccada, Fitchia speciosa, Cocos nucifera, Albizia sp, Spathodea campanulata, Pimenta racemosa, Mangifera indica, Tournefortia agentea, Artocarpus altilis, Acacia sp, Aleurites moluccana, Averrhoa carambola, Pinus caribaea, Casuarina equisetifolia, Melia azedarach, Hernandia nymphaeifolia, Erythrina variegata, Plumeria sp, Cassia sp, Citrus sp, Psidium guajava, Guettarda speciosa, Spathodea campanulata, Schizotachyium spp, Musa sp, Erythrina variegata, Pometia pinnata, Artocarpus heterophyllum, Syzygium cumini, Ceiba pentandra, Leucaena leucocephala, Litchi sinensis, Leucaena leucocephala, Fagraea berteriana, Cananga odorata, Spondias dulcis, Tamarindus indica, Inocarpus fagifer, Annona spp, Pandanus spp, Satalum sp, etc</p>
Other natural forest	<p>Includes montane forest and cloud forest. This come from assumption since no further explanation is given in the source. Trees with a combinations of the followings: as above</p>
Plantation	<p>Santalum sp, Pinus sp, Acacia sp, and Eucalyptus sp mainly on Rarotonga where fernlands, were once growing but because of human made fires, soil erosion occurs, hence these trees were introduced. Also, Mangaia and Atiu were once the queens of growing pineapples for export etc during the 1940s – 1980s, but due to lack of market access/availability and prices, we lost them, hence soil erosion again occurs, Mauke and Mitiaro same as Rarotonga. The following trees then were introduced and planted to stop soil erosion with the thinking and planning that when they matured they can be harvested or milled, but since NES Acts was enforced it changes the whole programme of milling, because the Environmental Impact Assessment (EIA) stops everything from harvesting and the cutting and milling of these trees, because the conditions are very complicated to follow as we don't have the machineries to carry out the harvesting procedures of these trees on the EIA. It is very expensive to harvest these trees if we follow the requirements as endorsed on the EIA.</p>
Other land	<p>Trees are scattered because these land are only used mainly as agricultural land uses, and trees growing on these lands are Coconut (Coco nucifera), Mango (Mangifera indica), Breadfruit (Artocarpus altilis), Malay apple (Syzygium malaccense), Polynesian plum (Spondias dulcis), Polynesian chestnut (Inocarpus fagifer) Lichee (Litchi sinensis), Avacado pears (Persia Americana), Tava (Pometia piñata) Noni (Morinda citrifolia), Candlenut (Aleurites moluccana), Tamanu (Calophyllum inophyllum), Kapoc (Delonix regia), Chinaberry (Melia azedarach), Poumuli (Fleuggea flexuosa), Hibiscus tree (Hibiscus tiliaceus), (Bandanus sp), Bay-rum-tree (Pimenta racemosa), Pisonia (Pisonia grandis), and the list goes on.</p>

Afforestation	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest. (Some of these lands were planted with introduced fruit trees under the FAO Introduction of Fruit Trees Project such as: Dragon fruits spp, Jack fruits spp, Peanut butter tree, Custard apple sp, Tamarind sp, Citrus spp, Governor’s plum, Banana spp, Morinda sp, Mango sp,)
Reforestation	Re-establishment of forest through planting and/of deliberate seeding on land classified as forest
Natural expansion of forest	Expansion of forests through natural succession on land that, until then, was under another land use, (e.g. forest succession on land previously used for agriculture). Agriculture land being planted with pineapple in the 1950, to 80s on the islands of Mangaia, Atiu and Rarotonga, but in the 1970s’ export of pineapples ceased for lack of marketing overseas. With no market for our pineapples and processing plant/company ceased processing, people ceased planting and the land in which they have planted with pineapples started to erode. Soil erosion was a big problem on these islands hence forestry came into existence. Pines (<i>Pinus caribbean</i>) were introduced to stop these soil erosions and in later years <i>Acacia</i> sp, <i>Eucalyptus</i> sp were introduced also and not only for soil erosion but also other uses like electricity wood burning generator. Other islands in the Southern group namely Mauke and Mitiaro were two of the islands where these trees were introduced. These trees were also planted on most of the fern lands on Rarotonga and other local forest trees e.g. <i>Albizia</i> sp etc, also to stop soil erosion whereby these fernlands were burned by kids for fun). The introduction of <i>Albizia</i> sp was due to help out with making of patterns for export boxes of citrus, but due to certain circumstances it failed to do the job it suppose to do, because we lost the market of importing citrus sp and it became invasive. The only use for <i>Albizia</i> sp is for display of making local canoes for tourism attraction throughout the year, or for locals for net fishing etc.

1.2.3 Original data

Forest Area (Source: OLIVER . W. 1999. Reference year – 1998)	
National Classification	Area (ha)
Littoral Forest,	4,900
Makatea Forest	5,000
Other Natural Forest	4,500
Plantations	1,100
Other Land	7,800

(Other sources: OLIVER. W. 1992, Reference year – 1991. Area occupied by plantations = 510 ha)

1.3 Analysis and processing of national data

1.3.1 Adjustment

Forest area

No calibration required. Other land calculated as the difference between total land area and the sum of forest plus other wooded land.

1.3.2 Estimation and forecasting

Forest area

The area of natural forests (14400 ha) is assumed to be constant and is used for all reporting years.

The plantation area for 1998 (1100 ha) is used for reporting years 2000, 2005 and 2010.

The plantation area for 1991 (510 ha) is used for reporting year 1990.

1.3.3 Reclassification

Reclassification into FRA 2010 Categories

National Class	FRA Classification		
	Forest	Other wooded land	Other land
Littoral Forest	100%		
Makatea Forest	100%		
Other Natural Forest	100%		
Plantations	100%		
Other Land			100%

Reclassification into FRA 2015 Categories

National Class	FRA Classification
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	Forest	Other Wooded Land	Other Land
Littoral Forest	100%		
Makatea Forest	100%		
Other Natural Forest	100%		
Plantations	100%		
Other Forest			100%

1.4 Data

Table 1a












Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	14.4	15.1	15.1	15.1	15.1
	Other wooded land	0	0	0	0	0
	Other land	9.1	8.5	8.5	8.5	8.5
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	0	0	0	0	0
	TOTAL	23.50	23.60	23.60	23.60	23.60

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
	Forest expansion	14.9	15.5	15.5	15.5	N/A	N/A	N/A	N/A
	... of which afforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which natural expansion of forest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deforestation	0	0	0	0	N/A	N/A	N/A	N/A
	... of which human induced	0	0	0	0	N/A	N/A	N/A	N/A
	Reforestation	0	0	0	0	N/A	N/A	N/A	N/A

	... of which artificial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 1	Tier 1
Other wooded land	Tier 1	Tier 1
Forest expansion	Tier 1	Tier 1
Deforestation	Tier 1	Tier 1
Reforestation	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> • Forest • Other wooded land • Afforestation • Reforestation • Natural expansion of forest • Deforestation 	<p>Tier 3 : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs Tier 2 : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago) Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	It is assumed that the natural forest area reported for 1998 by Oliver (1999) can be used as a valid estimate for 1990. Oliver (1992) reports the plantation area in 1992. As no date was provided the value given is assumed to refer to 1991, and is used for 1990	Due to the absence of additional information, the size of forest in 2000, 2005 and 2010 were assumed to be the same as the reported values for 1998.
Other wooded land	N/A	N/A
Other land	N/A	N/A
Other land with tree cover	N/A	N/A
Inland water bodies	N/A	N/A
Forest expansion	N/A	N/A
Deforestation	N/A	N/A

Reforestation	<p>Natural expansion of forest occurs mainly on the islands of Mangaia and Atiu (where once was planted with pineapple plantations) and on Rarotonga mainly on fern-lands being burned to stop soil erosions. They were introduced mainly for soil erosions and also for timber for buildings (<i>Pinus caribean</i>) and wood burning electricity generator (<i>Acacia mangium</i>). Later in the years Sandalwood (<i>Santilum sp</i>) was introduced to all islands in the Southern Cook Islands. (Rarotonga, Mangaia, Aitutaki, Mauke, Mitiaro and Atiu, but only Mangaia and Mitiaro were successful in this programme. Other forest trees were introduced like the Poumuli trees from Samoa which are growing well here on the southern side of Rarotonga. But due to the Government re-organisation in 1996, forest division within the Ministry of Agriculture was one of the unlucky divisions whereby forest policies were no more be part of the Ministry's policy. A new ministry was introduced by the Cook Islands Government, the Ministry of Conservation and part of the forest policy was given under their policy. Since then with all these plantations of pines and <i>Acacia sp</i> was ignored, and taken over by the families who owns these lands. The only part of forestry that the Ministry of Agriculture retains was coordinating of forest programmes such as Forest Genetic Assessment, Forest Resource Assessment, REDD+, etc programmes and even advisory work to forest programmes within the Cook Islands etc.</p>	N/A
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Other general comments to the table

Other land with tree cover (agriculture land) planted with oranges or citrus sp in the 1950-80#s are being used by land owners as private house sites, accommodations or units for tourism purposes. These are the only changes that is happening here mainly in the Southern Cook Islands, however data is not available to report on the area of Other land with tree cover. As for the Northern Cook Islands forest remains the same except during the 5 cyclones that hit them but according to them forest has grown back and almost to its peak again. The datas used above are the same datas used in the FRA 2005 report for the Cook Islands, no changes. On tiers: No forest national inventory has been carried out for the Cook Islands. Just recently Red Cross Cook Islands did a bit on remote sensing on some of the small islands, e.g. Mitiaro etc. GIS the most method used for mappings in the Cook Islands. These reports are still new and data are still in the early stage and unavailable for the public etc. National forest inventory: No inventory had been carried out, except Mangaia**. Various Government initiatives regarding forestry have done without a proper mapping process where estimation of changes to the forest cover from natural and human interference are monitored and recorded. On the other hand a range of reports have documented changes due to demand of agriculture for export in the early stage in the early year, the development of housing sectors and infrastructures and introduced species; some of these records are mentioned throughout this report. Remote sensing survey/mapping: Still in the early stage. Remote Sensing and GIS mapping of forest have been done in various EIA report and survey by National Environment Services (NES), these surveys are normally pockets of interests which do not show impact on a large scale. A pilot project on Land Use Management has looked at mapping forest cover of the whole island of Mauke; this is still on-going, otherwise, GIS technology exist but are not being fully used. Other efforts: Several Climate Change and Disaster Management report will be attempting to study impacts on the environment which will might include an inventory on forest use and degradation due to Climate Change. A World Bank report, have indicated a rough estimated of forest cover but are not credible for other use. ** Please note that in June – August 2001 a Consultant from SPC/GTZ was assigned to the Cook Islands for a Short Term Consultancy Assignment to the Island of Mangaia, in the Cook Islands. In his assignment he did an inventory data for Mangaia only and here are his findings: The sampling intensity will be only 0.5% by selecting 8m radius circular plots. Such a plot has an area of 0.02 ha or 200 square-meter. In each plot the radius is to be horizontal distance and all live trees above 7cm will be measured for DBH, height and quality (poor, medium and good). Also slope gradient and remarks such as estimated age of the plantation, heavy erosion or natural regeneration will be recorded. The plots are systematically chosen along a square-grid of 100 x 100m. Because the only available map is a patchwork of copies from a map with a scale of approximately 1:20000 this inventory will be not at all precise. However, it should give hints for further objectives and activities in the pine-eucalyptus-acacia plantations. Insufficient equipment (compass, measuring tape, clinometers) does not allow work with several sampling crews, so only one crew accomplishing just 5 to 8 plots a day is working. Forester Teuanuku Koroa is crew-leader. To cover the area concerned 264 plots are necessary. The map showing the plantation stands is only a rough sketch (made some years ago) of planted areas at that time. 264 plots, each representing 4 ha, would give a plantation an area of more than 1000 ha. The needs to be verified. A further distinction has to be made between hectares planted and hectares actually satisfactorily stocked. Therefore quite a number of sample-plots will have fewer trees at all, so the work could eventually be completed within 30 working days. Rainy days and fourth coming holidays will slow down the work probably by more than 50% so 2 to 3 months will be a realistic figure to complete the survey. Work started in mid June and should finish, at the latest, end of September. The tally sheets should be printed, data checked for obvious mistakes and mean heights per 3cm groups (7-10, 11-14, 15-18 etc) calculated. For further compilation data should be send also to headquarters of SPC/GTZ/PGRFP, Forum Secretariat, House 10, Suva FIJI.

2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

2.1 Categories and definitions

Term	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Naturalized introduced species	Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.
Introduced species	A species, subspecies or lower taxon occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
Category	Definition
Primary forest	Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
...of which of introduced species (<i>sub-category</i>)	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized (<i>sub-sub category</i>)	Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
...of which of introduced species (<i>sub-category</i>)	Planted forest where the planted/seeded trees are predominantly of introduced species.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
...of which planted (<i>sub-category</i>)	Mangroves predominantly composed of trees established through planting.

2.2 National data

2.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Wilkinson" /> Agroforestry Guides for Pacific Islands by Craig R. Elevich and Kim M> Wilkinson	Pacific trees and its uses	1997	This guide provides an introduction to Pacific Islands Agroforestry for extension agents and growers. Traditional Pacific Island agricultural and land use systems were built on a foundation of protecting and planting trees.

2	Cook Islands Biodiversity Database by the Cook Islands Natural Heritage Project.	Names of Trees and its uses	2000	To equitably share the responsibility to conserve and use biodiversity sustainability, and to equitably share the benefits.
3	OLIVER. W. 1992 Plantation forestry in the South Pacific: A compilation and assessment of Practices. Project RAS/86/036, UNDP/FAO, Rome	Plantation area	1991	N/A
4	OLIVER. W. 1999. An update of plantation forestry in the South Pacific RAS/97/330. Working paper, UNDP/FAO, Rome	Land cover types	1998	N/A
5	Cook Islands Biodiversity by the Cook Islands Natural Heritage Workshop	Strategy and Action Plan	2002	N/A

2.2.2 Classification and definitions

National class	Definition
Naturally generated forest	Trees established through natural regeneration such as: <i>Aleurites moluccana</i> , <i>Barringtonia asiatica</i> , <i>Calophyllum inophyllum</i> , <i>Casurina equisetifolia</i> , <i>Ceiba pentandra</i> , <i>Cocos nucifera</i> , <i>Delonix regia</i> , <i>Guettarda speciosa</i> , <i>Inocarpus fagifer</i> , <i>Mangifera indica</i> , <i>Melia azedarach</i> , <i>Morinda citrifolia</i> , <i>Pometia pinnata</i> , <i>Pritchardia pacifica</i> , <i>Pisonia grandis</i> , <i>Thespersia populnea</i> , <i>Tournefortia argentea</i> , <i>Terminalia catappa</i> , <i>Spondias dulcis</i> , <i>Melia azedarach</i> , <i>Homalium acuminatum</i> , <i>Syzycium cumini</i> , <i>Incarpus fagifer</i> , <i>Albizia lebbbeck</i> , <i>Spathodea campanulata</i> , <i>Hernandia nymphaeifolia</i> , etc
Introduced species	A species, sub-species or lower taxon, occurring outside its natural range (past and present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by human). <i>Tectona grandis</i> , <i>Albizia lebbbeck</i> , <i>Bamboo vulgaris</i> , <i>Azadirachta indica</i> , <i>Acacia mangium</i> , <i>Delonix regia</i> , <i>Ficus bengalensis</i> , <i>Ficus benjamina</i> , <i>Ficus carica</i> , <i>Litchi sinensis</i> , <i>Macadamia integrifolia</i> , <i>Morinda citrifolia</i> , <i>Persia Americana</i> , <i>Pinus caribean</i> , etc.

Primary forests	Naturally regenerated forest of native species, where are no clearly visible indications of human activities and the ecological process are not significantly disturbed: <i>Aleurites moluccana</i> , <i>Inocarpus fagifer</i> , <i>Leucaena leucocephala</i> , <i>Mangifera indica</i> , <i>Morinda citrifolia</i> , <i>Musa</i> sp, <i>Pemphis acidula</i> , <i>Persia Americana</i> , <i>Pometia piñata</i> , <i>Psidium guajava</i> , <i>Spondias dulcis</i> , <i>Syzygium malaccense</i> , <i>Tamatindus indica</i> , <i>Terminalis catappa</i> , <i>Cocos nucifera</i> , <i>Carica papaya</i> , <i>Barringtonia edulis</i> , <i>Averrhoa carambola</i> , <i>Artocarpus altilis</i> , <i>Annona squamosa</i> , <i>Pisonia grandis</i> , <i>Ceiba pendastra</i> , <i>Scaevola taccada</i> , <i>Thesoesia populnea</i> , <i>Tournefortia argentea</i> , <i>Acacia</i> spp, <i>Hernandia nymphaeifolia</i> , <i>Hibiscus tiliaceus</i> , <i>Calophyllum inophyllum</i> , <i>Cananga odorata</i> , <i>Cordia subcordata</i> , <i>Fagraea berteriana</i> , <i>Casuarina equisetifolia</i> , <i>Guettarda speciosa</i> , <i>Scaevola taccada</i> , <i>Allyxia</i> spp, <i>Codyline</i> spp, <i>Derris elliptica</i>
Other natural regenerated forest of introduced species	Other naturally regenerated forest where the trees are predominantly of introduced species: <i>Santalum</i> sp, <i>Accasia</i> sp, <i>pinus</i> sp, <i>Macardamia</i> sp etc.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding: <i>Pinus caribean</i> , <i>Eucalyptus citriodora</i> , <i>Leucaena leucocephala</i> , <i>Spathodea campanulata</i> , <i>Acacia mangium</i> ,

2.2.3 Original data

	Area ('000 ha)	
	1991	1998
Natural forest	14.4	14.4
Plantation forest	0.5	1.1

2.3 Analysis and processing of national data

2.3.1 Adjustment

National Environment Service (NES)
Ministry of Agriculture (MoA)

2.3.2 Estimation and forecasting

As above

2.3.3 Reclassification

Ministry of Agriculture (MoA)

2.4 Data

Table 2a







Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	0	0	0	0	0
	Other naturally regenerated forest	14.4	14.4	14.4	14.4	14.4
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
	... of which naturalized	N/A	N/A	N/A	N/A	N/A
	Planted forest	0.5	1.1	1.1	1.1	1.1
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
TOTAL		14.90	15.50	15.50	15.50	15.50

Table 2b

Primary forest converted to (000 ha)								
1990-2000			2000-2010			2010-2015		
Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land
0	0	0	0	0	0	0	0	0

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	0	0	0	0	0

... of which planted	0	0	0	0	0
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Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 1	Tier 1
Other naturally regenerated forest	Tier 1	Tier 1
Planted forest	Tier 1	Tier 1
Mangroves	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p>Tier 3 : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	N/A	N/A
Other naturally regenerating forest	All forest in the Cook Islands except the planted forest is in this category. These trees are still the main species established through natural regeneration.	All these introduced trees are growing well, but some of them are invasive such as the Albizia spp, Acacia spp, African Turlip trees etc. There uses are not known to local carvers/craftsmen etc.
Planted forest	These trees came about through introduction for a certain project. Morinda sp plantations were also planted for export.	Due to soil erosion on the hills of Mangaia where once were pineapple plantations Pinus caribbean were introduced to stop soil erosion and later Acacia sp were introduced for electrical wood burning generator and Eucalyptus sp.
Mangroves	Mangroves do not exist in the Cook Islands. It was once brought in and planted in the Ngatangiaa mash area but did not grow well and was destroyed by cyclone Sally 1960s.	Nobody knows why it did not grow well, maybe it has something to do with the flow of sea or the cyclones etc.

Other general comments to the table

Rubber plantation do not exist in the Cook Islands. Rubber trees were never thought of being introduced into the Cook Islands, maybe of the size of the islands too small for rubber plantations. There is no record of the Cook Islands of having rubber plantations, mangroves and bamboo plantations. They did introduced Teak (*Tectona grandis*) but used for land boundaries by the Europeans, wind breaks such as Ngatae (*Erythrina variegata*) for citrus sp plantations etc. These introduced species were introduced for various reasons but some of these are invasive sp e.g. *Albizia lebbbeck*, *Acacia* sp etc. These were introduced for the purpose of: # *Albizia lebbbeck* – Introduced by the Ministry of Agriculture for the purpose of making patterns for export boxes of citrus sp overseas as we import tones of these patterns for our citrus export; # *Acacia* sp – These were introduced for the purpose of wood for the wood burning electricity generator; # *Pinus* sp – These were introduced for the purposes of timber, and to stop soil erosion mainly for the islands of Mangaia and Atiu who once were pineapple planters but due to market unavailability the growers on these two islands ceased planting pineapples hence serious soil erosion occurs, and Rarotonga on fern lands that the kids have burn them and also serious soil erosion occurred; # *Santalum* sp – These were introduced for craft, oil and many other uses mainly for the islands of Mangaia, Mauke, Atiu and Mitiaro; # *Erythrina variegata* – Were introduced for the purpose of windbreaks for citrus sp plantations; # Teak (*textona grandis*) – Introduced for the purpose of land marks/boundaries by Europeans land surveyors. # Poumuli – Introduced from Samoa for the purpose using for agriculture purposes e.g. post, etc. # *Morinda citrifolia*- A new variety was introduced from Vanuatu through seeds by the Ministry of Agriculture with larger fruits and sweeter taste. # Fruit tree species – An FAO project whereby exotic fruit trees from overseas (Australia etc).

3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

3.1 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.
Net Annual Increment (NAI)	Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".
Above-ground biomass	All living biomass above the soil including stem stump branches bark seeds and foliage.
Below-ground biomass	All biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood	All non-living woody biomass not contained in the litter either standing lying on the ground or in the soil. Dead wood includes wood lying on the surface dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in above-ground biomass	Carbon in all living biomass above the soil including stem stump branches bark seeds and foliage.
Carbon in below-ground biomass	Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm) lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm.

3.2 National data

3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	NES- Cook Islands Biodiversity Strategy and Action Plan. April 2002.	N/A	2002	N/A
2	NES- National Stocktake Report, National Capacity Self Assessment for Global Environment Management Project. August 2005	N/A	2005	N/A

3	The Cook Islands Kaveinga Nui. National Sustainable Development Plan 2011-2015.	N/A	2011-2015	Objectives: 1. The use of all our natural resources are managed well to ensure their sustainable. 2. Our scarce and degraded natural resources are effectively monitored and restored. 3. The pollution of air, water and land resources id managed so that impacts are minimised and community and ecosystem health is not adversely affected. 4. Irreversible loss and degradation of biodiversity (marine terrestrial, aquatic ecosystem) is avoided. 5. Our actions to protect and manage our ecosystems and natural resources will include CCA and emission s reduction measures. 6. Taking care of our natural environment is everybody’s business.
4	N/A	N/A	N/A	N/A

3.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

3.2.3 Original data

No logging or milling or cutting of these forest trees or plantations, growing stocks are growing wild and wildlife is seen expanding, and it also stops soil erosion. The only problem we can see are these invasive weeds such as *Merremia Peltata* (Morning glory), *Cardiospermum graniforum* (Ballon vine), *Mikania micrantha*), and *Passiflora rubra* (Red Passionfruit vine) increasing on hillsides and killing all the trees etc, and invasive tree species such as *Spathodea campanulata* (African Tulip Tree), *Albizia lebbbeck/Paraserianthes falcataria* (Albizia sp). Also we don’t forget about climate change (increase in cyclones, tsunamis, high winds, etc). In the Cook Islands those families who have built near the seashore or along the low areas seems to have change their accommodations and are looking at building on higher areas because of these changes in climate change, hence, building on high slopes etc, which means clearing and cutting allot of trees and levelling where they need to build. The only way stopping them from carrying out these buildings is the NES-EIA policy. Tourism

is one of the biggest changes in destruction of forest trees and agriculture land uses, into new accommodations to accommodate our tourism industry.

Te Kaveinga Nui 2011-2015

National Environment Service (NES)

Non-Government Organisations (NGOs)

3.3 Analysis and processing of national data

3.3.1 Adjustment

National Environment Service (NES)

Non-Government Organisations (NGOs)

3.3.2 Estimation and forecasting

National Environment Service (NES)



Non-Government Organisations (NGOs)

3.3.3 Reclassification

Ministry of Agriculture (MoA)

3.4 Data

Table 3a

Category		Growing stock volume (million m ³ over bark)										
		Forest					Other wooded land					
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015	
	Total growing stock	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


	... of which broadleaved	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	N/A	N/A	N/A	N/A	N/A	N/A
2 nd	N/A	N/A	N/A	N/A	N/A	N/A
3 rd	N/A	N/A	N/A	N/A	N/A	N/A
4 th	N/A	N/A	N/A	N/A	N/A	N/A
5 th	N/A	N/A	N/A	N/A	N/A	N/A
6 th	N/A	N/A	N/A	N/A	N/A	N/A
7 th	N/A	N/A	N/A	N/A	N/A	N/A
8 th	N/A	N/A	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A	N/A	N/A
10 th	N/A	N/A	N/A	N/A	N/A	N/A
Remaining			N/A	N/A	N/A	N/A
TOTAL			.00	.00	.00	.00

THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	N/A	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	N/A	N/A
Minimum diameter (cm) of branches included in growing stock (W)	N/A	N/A
Volume refers to above ground (AG) or above stump (AS)	N/A	N/A

PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.

Table 3c




Category		Net annual increment (m ³ per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
	Net annual increment	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	N/A	N/A	N/A	N/A	N/A

Table 3d











Category		Biomass (million metric tonnes oven-dry weight)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Above ground biomass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Below ground biomass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Carbon in above ground biomass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in below ground biomass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Subtotal Living biomass</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in litter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<i>Subtotal Dead wood and litter</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Soil carbon	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	N/A	N/A
Net annual increment	N/A	N/A
Above ground biomass	N/A	N/A
Below ground biomass	N/A	N/A
Dead wood	N/A	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below ground biomass	N/A	N/A
Carbon in dead wood and litter	N/A	N/A
Soil carbon	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other

Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon 	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	No inventory has been carried out yet. Need to be carried out asap.	Nothing has been done. Need to be carried out asap.
Growing stock of broadleaved coniferous	As above	As above
Growing stock composition	As above	As above
Net annual increment	As above	As above
Above-ground biomass	As above	As above
Below-ground biomass	As above	As above
Dead wood	As above	As above
Carbon in above-ground biomass	As above	As above
Carbon in below-ground biomass	As above	As above
Carbon in dead wood	As above	As above
Carbon in litter	As above	As above
Soil carbon	As above	As above

Other general comments to the table

: The above table needs to be looked at with great care and work must be done as soon as possible. These are very useful information for future generations on climate change and etc.

4. What is the status of forest production and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

4.1 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription documented decision of the landowner/manager or evidence provided by documented studies of forest management practices and customary use.
Non wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Commercial value of NWFP	For the purpose of this table, value is defined as the commercial market value at the forest gate.
Category	Definition
Production forest	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use forest	Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.
Total wood removals	The total of industrial round wood removals and woodfuel removals.
...of which woodfuel	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

4.2 National data

4.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	BROWN. C 1997. Regional Study the South Pacific: Asia-Pacific forestry Sector Outlook Study Working paper. Series, WP No. APFSOS?WP?01, FAO, Rome.	Forest categories	1996	N/A

2	Agroforestry Guides for Pacific Islands by Graig. R. Elevich and Kim. M. Wilkinson (Editors)	Pacific Forest trees and their uses	1997	Agroforestry is a sustainable land-management system which increases the overall yield of the land, combines the production of crops) and forest plants and/or animals simultaneously or sequentially, on the same unit of land, and applies management practices that are compatible with the cultural practices of the local population. Nair 1989)
3	Cook Islands Biodiversity Database by the Cook Islands Natural Heritage	Names of trees	2000	The Cook Islands Biodiversity Database is a concise online multimedia Collection of all known Cook Islands species, designed to eventually include the country's entire biodiversity. The database currently contains 4,500 of those records including standardized images to aid recognition.
4	Forests of the Pacific Islands. Foundation for a Sustainable Future. SPC	Raising the profile of Pacific forests	2011	In the Pacific islands, the main forest types are montane rainforest and cloud forest, tropical lowland rainforest, tropical dry forest, swamp forest, coastal forest, mangrove forest, agroforest and plantation forest. The extent and nature of these different forests on each Pacific islands depends on factors including islands type, elevation, location within the ocean and climate.

4.2.2 Classification and definitions

National class	Definition
Production	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use	Forest area designated primarily for more than one purpose and where none of these alone is considered as the predominant designated functions.
N/A	N/A
N/A	N/A

4.2.3 Original data

Actually the status of forest in the islands has increase and very little change overtime. Now people are aware of climate change and also National Environment Services has increased more advertisement on biodiversity going around the world on local TV, local radio stations and through media releases (awareness programmes).

	Area ('000 ha)	
	1991	1998
Natural forest	14.4	14.4
Plantation forest	0.5	1.1

Source : Brown. C. 1997.

	Primary use
Natural forest	Multiple use (Conservation and Watershed Protection)
Plantation forest	Soil and Watershed Conservation

4.3 Analysis and processing of national data

4.3.1 Adjustment

Note to: Analysis and processing of national data

Natural forests have been classified as “Multiple purpose” using the figures reported in Question 1 for each reporting year.

4.3.2 Estimation and forecasting

4.3.3 Reclassification

Reclassification into FRA 2015 categories

Forestry in the Cook Islands is for conservation and local cottage-type industry use, such as hand crafts, firewood, and land management in areas prone to erosion, such as rivers, streams, and the beach front. There is no commercial harvest. Apart from 1,110 hectares of planted forest, the rest is natural forest comprising of a number of tropical species. Protection of the water lends by the country's forest cover is seen as critical to ensuring quality water supply for domestic use.

This report presents the current status of forestry in the Cook Islands, both natural and planted. It provides data where this is known. Because there is no commercial forestry in the country, a lot of the required data are therefore not known, or does not apply.

The following section will detail the institutional arrangements in place in both government and civil society to address biodiversity. A narrative is provided for the main arrangement of Biodiversity as follows:

§ National Environment Services (NES)

The Environment Act 2003 is the principal legislation providing a mandate to the NES for biodiversity conservation. It provides national legislation for the conservation and management of Biodiversity as follows:

§ Protected species – Designating animals and plants as protected species for the purpose of this Act;

§ Providing for protection, conservation and management of wildlife, protected species or both;

§ Regulating or prohibiting trade and commerce in wildlife, protected species, or both;

§ Protected areas – Establishing Protected Areas and regulating or prohibiting activities within these species.

Despite this legislated Mandate, the country has witnessed a progressive dilution of capacity hands-on-conservation management with government. Though the NES (then the Conservation Service) has grown from initial staff of three in 1988 to number 27, today there are only 2 staff members working full time in the biodiversity sector. In addition to this, the legislative shift from a conservation focus to an environmental management focus resulted in less attention on conservation activities and more on overall environmental management, including more focus on development, monitoring and management.

The vacuum has been filled to some extent by the formation of the Cook Islands Natural Heritage project, though also with a staff to one. To fill the gap, a number of NGOs have been actively involved in biodiversity conservation at the community level. For example the traditional leaders, supported by NGOs, have made progress in the promotion of the rai system (traditional resource management system) for marine conservation).

§ Ministry of Marine (MMR)

The other Government Ministry with a major role in biodiversity management is the Ministry of Marine Resources, as it is responsible for both inshore and offshore fisheries management. The MMR Act 2005 defines the fishery waters of the Cook Islands as the internal waters, territorial sea and inclusive economic zone. It allows the Queen’s Representative to designate any fishery which is considered important to the national interest or which requires management for ensuring sustainable utilization of the fishery resource. A fishery can only be designated on the recommendation of the Secretary, after taking into account the scientific, economic, environmental and other relevant factors of the fishery in regard to effective conservation and optimum utilization for national benefit. A fisheries plan for each designated fishery is to be prepared by the Secretary of MMR, or by a local authority in conjunction with MMR for a designated fishery within its area.

Designated fisheries have been declared for under the Act in Manihiki, for management of *Parau* fishery (pearl) in the Manihiki lagoon and the *Ava* fishery in lake *Porea*.

In commercial long line fishery has also been declared a designated fishery, and a management plan has been prepared. This plan includes conservation measures for turtles, sharks, and seabirds, under the international plans for actions under FAO’s International Code of Conduct for Responsible Fisheries (CCRF), and also in line with commitments to the West and Central Pacific Fisheries Commission (WCPFC).

- Ministry of Agriculture (MoA)

The Ministry of Agriculture plays a major role in biodiversity conservation, through administering a number of Acts and Regulations. These include:

- Biosecurity Act 2008
- Copra Act, 1970
- Wandering Animals Act (24 of 1976)
- Cook Islands Fruit Regulations 1965, (S.I. 146/1954);
- Regulations under *Cook Islands Act 1915* for preventing growth and spread of noxious weeds, 1916 (as amended in 1927, 1931, 1933);
- Regulations under *Cook Islands Act 1915* for the protection of indigenous and imported birds and to prevent the introduction of noxious animals and birds into the Cook Islands.

The Cook Islands is also a party to a number of international treaties through the MoA that relate to biodiversity. These include the International Plant Protection Convention (IPPC), which seeks to prevent the spread and introduction of Pest and plants, plant products and including natural flora, and to promote appropriate measures for their control. Under the IPPC, the Cook Islands are required to regulate the importation of plants and plant products and other objects, materials capable of harbouring plant pests.

The Cook Islands is also a party to The International Treaty Plant Genetic Resources for Food and Agriculture. The treaty supports the Convention on Biological Diversity, by seeking to conserve, for sustainable use, plant genetic resources for food and agriculture.

It requires the development and national legislation and regulations needed to implement the Treaty.

The Cook Islands has also signed, but not yet ratified, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity.

The Ministry under its FAO funded programme will be working with the MFEM’s Statistics Division to update its 2000 Agriculture Census. This update will have an important role, to provide information for monitoring purposes especially to monitor the following changes: the area used for agriculture on all the islands; the types

of crops planted; the role of women in agriculture; livestock farming and waste disposal systems used; access to water supply; the use of chemicals and inorganic/organic fertilizers; the use of natural resources for traditional and modern agriculture; and access to technology related to agriculture.

§ Non-Government Organizations (NGOs)

The number of environmental NGOs has increased since 2002 from four known NGOs to six in 2010 (Table 37). Several of these organizations have been instrumental in the implementation of programmes such as the protected areas programme (e.g House of Ariki¹, Koutu Nui^{##}, WWF and Ipukarea Society).

Te Vaka Taunga – Te Rito o te Vairakau Maori has taken on the role of addressing the protection and conservation of medicinal plants by encouraging their members to practice their medicine, and are, through their members, working on chemical free weed control. The organisation's main focus is to protect practitioners and their knowledge, which should have a flow on effect for the benefit of biodiversity.

There is a lack of recognition of women's role in the use of local biodiversity, e.g. for crafts, and household food expenditure. The 2010 Cook Islands National Council of Women Conference addressed the roles that women play in the use and conservation of biodiversity.

4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	0	0	0	0	0
	Multiple use forest	14.4	14.4	14.4	14.4	14.4

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	100% Pure Pasteurised Noni Juice	Morinda citrifolia	N/A	N/A
2 nd	Maire Leis	Alyxia elliptica	N/A	N/A

3 rd	Handicrafts	1. Weaving: - Coconut - Screw pine etc 2. Beads: - Portia tree - Screw pine etc 3. Wood Handicrafts: - Coconut - Common bamboo - Pacific rosewood etc 4. Fibre: - Banana - Beach hibiscus - Coconuts etc 5. Minor wood products: - Acacia sp - Beach cordial - Beach hibiscus etc	N/A	N/A
4 th	Food Crops	1. Fruits: - Bananas - Breadfruits - Dyer's fig - Mangoes etc 2. Nuts: - Coconuts - Polynesian Chestnut - Tropical Almond etc 3. Root crops: - Taro - Yam - Kumara etc 4. Leafy vegetables: - Rukau (young taro leaf) - Rukau Viti - Spinarch etc 5. Fodder: - Mash taro - Leucaena - Hawaiian tree fern etc	N/A	N/A
5 th	Floriculture	1. Cut-flowers: - Orchids sp - Fern sp - Anthurium sp etc 2. Flower garlands: - Ylang-ylang - Gardenia sp - Maire sp etc 3. Flowering plant/trees: - Golden shower - Ylang-ylang - Portia tree etc	N/A	N/A
6 th	Plant/Oil Extracts	1. Vegetable Oils: - Candle nut - Coconut etc 2. Essential Oils: - Sandalwood oil - Ylang-ylang oil etc 3. Soaps: - Coconut - Herbs etc 4. Dyes etc: - Java cedar - Indian mulberry etc	N/A	N/A
7 th	Traditional Medicines	- Sandalwood - Coconut - Kava etc	N/A	N/A
8 th	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A
10 th	N/A	N/A	N/A	N/A
TOTAL			.00	

2010	
Name of local currency	NZD

Category
Plant products / raw material
1 Food
2 Fodder
3 Raw material for medicine and aromatic products
4 Raw material for colorants and dyes
5 Raw material for utensils handicrafts construction
6 Ornamental plants
7 Exudates
8 Other plant products
Animal products / raw material
9 Living animals
10 Hides skins and trophies
11 Wild honey and beeswax
12 Wild meat
13 Raw material for medicine
14 Raw material for colorants
15 Other edible animal products
16 Other non-edible animal products

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m ³ u.b.)	
	Total wood removals	...of which woodfuel
1990	0	0
1991	0	0

1992	0	0
1993	5	5
1994	3	3
1995	3	3
1996	3	3
1997	3	3
1998	2	2
1999	1	1
2000	1	0
2001	1	0
2002	1	0
2003	1	0
2004	1	0
2005	1	0
2006	1	0
2007	1	0
2008	1	0
2009	1	0
2010	1	0
2011	1	0

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 1	Tier 1
Multiple use forest	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
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Production forest Multiple use forest	Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
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4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	N/A	N/A
Multiple use forest	In the Cook Islands all these tables serves as the same purposes either for conservation, protection, social services etc they are all the same and does the same responsibilities in uses.	N/A
Total wood removals	N/A	1994 removal of wood for woodfuel starts decreasing due to introduction of electrical, gas and solar appliances. Also the remove of wood for multiple uses e.g. crafts, local buildings etc decreased due to changes of life, european houses for water catchments etc.. The only tree removals were those that are fallen or blown over during cyclones etc.
Commercial value of NWFP	N/A	N/A

Other general comments to the table

The data used in the Cook Islands FRA 2005 report are the same data used above, no changes.

5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water (<i>sub-category</i>)	Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.
...of which coastal stabilization (<i>sub-category</i>)	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control (<i>sub-category</i>)	Forest area primarily designated or managed for desertification control.
...of which avalanche control (<i>sub-category</i>)	Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.
...of which erosion, flood protection or reducing flood risk (<i>sub-category</i>)	Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services.
...of which other (<i>sub-category</i>)	Forest area primarily designated or managed for other protective functions.
Ecosystem services, cultural or spiritual values	Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.
...of which public recreation (<i>sub-category</i>)	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration (<i>sub-category</i>)	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services (<i>sub-category</i>)	Forest area designated or managed for spiritual or cultural services.
...of which other (<i>sub-category</i>)	Forest area designated or managed for other ecosystem services.

5.2 National data

5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments

1	Cook Islands 4th National Report to the Convention on Biological Diversity. National Environment Service.	Marine and Forest	2011	25 current recorded Cook Islands Protected Areas which includes marine and nature reserves, wildlife and whale sanctuaries, national parks, water catchments, endanger species etc.
2	Cook Islands Biodiversity Strategy and Action Plan	Marine, Wildlife, Animals etc	20002	To equitably share the responsibility to conserve and use Biodiversity sustainably, and to equitably share the benefits.
3	Cook Islands Biodiversity Database	Local Plants and Animals	2003	The database presently has information on 4,500 existing species, native and introduced, including 2,500 with photographs to aid recognition. Original Database: http://cookislands.bishopmuseum.org.asp Emerging: http://cookislands.pacificbiodiversity.net/cibed/dbs/search.html A 2010 online article on the database is: http://ictupdate.cta.int/en/Feature-Articles/A-base-for-biodiversity-data
4	Ministry of Marine Resources (MMR)	Act	2005	The Acts defines the fishery waters of the Cook Islands as the internal waters, territorial sea and exclusive economic zone (EEZ).
5	Ministry of Agriculture (MoA)	Biosecurity Act 2008 Copra Act 1978 Wandering Animals Act (24 of 1976) Cook Islands Fruit Regulation 1965 (S.I. 146/1954) Regulation under Cook Islands Act 1915 for preventing growth and spread of noxious weeds, 1916, (as amended in 1927, 1931, 1933) Regulation under Cook Islands Act 1915 for the protection of indigenous and imported birds and to prevent the introduction of noxious animals and birds into the Cook Islands.	N/A	IPPC The International Treaty on Plant Genetic Resources for FAO Requires the development of national legislation and regulations needed to implement the treaty The Cook Islands has also signed, but not yet ratified, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity Agriculture Census2012.
6	Non-Government Organizations (NGOs)	N/A	N/A	Several of these organizations has been instrumental in the implementation of programmes such as the Protected Areas programme, (e.g. House of Ariki#, Koutu Nui##, WWF and Te Ipukarea Society).

5.2.2 Classification and definitions

National class	Definition
Cook Islands Biodiversity Database	The database development has three GOALS: # To record in a single database all local plants and animals with images and key identifications; # To record relevant traditional and scientific knowledge; and # To make this information available to the public to facilitate awareness and communication.
Endemic and Threatened Species	These endemic and threaten species are species of plants, wildlife etc. These are species of plants, wildlife etc that are of Cook Islands original and are being overused and starting or lost them. E.g. Rarotonga Acalypha (Acalypha wilder).
Protected Areas	Areas to sustainably protected or managed community resource areas.
Threats Analysis	This section describes the identified threats present and attempt to provide key necessary changes required to address these threats. E.g. Endangered species (invasive sp, pests and diseases etc)

5.2.3 Original data

Islands	Type	Name of Area	Total Area	Comments
Cook Islands Water	Whale sanction	Cook Islands EEZ	2m km ²	Established 2001 for the protection of whales.
Takutea	Wildlife sanction	Takutea Wildlife Sanction	120 ha	Established 1903, re-established in 1950 by Takutea Island Trust. Endorsed as a Community Conserved Area under the Atiu and Takutea Environment Regulation 2008. Inclusion of lagoon not determined.
Suvarrow	National Park	Suvarrow National Park	160 ha	Established in 1978 under the Prime Minister's Office. Inclusion of the lagoon not determined.

Rarotonga	Natured Conserved Area	Takitumu Conservation Area	155 ha	Established in 1996 under landowner committee to protect endangered native birds and their habitat. Family operated reserve containing natural features of cultural significance. Established in 2006 to allow the rejuvenation of natural resources. Established in 2007 to allow the rejuvenation of natural resources. Established 2000 for Public Recreation Established to allow the rejuvenation of natural resources Established in 1998 to allow the rejuvenation of natural resources. Established in 2006 to allow the
	Nature Reserved	Highland Paradise	32.5 ha	
	Marine Reserve	Aroa Raii	32.5 ha	
	Marine Reserve	Tokerau Raii	4 ha	
	National Park Reserve (Terrestrial)	Nikao Social Centre	?	
	Marine Reserve	Pouara Raii	5 ha	
	Marine Reserve	Aroko Raii	71.1 ha	
	Marine Reserve	Titikaveka Raii	?	
	Marine Reserve	Tikioki Raii	40 ha	
	Community Managed Area	Takuvaine Water Catchment	229 ha	

Aitutaki	Marine Reserve	O'otu Raii	220 ha	Established in 2000 as a 140 ha reserve, additional 70 ha included
	Marine Reserve	Motu Kitiu Raii	407 ha	Established in 2000 as a 210 ha reserve, additional 197 included as restricted entry zone
	Marine Reserve	Maina Raii 1	128 ha	Established in 2000 as a No Entry reserve. Predominantly reef flat
	Marine Reserve	Maina Raii 2	81 ha	Established in 2000 as a Restricted Entry reserve, 80 ha is inclusive of lagoon

Pukapuka	Marine and Terrestrial Reserve	Motu Kotawa	90 ha	Reserved for Yato village, inclusive of entire islet and surrounding lagoon
	Marine and Terrestrial Reserve	Motu Ko	300 ha	Reserved for Ngake village, inclusive of entire islet and surrounding lagoon
	Marine and Terrestrial Reserve	Motu Uta	50 ha	Reserve for Roto village, inclusive of 30% of the islet and surrounding lagoon
	Marine and Terrestrial Reserve	Motu Niua	10 ha	Reserved for Yato village
Mitiaro	Wetland	Te Roto Nui	?	Reserved for habitat protection and rejuvenation of freshwater eels (<i>Anguilla obscura</i>)
Rakahanga	Lagoon	Te Taha ki Raro	?	
	Marine Reserve	Paerangi	?	
	Marine and Terrestrial Reserve	Te Kainga	?	

Manihiki	Salt-mash lakes	Lake Porea and Tepuka Roto	?	Traditional breeding and raising for Milkfish (<i>Chanos chanos</i>) to supplement food supply during dried period.
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5.3 Analysis and processing of national data

5.3.1 Adjustment

On Analysis and Processing of National Data:

This report is presented in 4 chapters;

Chapter 1 provides background on the processing of developing the Cook Islands National Biodiversity Strategy and Action Plan (NBSAP). The Cook Islands was one of the first countries to commit to the United Nations Convention on Biodiversity (CBD) by signing it at the Earth Summit in 1992, and the NBSAP was one of the first to be completed for the Pacific region. The NBSAP was prepared based on feedback from stakeholder workshops. However, progress on implementation of the NBSAP has been limited, and significant progress has been made only in several areas in regard to meeting the targets of the CBD.

Chapter 2 deals with progress on implementation of the NBSAP. The most significant achievement has been the improvement in the status of threatened species, and this target has been achieved through the upgrading of the Rarotongan Flycatcher (*Pomarea dimidiata*) from critically endangered on the IUCN red list of threatened species, in addition to this a number of other targets has been partially achieved. The Cook Islands Biodiversity Database, listing the country's biodiversity is a significant and on-going step towards achieving article 7 of the CBD.

Chapter 3 relates to mainstreaming of biodiversity consideration throughout both Government and Non-government Institutions (NGOs). This was attempted through the incorporation of the NBSAP into the National Environment Strategic Action Framework (NESAF) and the subsequent inclusion of the NESAF into the National Sustainable Development Plan (NSDP). Despite this, the policy framework did not translate to on the ground mainstreaming of biodiversity concerns. A table is presented showing the role of various institutions in biodiversity.

Chapter 4 looks at the CBD targets, and shows the status of the Cook Islands in meeting these targets. Success has been achieved in relation to Goal 2, promoting the conservation of species diversity. Areas where achievements have not met the targets include present coverage of protected areas, and effective mainstreaming of biodiversity. Another area where more effort is required is in the formulation and implementation of the effective management plans for major alien species that threaten ecosystems, habitats or species.

Adjustment

Though many targets have not been met, overall the Cook Islands have made considerable progress towards meeting their obligation under the CBD. The main problem lies not with lack of progress, but in trying to find where this progress has been made. There is need to improve the monitoring and evaluation system in order to identify progress. The preparation of a report such as this should be an on-going activity, with progress against goals recorded as it is made. This will make the preparation of future reports much more straightforward, and easily completed using the capacity within the National Environment Service (NES).

5.3.2 Estimation and forecasting

- Fresh water Ecosystems

Saltwater intrusion and shifting rainfall patterns present a real threat to freshwater ecosystem. The Cook Islands has few standing-water lakes while most streams are ephemeral, relying on seasonal rain. Tying in climate change changing rainfall patterns and increased temperatures can place these ecosystems at greater risk of decline. These changes often result in increased algal growth which further impacts upon species within this ecosystem. The Cook Islands has many wetlands, with terrestrial freshwater swamps and bogs forming the majority of wetlands. These are very important ecosystems for the various functions they provide in terms of pollution filtration and food resources

- Agriculture and Food Security Ecosystem

Cook Islands rely on all ecosystems for agricultural and food security purposes. Fish are caught off-shore, shellfish are gleaned from reefs and lagoon flats, taro (*Colocasia esculenta*) is cultivated in wetlands and Nu (*Cocos nucifera*) and Kuru (*Artocarpus altilis*) are gathered from agricultural floodplains and flatlands while the fruit are harvested from mountain slopes. In addition the human needs, these ecosystems provides for an assortment of plants and animals. All ecosystems provides some food resource to some, if not all, species therefore the protection of ecosystems for food security needs to be a priority concern. Food sources predominantly seasonal and therefore anything that affects temperature and rainfall will ultimately impact on food security. Saltwater intrusion into wetlands will destroy taro crops as well as species that keep taro free from pests. Increasing ambient temperatures will force ocean thermo clines to migrate; it can also push terrestrial stratification layers upwards allowing new species to colonise higher into the mountains. Impacts in coastal areas are reducing the availability of food sources from this ecosystem as pristine or sustainable coral reefs continue to decline. Along with this is the erosion traditional knowledge and practices on land tilling, identification of famine crops and food preservation methods.

- Native Terrestrial Ecosystem

Tropical cyclones are a regular natural occurrences in the Cook Islands results in destruction of many species. As a result of the destruction, native habitats are opened up and invasive alien species quickly moved in and establish. This has been the many explanation for how species such as Balloon Vine (*Cardiospermum grandis*) and Mile-a-minute (*Mikania micrantha*) have rapidly dispersed and established themselves. The Balloon Vine was first recorded in Avarua, Rarotonga in the 1930's, today the species is present in all habitats from the coast to the peaks of several mountains. Although the endemic Mato (*Homalium acuminatum*) has evolved to cope and take advantage of disturbances resulting from cyclones but with the introduction of these vine species, the

opportunities for Mato expansion have reduced. With the additional impacts of coastal inundation and higher than expected King Tides, these addition can exacerbate the current problems faced by all ecosystem.

Like coastal and wetlands areas, the lowlands, foothills and mountainous area are threatened by expanding residential areas. The urban bowl sprawl into the interior is opening up native forest to the threats of invasion. The excavation of mountain slopes for buildings platforms and the development of access roads to these sites has created the necessary disturbance to allow invasive species to entre and in some cases the machinery carrying out this work has provided the transportation vector which brings these invasive species.

Feral goats and pigs are particular concern which feeds in the forests. There has been a noticeable decline in medicinal herb species from this ecosystem which further diminishes the ability to practice and pass on this traditional knowledge, in addition to medicinal species, economic plants such as the Maire (*Allyxia* sp) are also on a decline due to the threat from feral animals, over-harvested etc.

- Biodiversity Capacity Gaps

The key biodiversity thematic areas identified are:

- Biodiversity Conservation
- Species Management
- Invasive Species
- Ecosystems Management
- *Ex-situ* conservation
- Biosafety and Biosecurity
- Equitable Sharing of Benefits and Access to Biodiversity
- Mainstreaming Biodiversity
- Management of Knowledge related to Biodiversity
- Education Awareness and Training

5.3.3 Reclassification

(Table 37: Summarised table of the Roles and Legal Instrumental of Biodiversity Stakeholders in the Cook Islands. *Source: (de Romilly, Manarangi-Trott, Matepi, & Tiraa-Passifield, 2006).*)

Institution	Legal Status	Management Framework	Current Status
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<p>National Environment Service (NES)</p>	<p>Environment Act 2003</p>	<p>Implementing agency administering Environment Act 2003</p>	<p>The following provisions of the Act relate to the conservation and management of flora and fauna:</p> <p>§ Protected species – Designating animals and plants as protected species for the purpose of this Act;</p> <p>§ Providing for the protection, conservation and management of wildlife, protected species, or both;</p> <p>§ Regulating or prohibiting trade and commerce in wildlife, protected species, or both;</p> <p>§ Protected areas – Establishing Protected Areas (which may include any protected areas notified under section 41) and regulating or prohibiting activities within these protected areas.</p> <p>The NBSAP add on was the latest major biodiversity programme within NES. To a lesser degree other projects and programmes also deal with flora and fauna such as compliance, education and International Waters Projects.</p>
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<p>Natural Heritage Trust</p>	<p>The Cook Islands Natural Heritage Trust Act 1999 established the Cook Islands Natural Heritage Trust</p>	<p>The Act provides the necessary resources and powers to investigate, identify, research, study, classify, record, issues, preserve and arranged publications, exhibitions, displays and generally educate the public on the science of, and traditional practices and knowledge relating to, the flora and fauna of the Cook Islands.</p>	<p>The goal is to encourage the protection of the natural environment and associated traditional knowledge by an increase awareness of Cook Islands plants and animals, and related traditional and scientific knowledge.</p> <p>Its policy objective is to collect and preserve scientific and traditional information on plants and animals, and make this information available to the public.</p> <p>The Cook Islands Biodiversity data base is the principal source of information of plants, animals, including marine species in the Cook Islands.</p>
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<p>Ministry of Agriculture (MoA)</p>	<p>The Ministry of Agriculture Act of Parliament in 1978.</p> <p>Biosecurity Act 2008</p>	<p>The Act defines the functions of the Ministry.</p> <p>The Act prevents, controls, regulates animals and plant pests and diseases into the Cook Islands.</p>	<p>The principal aim of the MoA is to maximize exploitation of the potential in agriculture to advance the economic, social and environment aspiration of the country.</p> <p>Biosecurity and quarantine are the main areas where agriculture has a role in flora and fauna conservation.</p>
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<p>Ministry of Marine Resources (MMR)</p>	<p>Marine Resources Act of 2005</p> <p>Signatory to West and Central Pacific Fisheries Convention (WCPFC)</p>	<p>Responsible for fisheries management and development</p>	<p>The MMR's role is primary monitoring, advisory, consultative and regulatory in nature. Its programmes are closely linked with those islands and communities that have significant marine resources and sectors exploiting or utilizing the resources.</p> <p>The Ministry provides technical assistance in water quality testing, monitoring of marine <i>raui</i> on Rarotonga and Aitutaki and preparation of management plans for the sustainable development of marine resources.</p> <p>As a member of WCPFC, MMR is responsible for applying agreed Conservation and Management Measures (CMMs) related to highly migratory fish stocks, particularly tunas, billfish, sharks and turtles.</p>
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Koutu Nui	The Koutu Nui was established under the House of Ariki Act 1966.	A separate advisory body for traditional leaders. Concerned with: environment, land preservation and conservation of resources (especially biodiversity), and the welfare of the people.	Initiated the reintroduction of the <i>raui</i> around Rarotonga lagoon. Koutu Nui has frequently expressed interest in strengthening the <i>Raui</i> .
Cultural and Historic Places Trust	Cultural and Historical Places Act (40 of 1994-95)	Responsible for the designation and protection of cultural and historic sites. Administered by the Ministry of Culture Development (MCD)	No requirement that conservation and management plan be developed and implemented for any historic place under the control of the Trust.
Outer Islands	The Outer Islands Local Government Act 1987 Island Councils by-laws.	Island Councils enforces any by-laws they have made related to conservation.	The Island Council has the mandate authority to enact environmental management by-laws. However, the current bureaucratic system of enacting by-laws combined with Island Councils lack knowledge on procedures has resulted in very few new strictly environmental by-laws being established.
National Research Committee (NRM)	No legal mandate	The Office of the Prime Minister (OPM) is the Secretary for the National Research Committee (NRM)	The NRM grants and maintains a registry of research activities being undertaken in the Cook Islands. Any study relating to biodiversity requires permit from the NRM to undertake such research.


Cook Islands Research Association (CIRA)	Established in 2007 as an Incorporated Society	It has a President and two Vice-Presidents, a Secretary and treasurer and they have for the Executive Committee who makes the decisions and plans of the organisations	Have an annual conference where invites local and visiting researchers to present their work. Have attracted up to 200 members.
Te Ipukarea Society (TIS)	Cook Islands Incorporated environment (NGO)	The operation of TIS is governed by a constitution. The executives committee is the decision making body.	TIS are active in the areas of advocacy, public education and awareness, campaigns, biodiversity, waste management, climate change and coastal management. Recently obtained funding under the Critical Ecosystem Protection Fund for a coordinator and activities related to bird conservation.
Takitumu Conservation Area (TCA)	A conservation committee of representatives of three landowning families. A resource owners association not incorporated.	The TCA is an area managed by representatives of the three land-owning families and administered by a TCA manager.	Main activities are currently the Kakerori Recovery Programme (KRP) which operates from August to March each year and ecotourism nature walks. Funds for a coordinator help in the management of the TCA and implementation of the KRP.

Cook Islands National Council of Women	Incorporated under the Incorporated Societies Act 1984	The operation of the Organisation is governed by its Constitution. It has a President, 2 Vice-Presidents, a general Secretary, general Treasurer, and Trustees. It is an umbrella Organisation.	<p>The Organisation has 26 members and affiliated members. It has recently assisted one of its members to apply for funding from the Global Greengrant Fund to put together a project proposal to obtain Taro shoots from SPC gene bank in Fiji.</p> <p>The organisation also supports its members in activities that ensure sustainability of crafts resources.</p>
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5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
CFRQ	Protection of soil and water	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which production of clean water	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which coastal stabilization	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which desertification control	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A

	... of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A
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Other

The above Table 5a is very hard to calculate the area of each category due to the islands formation, and lack of forest inventory etc. In the starting of this report I reported about the islands of the Cook Islands; Rarotonga a volcanic island, Mangaia, Atiu, Mauke and Mitiaro raised makatea islands similar to Niue, Palmeston, Penrhyn, Manihiki, Rakahanga, Pukapuka, and Manuae are all atolls, Nassau and Takutea are sand cays and Aitutaki all-most atoll. So the only island I can fill in is Rarotonga. On the atolls the forest area does all the things a forest does, e.g. foreshore protections, windbreaks, art & craft, buildings, hosts to animals and birds, etc.

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	N/A	N/A	N/A
...of which public recreation	N/A	N/A	N/A	N/A	N/A
...of which carbon storage or sequestration	N/A	N/A	N/A	N/A	N/A
...of which spiritual or cultural services	N/A	N/A	N/A	N/A	N/A
...of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	N/A	N/A
Ecosystem services, cultural or spiritual values	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
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Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	Work carried out by the Ministry of Agriculture (MoA) by means of planting trees etc for soil erosion.	On-going programme
Production of clean water	Ministry of Infrastructure and Planning (MOIP), National Environment Services (NES), Ministry of Agriculture (MoA), and Ministry of Health (MoH) & Non-Government Organisations (NGOs) have programme in place to get the production of clean water to all households.	On-going programme
Coastal stabilization	MoA, MIOP, NES, Natural Heritage, & NGOs.	On-going programme
Desertification control	MoA & NES	On-going programme
Avalanche control	NES, MoA, MOIP, Natural Heritage, NGOs	On-going programme
Erosion, flood protection or reducing flood risk	As above	As above
Other protective functions	As above	As above
Ecosystem services, cultural or spiritual values	As above	As above
Public recreation	As above	As above
Carbon storage or sequestration	As above	As above
Spiritual or cultural services	As above	As above

Other ecosystem services	As above	As above
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Other general comments to the table

The above ministries are actually carrying out on-going programme to control the above categories to stop from expanding further.

6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

6.1 Categories and definitions

Category	Definition
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

6.2 National data

6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	BROWN. C. 1997. Regional Study- the South Pacific: Asia-Pacific forestry Sector Outlook Study Working paper Series, WP No. APFSOS/WP/01, FAO, Rome.	Forest categories	1996	N/A
2	Agroforestry Guides for the South Pacific by ELEVICH. R. Graig and WILKINSON. M. Kim.	Pacific Forest trees and their uses	1997	Agroforestry has been practiced in the Pacific islands for thousands of years. The continued appropriate and well-managed use of trees in agricultural systems can serve as an effective component for sustainable economic development and environmental protection in the region. This guide describes practical resources and information materials for Pacific Islands agroforestry practitioners.

3	Cook Islands Biodiversity Database by The Cook Islands Natural Heritage Project.	Names of trees	2000	The Cook Islands Biodiversity Database is a concise multimedia collection of all known Cook Islands species, designed to eventually include the country's entire biodiversity. The database currently contains 4,500 records with 2,500 of those records including standardised images to aid recognition. It has been online since 2003.
4	Short Term Consultancy Assignment to the Island of Mangaia, Cook Islands by Hans Christoph Jahn – Funded by SPC/GTZ	A baseline study about attitudes regarding Trees	2001	The objectives of this report is : 1. To contact the Cook Islands Authorities for the implementation of forest related activities; 2. to visit the island of Mangaia and in particular to gather information about forestry conditions with the main aim to come up with recommendations for a future sustainable and nature-oriented management planning.
5	Cook Islands 4th National Report to the Convention on Biological Diversity 2011. By the National Environment Service (Tu'anga Taporoporo)	Overview of Biodiversity Status, Trends and threats etc	2011	This report is presented in four (4) chapters: Chapter 1: provides background on the process of developing the Cook Islands National Biodiversity Strategy and Action Plan (NBSAP); Chapter 2: deals with progress on implementation of the NBSAP; Chapter 3: relates to mainstreaming of biodiversity considering throughout both Government and non-government institutions; Chapter 4: looks at the United Nations Convention on Biodiversity (CBD), and shows the status of the Cook Islands in meeting these targets.

6.2.2 Classification and definitions

National class	Definition
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Protected Areas	Areas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means; (1). TAKUTEA WILDLIFE SANCTUALLY, 120 ha, Established 1903-reestablished 1950 under the Takutea Island Trust. (2). SUWARROW NATIONAL PARK, 160ha, established 1978 under The Prime Minister’s Office, Rarotonga. (3). TAKITUMU CONSERVATION AREA, 155ha, (Endangered native bird Kakerori) established 1996. (4) HIGHLAND PARADISE, Nature Reserve, 32.5ha, Established 2001, Family operated. (5). NIKAO SOCIAL CENTRE, National Park Reserve, 1.2ha, Established 2000 for Public Recreation. (6). TAKUVAINE WATER CATCHMENT, 229ha, Established 2006, Community Managed Area. (7). MOTU KOTAWA, Marine and Terrestrial Reserve, 90ha, Reserved for Yato village, inclusive of entire islet and surrounding lagoon. (8). MOTU UTA, Marine and Terrestrial Reserve, 50ha, Reserved for Loto village, inclusive of entire islet and surrounding lagoon. (9). MOTU NIUA, Marine and Terrestrial Reserve, 10ha, Reserved for Yato village. (10). MOTU KO, Marine and Terrestrial Reserve, 300ha, Reserved for Ngake village, inclusive of entire islet and surrounding lagoon. (11). TE ROTO NUI, Wetland, Reserve for habitat protection and rejuvenation of freshwater eels (<i>Anguilla obscura</i>) (12). LAKE POREA and TEPUKA ROTO, Salt-marsh lakes, Traditional breeding and raising ground for Milkfish (<i>Chanos chanos</i>) to supplement food supply during periods of rough seas. (13). Mainly 12 Marine Reserves all round the Cook Islands. (Rarotonga, Aitutaki, Rakahanga) and One Whale Sanctuary, (Cook Islands EEZ), 2 million km ² , Established in 2001 for protection of whales.
Conservation of Biodiversity	Forest is designated primary for conservation of biological diversity. Includes but is not limited to areas designated for diversity conservations with the protected areas:
N/A	N/A
N/A	N/A

6.2.3 Original data

(See 4.2.3)

Tropical cyclones are a regular natural occurrences in the Cook Islands which results in the destruction of many species. As a result of the destruction, native habitats are opened up and invasive alien species quickly moved in and establish. This has been the main explanation for how species such as Balloon Vine (*Cardiospermum grandis*) and Mile-a-minute (*Mikania micrantha*) have rapidly dispersed and established themselves. The Balloon Vine was first recorded in Avarua, Rarotonga in the 1930’s, today the species is present in all habitats from the coastal to the peaks of several mountains. Although the endemic Mato (*Homalium acuminatum*) has evolved to cope and take advantage of disturbances resulting from cyclones but with introduction of these vine species, the opportunities for Mato expansion have reduced. With the addition of climate change induced factors we can expect frequencies and intensities of tropical cyclones with additional impacts of coastal inundation and higher than expected King Tides, these additions can exacerbate the current problems faced by all ecosystems.

Like coastal and wetland areas, the lowlands, foothills and mountainous areas are threatened by expanding residential areas. The urban sprawl into the interior is opening up native forest to the threats of invasion. The excavation of mountain slopes for building platforms and the development of access roads to these sites has created the necessary disturbance to allow invasive species to enter and in some cases, the machinery carrying out this work has provided the transport vector which brings these invasive species.

Feral goats and pigs are of particular concern mainly on Rarotonga, Mangaia Mauke Atiu and Mitiaro which feed in the Makatea forests and some forest areas.

6.3 Analysis and processing of national data

6.3.1 Adjustment

National Environment Services (NES)

Ministry of Agriculture (MoA)

6.3.2 Estimation and forecasting



National Environment Services (NES)

6.3.3 Reclassification

National Environment Services (NES)

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	0	0	0	0	0
	Forest area within protected areas	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 1	Tier 1
Forest area within protected areas	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> • Conservation of biodiversity • Forests within protected areas 	Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	N/A	N/A
Forest area within protected areas	N/A	N/A

Other general comments to the table

The Programme of Work for Protected Areas (PoWPA) falls under the Convention for the Biological Diversity (CBD). All signatories including the Cook Islands agreed to effectively conserve 10% of the terrestrial habitat 2010 and marine by 2012. Protected Areas conservation may take on several meanings: from 'no-take' areas to sustainably managed community resources areas. In 2010 the Cook Islands had thirteen (13) Protected areas in the World Database on Protected areas. This database contains a number of inaccuracies, omissions and repetitions in relation to the Cook Islands. The Cook Islands National Biodiversity Strategy and Action Plan (NBSAP) document records 22 known Protected Areas, which cover a total area of 17.5 square kilometres. Saul and Tiraa listed 36 Protected areas while the CRISP Report lists a total of 39 marine Protected areas alone, though a number of these were no longer functioning###. Because no systematic data is available, there may also be other Protected areas that exist in the country, but remain unidentified. Traditional leaders, Islands Councils, landowners, communities and government have all played roles in establishing and managing protected areas in recent years. From a number of possible sorts of protected areas in the Cook Islands at present there are six types: rahui, private nature reserves, conservation areas, wildlife sanctuary, national park, and whale sanctuary. Except for rahui, most types are represented by a single example. The majority of protected areas in the Cook Islands consist largely of areas not covered by legislation, although there are several that are legislated for or some means of protection given, these includes; Suwarrow National Park Declaration, Takutea Island Regulations, Takuvaine Water Catchment Regulations, National Whale Sanction Declaration, Rakahanga rahui by-laws, Aitutaki Motu Kitiu and Ootu Marine Reserves.

7. What is the area of forest affected by woody invasive species?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

7.1 Categories and definitions

Category	Definition
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.

7.2 National data

7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Cook Islands Biodiversity Strategy and Action Plan	Plants, Animals and Marine	2002	The Cook Islands signed the Convention on Biological Diversity at the Earth Summit in 1992. As a party of the Convention, the Cook Islands Government committed itself and its people to conserve its Biodiversity, to use it in a sustainable manner, and to share its benefit in an equitable manner. It also committed itself to control invasive species (the weeds and pest animals in natural ecosystems and agricultural systems), and to reduce the likelihood of future invasions.
2	Cook Islands 4th National Report to the Convention on Biological Diversity. National Environment Service.	Plants, Animals and Marine	2011	This report focuses on the threats to our Biodiversity, while at the same time highlighting some of our successes. We are now better positioned to provide direction as well as coordinate national programme for the protection of our environment through mainstreaming the National Biodiversity Strategy and Action Plan (NBSAP) into the National Sustainable Development Plan (NSDP).

3	Cook Islands Thematic Assessment Report. Biodiversity, Climate Change and Land Degradation. National Environment Service.	N/A	2007	This document is prepared for a multitude of stakeholders at the local, national, regional and international level. The term “stakeholder” refers to a person, group, organisation, etc, that has an interest or will be affected by actions or initiatives in different areas. The types of stakeholders affected in the National Capacity Self Assessment (NCSA) process will depend on which thematic area is being addressed in each section. For example, the stakeholders affected under Mitigation of Climate Change, will not necessary be the same as stakeholders affected by Adaptation.
4	N/A	N/A	N/A	N/A

7.2.2 Classification and definitions

National class	Definition
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or not likely to cause, socio-cultural, economic or environmental harm or harm to human health.
N/A	N/A
N/A	N/A
N/A	N/A

7.2.3 Original data

We did not do any survey on the area affected by these woody invasive species, but on the islands in the Southern Cooks (Rarotonga, Mangaia, Aitutaki, Atiu, Mauke and Mitiaro I would say about 25-40% and increasing. (***Acacia mangium***, ***Albizia species***, ***Syzygium cumini*** and ***Spathodea campanulata***) Some of these islands have started cutting some of these trees down for agriculture land use and some are finding ways of using them for making crafts etc. Some of these trees are useful trees but we don't know how to extract their usefulness e.g. ***Acacia mangium*** oil etc. ***Syzygium cumini*** is a fruit tree and fruits are good for making jam etc and timber for wood burning etc.

Community identified invasive plant species (species considered most serious are **printed in bold type**).

Type	Scientific Name	Common Name	Islands Present
Creeper	<i><u>Cardiospermum grandiflorum</u></i>	Balloon vine	1
Creeper	<i><u>Mimosa pudica</u></i>	Sensitive weed	3
Creeper	<i><u>Mimosa invisa</u></i>	Giant Sensitive weed	1
Creeper	<i><u>Mikania micrantha</u></i>	Mile-a-minute	3
creeper	<i><u>Passiflora rubra</u></i>	Red Passionfruit vine	3
Shrub	<i><u>Lanata camara</u></i>	Lanata	5
Tree	<i><u>Syzygium cumini</u></i>	Java plum	2

Creeper	<u><i>Derris malaccensis</i></u>	Derris	6
Creeper	<u><i>Centrosema pubescens</i></u>	Centro vine	1
Creeper	<u><i>Merremia peltata</i></u>	Peltate Moring-glory	2
Fig	<u><i>Ficus benamina</i></u>	Benjamin fig	1
Grass	<u><i>Sorghum bicolour</i></u>	Grain sorghum	4
Grass	<u><i>Cenchrus echinatus</i></u>	Burr grass	5
Grass	<u><i>Elephantopus spicatus</i></u>	False Elephant's foot	3
Grass	<u><i>Elephantopus mollis</i></u>	Elephant's foot	5
Grass	<u><i>Paspalum conjugatum</i></u>	T-grass	2
Grass	<u><i>Brachiaria mutica</i></u>	Para grass	2
Grass	<u><i>Panicum maximum</i></u>	Guinea grass	1
Grass	<u><i>Chrysopogon aciculatus</i></u>	Cling grass	2
Grass	<u><i>Cyperus rotundus</i></u>	Nut sedge/grass	3
Grass	<u><i>Eleusine indica</i></u>	Wiregrass	1
Grass	<u><i>Sporobolus pyramidallis</i></u>	Tall smut-grass	1
Plant	<u><i>Bidens pilosa</i></u>	Beggar's stick	3
Plant	<u><i>Solanum capsicoides</i></u>	Spiny Necklace-berry	1
Plant	<u><i>Xanthium purgens</i></u>	Cocklebur	1
Plant	<u><i>Desmodium incanum</i></u>	Spanish clover	2
Plant	<u><i>Ruellia prostrate</i></u>	Creeping Ruella	1
Plant	<u><i>Indigofera suffruticosa</i></u>	Indigo	2
Plant	<u><i>Indigofera suffruticosa</i></u>	Tropical kudzu	2
Plant	<u><i>Pueraria phaseoloides</i></u>	Sickle pod	1
Plant	<u><i>Senna obtusifolia</i></u>	Leaflet Taro-vine	1
Plant	<u><i>Syngonium augustatum</i></u>	Cassytha	1
Plant	<u><i>Cassytha Filiformis</i></u>	Capparis	1
Plant	<u><i>Capparis cordifolia</i></u>	Red canna	1
Plant	<u><i>Canna indica</i></u>	Dodder	1
Plant	<u><i>Cuscuta capensis</i></u>	Yellow nicker	1

Review of progress towards Goals B and B2 of the Invasive Species Management theme of the Cook Islands NBSAP.

Theme B. Invasive species management			
Goal B1: Reduce the adverse impacts of invasive species on indigenous species and ecosystems, and prevent new invasions			
Goal B2: Reduce the adverse impacts of invasive species on agricultural species and ecosystems, and prevent new invasions			
ACTIONS	OUTCOMES	INDICATORS	COMMENTS
<p>1. Develop a programme involving all islands to survey invasive species in natural ecosystems and in the agro-ecosystem.</p>	<p>Survey and assessment of invasive plants completed#.</p> <p>MoA has a Research Division which maintains a database of agricultural pests, primarily insects, including invasive species.</p> <p>Nothing initiated for marine invasives.</p> <p>A report completed by Anau Manarangi under the NBSAP add-on##.</p>	<p>Distributions and abundance survey of the common myna bird on Rarotonga###.</p> <p>A survey and reducing the impact of invasive alien species on Rarotonga, Aitutaki, Atiu, Mauke and Mitiaro##</p>	<p>· This survey report covers the Southern Group only, and lists 18 terrestrial species mainly plants, marine invasives are not included.</p> <p>· It is expected that the data MoA pest database will be included in the Cook Islands Biodiversity database once the revisions to this have been completed, and it is open again for data input.</p>

<p>1. Develop a community-based programme to eradicate those invasive weeds and animal pests that are not yet widespread on particular islands.</p>	<p>Started</p>	<p>Progress reports.</p>	<ul style="list-style-type: none"> · Some work undertaken on invasive weeds on Aitutaki, Mangaia, Mauke, and Mitiaro but lack of follow-up and monitoring means current status unknown. · Myna birds reduction programme for Atiu.
<p>1. Develop national programmes to assist with control of the more serious invasive weeds and animal pests in both natural and man-modified ecosystems.</p>	<p>Biosecurity Act 2008</p>	<p>19 staff employed by MoA on biosecurity related issues.</p>	<ul style="list-style-type: none"> · Biosecurity is regulated through the Biosecurity Act 2008, and administrated through the Biosecurity Service of the MoA. Though there are some regulations related to Marine Biosecurity, these are much more difficult to enforce, e.g. discharge of ballast water potentially containing invasive species.

<p>1. Undertake a multisectoral review of the control of transboundary and inter-island movement of terrestrial and marine plants and animals and of LMOs/GMOs with a view of establishing an independent Biosecurity Agency.</p>	<p>Biosafety in regard to GMOs and LMOs received very little attention in the Act. There was a huge contention with the regional support received by the Cook Islands in addressing GMOs or LMOs at the national level. Cook Islands were concerned with lack of capacity to implement various instruments and suggested the incorporation of LMOs into the Biosecurity regime, and to adapt the processes of the Cartagena Protocol to Biosecurity. The recommended “model” legislation for Biosecurity was unable to accommodate this request. However the definition for “organisms” in the Biosecurity Act 2008 is at attempt to widen its scope to include LMOs, but process for Risk Assessment Management, Prior Informed consent and Precautionary principle, to name a few are limited</p>	<p>A report of a Survey of Baseline Information for Assessing the Capacity Building Needs of the Cook Islands for the Safe Management of GMOs has been completed.</p> <p>A legislative review for a National Framework on Biosecurity completed####</p>	<p>· Further progress not achieved.</p>
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(Space & Flynn,
20020 ## (Manarangi, 2004) ###
(J.Mitchell, 2009) ## (Manarangi,

2004 and Manarangi & Wigmore, 2002)

#(Turia, 2004)

(Teariki Rongo, 2004)

7.3 Analysis and processing of national data

7.3.1 Adjustment

On Analysis and Processing of National Data:

The Cook Islands multimedia biodiversity data base has been online since 2003, and it presently has information on 4,500 existing species, native and introduced, including 2,500 with photographs to aid recognition. Well known groups, such as birds, lizards, fishes, flowering plants and ferns are essentially complete. The data base increasingly fulfils the Cook Islands commitment to develop inventories of its biodiversity, as required under Article 7 of CBD. The Cook Islands Biodiversity Database with information provided by Gerald McCormack, Director, Cook Islands Natural Heritage Trust.

The database and website

The database development has three goals:

- To record in a single database all local plants and animals with images and key identification features;
- To record relevant traditional and scientific knowledge; and
- To make this information available to the public to facilitate awareness and communications.

This approach has three proposed advantages:

- The public would need to master only one system of information retrieval and presentation;
- Multi-taxon groupings, such as all endemics or invasive of an island, would be in the same system; and
- Popular groups, such as birds, fishes and ornamental flowers, would help to carry and open the door to less popular groups, such as insects, echinoderms and ferns.

Accessibility

Using the online database is dependent on student and the general public having access to computers and the internet. All schools have now computer room, and computers are becoming more common with the general public. Internet access is also becoming more widespread and affordable, although the slow connections and high costs within the Cook Islands continue to be an obstacle to browsing a complex multimedia database on the Internet. To meet this challenge the website and database are also available on a dynamic CD provided free to local schools.

Challenges

The basic challenge is to find and photograph the 2000 species already recorded but lacking photographs; and then to find, identify, and photograph the estimated 3,000 local species that are not yet recorded in the database.

Although the present online database is remarkable achievement for a small island development state (SIDS), a decision was made in 2007 to correct an underlying flaw in the data structure, to move, to open source software, and to make the database online editable. This undertaking has been especially challenging because of the lack of funding and a dependence on volunteer programmers. As a result, although the original database remains online, it has been closed for data updates since mid-2007. Since then, there has been a considerable amount of

research and new data collected by ministries and researchers, which has not been included in the database. It is hoped that the new Cook Islands Biodiversity database will be online for the public in early 2011 – and then the real work of adding this and other data can continue. With online editing more people will be available to assist as registered editors, or by uploading information and images through a moderation system.

Original database: <http://cookislands.bishopmuseum.org/search.asp>

Emerging: <http://cookislands.pacificbiodiversity.net/cibed/dbs/search.html>

A 2010 online article on the database is: <http://ictupdate.cta.int/en/Feature-Articles/A-base-for-biodiversity-data>

Adjustment

The database has three basic components of the front-end interface, which are:

- the **Search Page** allows the user to find a species by typing in the first part of one of its names in Latin, English or Maori. The species are arranged in a hierarchical system of taxonomy and the names of higher taxa or ranks such as *Cocos nucifers* or coconut are also searchable. Multiple names can be input with semicolons operators to find multiple species or higher taxa and allow for spelling uncertainties. Although Cook Islands Maori is often written with standard letters only, there is a character input to enable searches using modern orthography with macron-verbs (##### - è#) for long-vowels and the left-single apostrophe (#) for a glottal stop, as in k#k#pa and #ava#ava.
- To find an unknown animal the user can search for the group to which it belongs. This works well for well-known groups (such as butterfly, grouper or mammal) but it works poorly for larger taxa not easily divided into sub-groups, such as the 1200 local flowering plants. In the future, a system to find species by easily observed features, such as leaf shape and flower colour, will be developed so users with specimen-in-hand can find images of likely candidates.

B. the **Result Page**, the default results page has thumbnail images to facilitate direct visual recognition. The zoom system allows the user to zoom several different thumbnails for more detailed comparison.

On the right of the results page are more display options as well as vernacular names used by the various islands in the Cook Islands. The database records and maintains these differences between island dialects e.g. on the Rarotonga the White-tailed tropicbird is the *R#koa* while on the other islands it the *P#rake*, *Pirake*, or *Tavake Mokokoko*.

An alternate result page consists of one line text per species to provide a concise list. The list includes the scientific, English and the National Maori names along with the family name and concise English descriptor such as wasp, fern or seaweed. The group-descriptor is particularly useful for interpreting the diverse taxa found using the advanced search criteria menus.

C. the **Species Page** accessed by clicking the species name on the results page displays all the information available for a particular species. The lack of available biologists to input data has meant that species data is often inadequate. The primary drive has been to tabulate data on the social and biological significance to enable the advanced search criteria menus to find groups of special interest. The other species page priority after the standard primary image has been to list key identification features. There is also a distribution map showing known presence and known absence by island and although this data is reasonable comprehensive for

the larger or otherwise conspicuous terrestrial species it is woefully inadequate for many groups. There is still an immense amount of basic fieldwork required by Cook Islands Biodiversity.

7.3.2 Estimation and forecasting

7.3.3 Reclassification

Overview of Biodiversity and UNCBD Implementation in the Cook Islands

Stakeholder consultation combined with SWOT and Cap Analysis highlighted several areas with capacity gaps. Drawing on these results of the consultations, the NCSA Stocktaking report, and other national reports produced during the time of the NCSA project, Root Cause Analysis was used to define problem areas and determine detailed capacity gaps.

Many areas identified under biodiversity were found to be key crossing cutting environmental issues, and as such, will be analysed in the Cross Cutting Report. These include water resource management, integrated coastal zone management, waste, pollution and sanitation, and resource management. The remaining issues has been refined into six key thematic areas for further indepth analysis, including the broad grouping of issues under Biodiversity Conservation.

The key biodiversity thematic areas identified are:

- Biodiversity Conservation
- Species Management
- Invasive species
- Ecosystems Management
- Ex-situ and conservation
- Biosafety and Biosecurity
- Equitable Sharing of Benefits and Access to Biodiversity
- Mainstreaming Biodiversity
- Management of Knowledge related to Biodiversity
- Education Awareness and Training

Gaps identified during this process as cross-cutting capacity issues that also affect Climate Change and Land Degradation, have been transferred to the Cross Cutting Report. This includes capacity gaps in education and awareness, mainstreaming of environmental management, and information management and exchange.

1. Biodiversity Conservation

a. Species Management

§ **Summary of Capacity Gap** – A comprehensive assessment of the status of wildlife in the Cook Islands, including an inventory of threatened, vulnerable or endangered species is generally not available. The cessation of many monitoring, and data collection programmes, for species of significance, both terrestrial and marine, has meant that there is limited knowledge of biodiversity, habitats and ecosystems available. Much of the up-to-date collection of scientific data, data which could early indications of species decline and potential loss of biodiversity, is limited to those species that are considered of “economic value”.

§ Root causes:

§

§ Information of Cook Islands species, habitats and ecosystems, especially for those that may be threatened or endangered, is scattered, limited and does not provide a sufficient baseline

§ Limited integration of past research/studies into biodiversity conservation activities

§ Limited monitoring and case studies on local species, ecosystems and habitats

§ Lack of general public involvement in systematic observation

§ Very few local experts able and available to undertake biodiversity conservation work and severely limited

§ NGOs and community-based organisations have little capacity to carry out work in conservation management activities

§ Limited capacities to develop by-laws for conservation management as a mechanism for enforcement of traditional management systems

§ Actions:

§ Develop local capacity to carry out baseline studies of biodiversity in the Cook Islands and undertake comprehensive assessment of the status of our species, habitats and ecosystems

§ Develop and implement National Biodiversity Programmes to conserve all endemic flora and fauna, including rare plants used in Maori medicine, rare varieties of Agro-biodiversity species

§ Develop a programme to survey and conserve marine animals harvested for food or financial gain

§ Appropriate legal and institutional measures need to be established to promote and encourage private and community-based conservancy activities such as the Rau'i

§ Legislate the requirements for comprehensive assessment of the status of biodiversity in the Cook Islands (including population, distribution, coverage of flora, fauna and ecosystems) to gather baseline information and the periodic updating or collection of further inventories in cooperation with the Natural Heritage Trust and Island Environment Authorities and councils

§ Utilise the legal capacity of relevant agencies and regional/international assistance to develop appropriate biodiversity or environment management legislation through participatory approaches

§ Develop and strengthen the conservation management capacity of relevant organisations to enable them to effectively carry out the mandate provided under the Environment Act 2003, the National Biodiversity Strategy and Action Plan (NBSAP) and the National Environment Strategic Action Framework (NESAF).

2. Invasive Species Management

§ **Summary of Capacity Gap**

A key component to managing biodiversity is to manage the threats to that biodiversity, such as invasive species. Invasive have the potential to impact many sectors of society including agriculture, marine and human health, and as custodians of our endemic and native biological resources it is of utmost importance that we take action now to reduce the threats imposed by invasive species.

While border control procedures to minimise the introduction of new invasive species are in place, the necessary resources and personnel to be fully effective at the international and national levels are lacking, the necessary resources and personnel to be fully effected at the international and national levels are lacking. Border control covers the movement of passengers and cargo via air and sea transports and in addition to this they may manage waste s and water ballasts from these transports. Several initiatives have been implemented to educate and make the public aware of the risks involved in smuggling in plants from overseas undeclared however the problem continues highlighting the need to expand or alter the current education and awareness program. The sphere of invasive species management is vast and severely under resourced (especially human and financial) and as a result some invasive species populations has grown to the levels where eradication or even management is either impossible or well beyond our means, therefore a concentrated effort will be needed at the national, regional, and international arena to manage where we can.

§ **Root Causes**

§ Insufficient capacity for effective implementation of Biosecurity legislation and activities such as monitoring and management of ports for early detection and action against invasive and potentially species;

§ Current Border Control staff are limited and some are unskilled and have no scientific background;

§ Limited capacity to identify and carry out thorough risk assessments on potentially invasive species;

§ Limited capacity to respond to the threats posed by invasive species, particularly to identify, control eradicate and monitor invasive species to minimise their impacts on biodiversity resources;

§ Lack of policies and legislation prohibiting and preventing the movement of invasive species between islands of the Cook Islands (Internal Quarantine);

§ Ports lack capacity to control, or prevent movements of biomaterial between islands and internationally;

§ Limited coordination of efforts to eradicate invasive species;

§ Assessment of feasibility of eradication and control options of invasive species in the Cook Islands is limited as well as identified successful methods;

§ Communication between relative stakeholders related to invasive species is limited;

§ Limited awareness of how invasive species are introduced and spread within the Cook Islands;

§ Lack of awareness of the potential consequences of clearing vegetation in terms of the spread of invasive species further inland where the majority of our endemic and native species reside

§ Border Control and Ministry of Health (MoH) has yet initiate plans to minimise to risk of health impacts from events such as Avian Influenza or SARS – no plan of action has been prepared.

§ **Actions**

- § Strengthen Biosecurity and Border Control legislation if necessary for the effective monitoring, enforcement and management of invasive species, including procedures for risk assessments;
- § Develop the capacity of focal points to carry out thorough risk assessment including drawing on regional expertise for in-country training and resources;
- § Develop a system to undertake a risk assessment including terms of reference and criteria;
- § Strengthen links to the Pacific Invasive Learning Network (PILN) and Regional Invasive Species Programme (RISP);
- § Undertake a multi-sectoral review, in partnership with the private stakeholders, of the control of trans-boundary and inter-islands movement of terrestrial and marine flora and fauna with a view of developing legislation and strengthening the capacity of ports and focal points to implement;
- § Develop a programme involving all islands to survey invasive species in natural ecosystem and agro-ecosystem, and to display this information on a *Geographical Information System(GIS)* platform;
- § Develop the GIS capabilities of relevant stakeholders to produce spatial information for modelling and analysis of biodiversity and invasive species data;
- § Determine the feasibility of and priorities for eradication and control of invasive species;
- § Conduct trials/pilot projects to determine effective locally appropriate measures to eradicate or control invasive species;
- § Develop a national programme for invasive species based on pilot projects and feasibility studies for the eradication and control of invasive species in both natural and human-modified ecosystems;
- § Develop community-based programme to eradicate those invasive weeds and animal pests that are not yet widespread on particular islands;
- § Strengthen the capacity of focal points, NGOs; and communities to implement and monitor programmes including through ongoing training, resources and data management;
- § More stringent internal quarantine control measures need to be developed and implemented to protect the outer islands, particularly from invasive species that have not yet spread to these islands;
- § Develop media and communications strategies for greater exposure and awareness of invasive species issue to local communities and the risks of all invasive species be it plants, insects, diseases, viruses etc to the outer islands;
- § Provide better training programmes for all stakeholders to reduce spreading of invasive species e.g. cleaning of farm equipments.

3. Ecosystem Management

· Summary of Capacity Gap:

- § Human activities are having a major impact on ecosystems in the Cook Islands including changes in ecosystem structures and increasing degradation of resources. Encroachment and habitat loss is occurring on a

regular and progressive basis and highlights the insufficient measures in place to protect important terrestrial, reef and lagoon ecosystem;

§ Past approaches to the development and management of ecosystems or protected areas have been fragmented and reactive. Mechanisms such as Ra’ui of lagoon or inshore resources have been applied to a few areas however management, monitoring and enforcement of these areas have been weak. Questions have also been raised as to the effectiveness of such mechanisms given the limited overall goals of these protected areas.

§ Although the establishment of a national system of protected areas has previously been recommended for consideration, a major gap continues to be that important or threatened ecosystem, sensitive areas, and biodiversity resources have been clearly identified for conservation and that resources and technical capacity for ecosystems management are limited.

· **Root Causes:**

§ Insufficient legislation for the conservation and protection of important ecosystems, protected areas, parks and habitats, including mandates for management plans before biologically unique areas are compromised;

§ Lack of ongoing local and national ecosystem identification, monitoring and management programmes under NES or any agencies mandate;

§ Lack of spatial information on ecosystem and capacity to create and analyse the spatial information e.g. GIS and biostatistics;

§ Insufficient resources, including technical expertise and funding, for ongoing implementation of protected areas;

§ Limited capacity to engage stakeholders to develop and implement participatory conservation and management plans, including NGO and community based protected areas for important ecosystems and habitat;

§ Limited outreach or awareness activities to inform communities and other stakeholders on the benefits and importance of protected areas;

§ Lack of independent National Parks and Protected Areas Authority to administer the Cook Islands national parks and protected areas on behalf of all the major stakeholders;

§ Lack of management group with responsibility to conserve Suvarrow wildlife;

§ Limited capacity to support the management of Ra’ui areas;

§ Lack of assessment of effectiveness of Ra’ui areas, etc.

· **Actions:**

§ Biodiversity Conservation Regulations need consultation and further consideration to be made for specific species, habitats and ecosystems that are under threat;

§ Incorporate important or threatened ecosystems, sensitive areas, and biodiversity resources in a holistic approach to conservation through a national biodiversity programme with clearly prioritised and identified areas and objectives;

§ Develop technical expertise in the identification of ecosystems and all their components processes, including through training, short courses and practical application;

§ Develop technical capacity to create and analysed spatial information through data collection, analysis and GIS applications;

§ Develop and implement management guidelines for all types of protected areas, importance ecosystems and sensitive areas based on sound and proven scientific management principals, including on-going monitoring and review;

§ Identify mechanisms to ensure research and technical assistance reports for ecosystems related work are readily available, such as incorporation into an enforcement of Research Approval Committee policy or MOUs;

§ Develop and utilise a legal requirements to undertake inventories centralise information in a database, and update the information in a systematic way under a National Biodiversity Programme;

§ Build the capacity and strengthen the roles of NGOs and local committees to promote and implement ecosystem management activities, including through awareness raising, provision of resources and training etc;

4. Biosafety and Biosecurity

Biosafety and Biosecurity in the Cook Islands is limited by resources, technical capacity and inadequate monitoring and enforcement measures, An enabling environment for effective Biosafety and biosecurity is lacking. There are no specific policies and procedures or legislation in place to accommodate Biosafety, including the trans-movement and safety handling of Living Modified Organisms (LMOs), and Genetically Modified Organisms (GMOs). Such organisms are not currently covered under the Cook Islands Quarantine legislation however, a Biosafety Policy Framework has been drafted but needs further development before it can be finalised. Basic monitoring procedures are in place for Biosafety at Customs and Biosecurity but enforcement procedures are relaxed and require review. The capacity for safe management of LMO's and GMO's is very limited. Current facilities for the storage of hazardous goods are inadequate, posing both a security and human risk. A more coordinated approach is required to ensure that Ministries and Agencies have access to information and resources that will allow them to develop their own Biosafety and biosecurity procedures as required.

· Root Causes

§ Lack of strategic direction at the policy level for Biosafety and biosecurity,

§ Biosecurity Act 2008 is finalised but the Regulation is still in draft formulation;

§ Current capacity within Biosecurity (Quarantine) Division for Biosafety and Biosecurity, including implementation of the Biosecurity Act 2008 and Biosafety activities is insufficient due to limited staff members, some with no background in biosecurity or science at all;

§ Limited members of researchers, scientists, monitoring and compliance expertise with skills related to Biosafety available locally although there are several specialists in areas such as aquaculture, forestry, economics, soil and policy;

§ No scientific research or development programme being undertaken in the Cook Islands directly related to Biosafety;

§ Lack of facilities e.g. laboratories for the safe handling of LMO's, GMO's and hazardous goods;

- § Lack of technical capacity and the specialised equipment to undertake any Biosafety programmes;
- § Reliance on regional expertise and facilities to carry out any Biosafety work;
- § Insufficient awareness and information on Biosafety and Biosecurity issues;
- § Little coordination between Government and the private sector over the important of potential LMO's or GMO's related matter;
- § Lack of legal and institutional framework to implement the requirements of the Cartagena Protocol on Biosafety to which the Cook Islands is a signatory.

· Actions

- § Complete formalisation of both the Biosecurity Act 2008 and Biosafety Policy Framework to guide future programmes;
- § Develop comprehensive Biosafety legislation to control and regulate the importation, experimentation or use of genetically modified organisms (GMO's);
- § Ensure that issues relating to Biosafety and Biosecurity are included in the National Strategic Plan by Government;
- § Impose rigorous Biosafety and Biosecurity restrictions to protect human life, health, and the integrity of natural flora and fauna and ecosystem;
- § Develop policies and procedures to facilitate monitoring and compliance as well as trans-movements, storage and safety handling of LMO's and GMO's;
- § Develop the capacity of focal points to carry out through risk assessment for Biosafety and Biosecurity, including by drawing on regional expertise for in country training and resources;
- § Develop any risk management regime and establish a permitting process for the importation and use, or the conducting of experiments with LMO's and GMO's;
- § Ensure that the handling of dangerous goods and materials were within the required minimum Biosafety standards;
- § Build up of basic scientific and technical expertise in Biosafety and Biosecurity within identified key stakeholders including the provision of country training and resource storage and handling of LMO's and GMO's and Biosecurity quarantine;
- § Initiate a public awareness education campaign designed for both the private and public sectors informing them of the importance of Biosafety and Biosecurity issues and its impacts on the future of Cook Islands society;
- § Improve coordination of information, resources and knowledge of Biosafety and Biosecurity issues across related sectors that will impact on research, economic, security and handling procedures;
- § Encourage Ministries to include Biosafety issues and resources to their annual budget process;

§ Undertake a multi-sectoral review of the control of trans-boundary and inter-island movement of terrestrial and marine flora and fauna and of LMO's and GMO's with a view to establishing an independent Biosafety and Biosecurity Agency;

§ Develop a data base of LMO's released for commercial purposes to compare with the things imported into the Cook Islands. These should include things like micro-organisms, food additives, food, animals and crop that have been genetically modified;

§ Develop communication strategy for raising public awareness and sharing of information between stakeholders;

§ Develop a HRD programme for staff development within relevant Ministries to ensure sufficient technical capacity for the implementation of Biosecurity and Biosafety activities.

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
Albizia lebbeck, Paraserianthes falcataria	N/A	N/A
Spathodea campanulata	N/A	N/A
Bambusa vulgaris	N/A	N/A
Acacia mangium, Acacia auriculiformis	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Invasive species	N/A	N/A

Tier Criteria

Category	Tier for status	Tier for reported trend
Invasive species	Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	No forest inventory or survey carried out for these woody invasive species.	According to the recent survey carried out by the officers of NES (only for Rarotonga) about 35% of the forest is covered under invasive species (Ballon vine, Merremia species, Mile-a-minute etc).

Other general comments to the table

Even though there is no inventory or survey carried out on these woody invasive species, but because of their aggressiveness in growing they have out grown some of our fernlands and agriculture lands. *Acacia mangium*: No inventory or survey carried out on this species, but due to its aggressively growth it has taken over other barriers and has been noted as invasive species especially on islands of Mangaia, Atiu and Mauke. Agriculture information division has enquired from overseas forestry information countries on network, on the uses of this tree, as people on these islands in the Cook Islands are starting to cut them down and burning them to make way for other agriculture land uses etc, mainly for horticulture purposes. It was introduced for wood burning electric generators, but due to circumstances it did not happen and the tree species were left. According to information collected from network findings it looks like it is a useful tree species for making arts and crafts, livestock feeds, oil extracts for cosmetics etc, apart from being a wood for wood burning generators. It is a nitrogen fixing tree, good for the soil. *Albizia* sp (*Albizia*): Same as above (no inventory carried out for these species) and again another aggressively growing species, and only on these islands (Rarotonga, Mangaia, Aitutaki, Atiu, Mauke and Mitiaro. These species were introduced by the Ministry of Agriculture for the purpose of making patterns for boxes for export of citrus sp and pineapples on boats. When the citrus and pineapple collapsed the tree was left to grow and due to its aggressiveness growth it became also as an invasive species. It also used for firewood but not as much as in the 1900s – 1980s. *Spathodea campanulata* (African Turlip tree): This species is also very aggressively growing mainly on the island of Rarotonga, Aitutaki, Mangaia Nothing is known of its uses etc. *Syzygium cumini* (Java plum): This species was introduced as a windbreaks for citrus plantation around Rarotonga, Mangaia, Aitutaki, Atiu, Mauke and Mitiaro and has been ignored after the failure of our citrus hey days hence it now an invasive species on these islands. It is very aggressive growing tree and they grow mainly on agricultural lands. There only uses is for fire woods and also usually its fruits are either eaten by humans or birds such as fruit-bats, pigeons etc.

8. How much forest area is damaged each year?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

8.1 Categories and definitions

Category	Definition
Number of fires	Number of fires per year
Burned area	Area burned per year
Outbreaks of insects	A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.
Outbreaks of diseases	A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus.
Severe weather events	Damage caused severe weather events, such as snow, storm, drought, etc.

8.2 National data

8.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	NES – Cook Islands 4th National Report to the Convention on Biological Diversity 2011	1. Over view of Biodiversity Status, Trends and Threats 2. Status of Implementation of NBSAP 3. Mainstreaming. 4. Progress Towards the 2010 CBD Targets.	2011	N/A
2	NES – Cook Islands Thematic Assessment Report – Biodiversity, Climate Change, Land Degradation – September 2007.	1. National Capacity Self-Assessment Project for the Cook Islands 2. Thematic Profile-Climate Change and the UNFCCC in the Cook Islands 3. Thematic Profile – Land Degradation and the UNCCD in the Cook Islands.	2007	N/A
3	MoA - Biosecurity Acts 2008	N/A	2008	N/A
4	Cook Islands Biodiversity – Strategy and Action Plan	To equitable share the responsibility to conserve and used biodiversity sustainably and to equitably share the benefits.	2002	N/A

8.2.2 Classification and definitions

National class	Definition
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N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

8.2.3 Original data

Threatened Ecosystem

Climate change, Ecosystems and Biodiversity;

Due to the global scope of this phenomenon it is felt that it warrants its own section. Climate change is expected to rapidly increase the frequency and intensity of many natural occurring threats. In this section we highlight five key threats and how these threats impact on six core ecosystem and biodiversity themes. The interaction between threat and theme are summarised in the table below.

§ Summary table of the major threats expected from climate change events. SOURCE: Adapted from the draft Cook Islands Second National Communication to the UNFCCC.

	Sea Surface Temperature Rise	Sea Level Rise	Extreme Weather Events	Rainfall Variation	Ocean Acidification
Coastal Zone & Coral Reefs	Coral bleaching, changes in distribution and migration, species displacement	Inundation, erosion and increased storm surge, habitat shifts	Habitat destruction, increased sedimentation.	Increased freshwater water runoff, increased in salinity and sedimentation	Reduced Calcification of corals

Original Data

Convention signed by the Cook Islands:

Conventions signed by the Cook Islands The Cook Islands is a party to the following conventions that have a direct bearing on the maintenance biodiversity

1976 Convention on Wetlands of International Importance especially as Waterfowl Habitat, (Ramsar Convention); and amendments Paris 1982 and Regina 1987;

1976 Convention of the Conservation of Nature in the South Pacific (**Apia Convention**)

1986 Convention for the Protection of Natural Resources and Environment of the South Pacific Region and related Protocols (**SPREP or Noumea Convention**)

1989 Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific

1992	Rio Declaration on Environment and Development
1992	Convention on the Conservation of Biological Diversity (CBD or Biodiversity Convention)
1993	Agreement establishing the South Pacific Regional Environment Programme
1994	Barbados Programme of Action on the Sustainable Development of Small Island Developing States (Barbados Programme of Action, (BPoA)) (emerged under Agenda 21 of Rio Declaration)
1998	United Nations Convention to Combat Desertification
2000	Cartagena Protocol on Biosafety (to Biodiversity Convention).

8.3 Analysis and processing of national data

8.3.1 Adjustment

National Environment Services (NES)

8.3.2 Estimation and forecasting


National Environment Services (NES)

8.3.3 Reclassification

National Environment Services (NES)
Ministry of Agriculture (MoA)

8.4 Data

Table 8a

Category		000 ha, number of fires									
		2003		2004		2005		2006		2007	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A




	... of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
1	Coconut Flat Moth (<i>Agonoxena argaula</i>) Introduction and breeding of the parasite wasp (<i>Bracon</i> sp) from Fiji for control. Coconut palms & ornamental palms-caterpillars feed on leaves and exposed roots.	October 2000	N/A
1	False Oleander Scale (<i>Pseudaulacapsis cockerelli</i>): On leaves of mango seedlings from Australia.	November 2006	N/A
1	Glassy-winged Sharpshooter (<i>Homalodisca vitripennis</i>) ex Tahiti: Many plants and trees, with preference to citrus sp and gardenia sp. Severe sap feeder.	March 2007	N/A
1	Red-banded mango caterpillar (<i>Dennolis sublinbalis</i>) new, (<i>Noorda Albizondalis</i>) old: Caterpillars bore in mango fruits and seeds	December 2007	N/A
1	Greenhouse thrips (<i>Heliethrips haemorrhoidalis</i>): Avocado trees	July 2008	N/A
1	Black twig borer (<i>Xylosandrus acutissimus</i>) ex New Zealand: Avocado beetle burrows in fresh stems of crafted plants	August 2009	N/A

1	Banana-shaped Scale (Prococcus acutissimus) Slender soft scale. Severe infestation on lychee leaves causing sooty mould. On sago palm (August 2010)	November 2009	N/A
1	Cuban Laurel Thrips (Gynaiothrips ficorum) Severe damaged on young Ficus benjamina trees, leaves swarming, nuisance for people, attracted to bright colors, bites, painful when caught in eyes.	November 2009	N/A
1	Red-banded Thrips (Selenothrips rubrocinctus): Guavas, Avocadoes, Terminalia sp, Copperleaf. Sever damaged, causing browning-silvering of leaves and fruits.	November 2009	N/A
1	Trilobite Scale. (Pseudaonidia trilobitiformis): Desert Rose	November 2009	N/A

Outbreak category

1 Insects

2 Diseases

3 Severe weather events

Tiers

Category	Tier for status	Tier for trend
Area affected by fire	N/A	N/A
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
Burned area	Tier 3 : National fire monitoring routines Tier 2 : Remote sensing surveys Tier 1 : Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	Tier 3 : Systematic survey (e.g. via inventory or aerial damage assessment) Tier 2 : Management records Tier 1 : Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	None	None
Insects	Under control	Biocontrol
Diseases	None	None
Severe weather events	None	None

Other general comments to the table

Just a few comments on severe weather events. The last time we have cyclones or strong winds was 2009. Since then we were lucky enough to escape all the cyclones that have by-passed the Cook Islands. 2012 Aitutaki was unlucky in which Cyclone Pat swept over the island and did a lot of damages to the accommodations and also to forest trees, agriculture crops, foreshore protection trees, etc, but with help a day after arrives from Rarotonga, resource personals/experts from MoA, MOIP, Red Cross, MMR, MOIF, OPM, MoH, etc to access and also to help in getting the place back to where it was before the cyclone. Now the island is back where they were before Cyclone Pat and everybody on the island are happy.

9. What is the forest area with reduced canopy cover?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

Category	Definition
Reduction in canopy cover	Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor.

Table 9

Category	Area of forest with reduced canopy cover (000 ha)
Reduction in canopy cover	N/A

Tiers

Category	Tier for reported trend
Reduction in canopy cover	N/A

Tier criteria

Category	Tier for reported trend
Reduction in canopy cover	Tier 3 : Remote sensing with ground truthing and/or Landsat imagery Tier 2 : Remote sensing using Modis (using pre-filled data provided by FAO) Tier 1 : Expert opinion

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	N/A

Other general comments

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10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

10.1 Categories and definitions

Category	Definition
Policies supporting sustainable forest management	Policies or strategies that explicitly encourage sustainable forest management.
Legislation and regulations supporting sustainable forest management	Legislation and regulations that govern and guide sustainable forest management, operations and use.

10.2 National data

10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	NES – Cook Islands Thematic Assessment Report – Biodiversity, Climate Change and Land Degradation. September 2007.	Capacity building and development can be defined as – ‘the actions needed to enhance the ability of individuals, institutions and systems to make and implement and perform functions in an effective, efficient and sustainable manner’	2007	To assist in reversing the loss of biodiversity and the future sustainability of the earth’s resources, current global commitments with regards to producing results for biodiversity have concentrated on three main areas for implementation. These were: • Sustainable Development • Ecosystems Management • Biodiversity Conservations.
2	NES-Cook Islands 4th National Report to the Convention on Biological Diversity 2011	Though many targets have not been met, overall, the Cook Islands have made considerable progress towards meeting their obligations under the CBD.	2011	Chapter 1: provides background on the process of developing the Cook Islands National Biodiversity Strategy Action Plan (NBSAP). Chapter 2: deals with process on implementation of the NBSAP. Chapter 3: relates to mainstreaming of biodiversity consideration throughout both the Government and NGOs. Chapter 4: looks at the CBD targets, and shows the status of the Cook Islands in meeting its targets.

3	MoA- Biosecurity Act 2008	Powers of Biosecurity Officers	2008	1. General rules as exercise of powers; 2. Entry, search and seizure; 3. Inspection of documents; 4. Inspection of articles; 5. Detention of articles; 6. Taking of articles; 7. Testing of articles; 8. treatment of articles; 9. Re-consignment of articles; 10. Destruction of articles etc
4	N/A	N/A	N/A	N/A

10.2.2 Classification and definitions

National class	Definition
Biodiversity Conservation	Biodiversity species management, monitoring and recovery programmes, particularly for endangered, threatened or endemic species and any activities concerning biodiversity management, and information management and exchange.
Biosafety & Biosecurity	The capacity for the safe management of LMO's and GMO's, facilitate for the storage of hazardous goods posing both a security and human health risk.
Equitable Sharing of Benefits & Access to Biodiversity	The effective management of Access & Benefits Sharing (ABS), including legislation, policies, institutional structures and management systems such as a system of prior informed consent.
Mainstreaming Biodiversity	The national level, policy frameworks to support Biodiversity activities including the National Biodiversity Strategy and Action Plan (NBSAP).
Management of Knowledge related to Biodiversity	The management of Traditional Knowledge & Practices (TKP) to customary use of biological resources.
Education Awareness & Training	The approach to environmental education awareness, including regular specific climate change communications strategies and measures for different levels.

10.2.3 Original data

National Environment Service (NES) Act 1994-95 and Regulations Environment Act 2003 Natural Heritage Trust Act 1999 Biosecurity Act 2008 Plant Quarantine Regulation 1993 NESAF Performance Monitoring Indicators for Biodiversity, Species and Ecosystems Conservation	
Key Performance indicators	Progress

Regular periodic reviews and reports including National Assessment Report of the NESAF	Annual Environment Forums supposed to take under the Environment Act 2003, but in practice these have been held every 2 to 3 years. Last one was in July 2010, expected to result in a report reviewing the NESAF by October 2010.
National Biosecurity Act adopted by 2006 and Biosecurity Agency established by 2008.	Act passed in 2008, which also established the former Quarantine branch of the Ministry of Agriculture as the Biosecurity Agency.
National Intellectual Property Rights Act and Copy Rights Act adopted and implemented by 2008.	Not achieved. A draft bill has been prepared and is awaiting finalisation. Some regional work currently underway, sponsored by the Forum Secretariat, which may lead to progress in the near future.
Number of identified ecosystems and species with established carrying capacity levels, development guidelines and management plans	Tuna management plan; Environment Takuvaine Water Catchment Regulations 2007; Takitumu Lagoon Management Plan; Manihiki Lagoon Management Plan awaiting Manihiki Island Council endorsement; Takitumu Conservation Area; Draft Suwarrow and Manuae management plans prepared, but not finalised; A number of Marine Raui management plans were also prepared, but there was no annual review or follow-up.
Estimated area (size) of contamination by spreading invasive species reduced as a result of effective control.	Despite some attempts to eradicate invasive weeds, in Mangaia, Mauke and Mitiaro, these have not been successful, and the total areas are likely to have increased since the NBSAP project prepared. There is need to carry out a monitoring and evaluation on these attempts.
Number of active community and national programmes related to biodiversity protection, conservation and management of various species managed by locals	TCA, Takitumu Lagoon, Manihiki Lagoon Management Plan, (awaiting Island Council endorsement).

Growing number of local enterprises and individuals especially women making and income-generated livelihood from biodiversity and related initiatives. E.g. eco-tourism activities and Maori medicinal practices	No baseline survey or monitoring programme established. Export of <i>maire</i> from southern group remains the only export., though tuna exports, pearls and marine aquarium fish could also be considered a local enterprise reliant on biodiversity
Increased funding for National Heritage Trust programme and employment of local counterparts	No increase in funding reviewed, no local counterpart employed. Environment Fund from airport departure tax discontinued, with funds now going to consolidated Government revenue.
Greater awareness and use of Cook Islands Biodiversity Database	Promote at several regional workshops and presented as a case study for other countries to follow
Number of national parks and rau'i reserves with functional management plans established nationwide, including Rarotonga cloud forest, Suwarrow, Takutea and Manuae.	Currently 25, mainly marine. See list of protected areas.
National Research Foundation Act adopted by 2006	No progress, though there are two Research Committees established, one under the Government umbrella and the other the Cook Islands research Association. Both bodies have clear and distinct objectives. The Government body regulates and monitors research while the other promotes research.

Introduction to Biodiversity Programmes and Capacities

a. Background

1. The overall focus of the United Nations Convention on Biological Diversity (UNCBD or CBD) was the conservation of biological diversity, their sustainable use, and fair and equitable sharing of benefits arising out of the utilization of genetic resources. The diverse landforms, water and ocean environment of the earth provides millions of species of plants and animals for the necessary support for their livelihood and survival.
2. The loss of biological diversity resources as a result of negative human development in the pass has generated global concern about the impact of this loss on future populations' livelihoods and survival. In this context, the world future economies and development is also seen to depend on the well being of biodiversity for survival.
3. Therefore, to assist in reversing the loss of biodiversity and the future sustainability of the earth's resources, current global commitments with regards to producing results for biodiversity have concentrated on three main areas for implementation. These include:
 - o Sustainable Development
 - o Ecosystems Management
 - o Biodiversity Conservation

4. The Conservation of Biological Diversity (CBD) was opened for signing in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil and came into force in December 1993. In ratifying the CBD in 1992, the Cook Islands Government committed itself and the Cook Islands people to the implementation of the CBD and meeting its targets.

5. The Cook Islands CBD programme was centred on the National Biodiversity Strategic Action Plan (NBSAP). The NBSAP project was probably the most influential national programme related to CBD when the national biodiversity programme started in 1996. The NBSAP was started in 1999 and completed 2002.

6. During the drafting of the NESAF 2005-2009, the NESAF strategies were revisited and integrated into the biodiversity component of the NESAF. The NESAF is the next five years' strategic framework for the environment sector, and although the NBSAP was completed in 2002, it is still considered valid for the next five years as most of its strategies and actions have not yet been implemented.

7. The thematic assessment of the CBD and biodiversity capacities is therefore a continuous attempt to improve the implementation of the NESAF and NBSAP by identifying capacity constraints and gaps likely to impede implementing national programmes related to CBD. This will help the Cook Islands meet its commitments and obligations under the CBD.

8. Additionally, this assessment will identify priorities and needs for capacity building in the Cook Islands and link country action to the broader national environmental management and sustainable development framework.

b. UNCBD Requirements

The primary obligations of the UNCBD as they relate to the Cook Islands interests and central to this thematic assessment were highlighted as follows:

- o The Convention calls for the Cook Islands to facilitate effective national biodiversity planning and integration efforts . The general provisions commit the Cook Islands to develop and implement community and national programmes related to biodiversity protection, conservation and management of identified species and ecosystems . In terms mainstreaming of biodiversity, the Cook Islands are expected to put in action the integration of biodiversity management into national and sectoral legislation, policies, plans and programmes .

- o Provisions also require the introduction of appropriate arrangements to ensure that environmental consequences of relevant programmes and policies are the subject of environmental impact assessment and the significant adverse impacts on biological diversity are minimized .

- o With regards to access to financial resources and mechanisms for biodiversity, the Cook Islands, in accordance to its capabilities, is called upon to provide funding and or access financial resources provided via the financial mechanism of the Convention and/or via other donors.

- o The Convention also requires for institutional capacity building for the effective implementation of biodiversity programmes by strengthening or establishment , as appropriate, of national biological diversity secretariat or national focal point .

- o Provisions also require the Cook Islands to provide measures for the identification and monitoring of components of biological diversity important for its conservation and sustainable use.

- o Additionally, the Convention encourages the Cook Islands to respect and preserve knowledge, innovations and practices of indigenous and local communities .
- o The Cook Islands is required to develop and introduce economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity.
- o The convention also commits the Cook Islands to adopt measures that will enhance the recovery and rehabilitation of endangered species as well as promote policies and regulations to reduce spread of invasive species and harmful species . Provision also outlined the importance of management of national biodiversity resources including protection, conservation and providing for their sustainable use . Similarly to *in-situ* conservation measures, the Cook Islands should also consider the collection of biological resources from natural habitats for ex-situ conservation purposes .
- o In terms of biodiversity awareness and education , the Cook Islands is required to: promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity ; establish and maintain programmes for scientific and education and training ; establish and operate clearing-house mechanism to promote and facilitate technical and scientific co-operation .
- o The convention also calls for equitable sharing of benefits and access to biodiversity by developing and introducing measures regulating the access to genetic resources and to provide access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biological diversity. Provisions also the need for the Cook Islands to take legislative, administrative or policies measures , as appropriate , with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources . These measures include the development, adoption and implementation of the National Research Foundation Act, Intellectual Property Rights Act , and Copy right Act .
- o The Cook Islands is also encouraged to address provisions of the Cartagena Protocol on Biosafety , especially, development and introduced appropriate measures , such as Biosecurity Act , as well as develop strategies to strengthen biosecurity and Biosafety programmes , to ensure safety regulations in handling living modified organisms resulting from biotechnology.

Original Data

10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes	no	no	yes

... of which, in <u>publicly</u> owned forests	yes	no	no	yes
... of which, in <u>privately</u> owned forests	yes	no	no	yes
Legislation and regulations supporting sustainable forest management	yes	no	no	yes
... of which, in <u>publicly</u> owned forests		no	no	
... of which, in <u>privately</u> owned forests		no	no	

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	National Environment Services – Biodiversity policies
Legislation and regulations supporting sustainable forest management	NES Act and Regulations. MoA/Biosecurity Act 2008 and Quarantine Regulations 1993

Other general comments

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11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

11.1 Categories and definitions

Category	Definition
National stakeholder platform	A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy.

11.2 National data

11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	NES – National Stocktake Report. National Capacity Self Assessment for Global Environment Management Project.	August 2005.	Capacity of Government Agencies (GAs) and Non-Government Organisations (NGOs)
2	NES - Cook Islands 4th National Report to the Convention on Biological Diversity	2011	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	yes
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11.3 Comments

Category	Comments related to data definitions etc
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National stakeholder platform	<p>Roles and Responsibilities of Government and Non-Government Organisations Governments: 1. Ministry of foreign Affairs and Immigration (MFAI) is national focal point for all international conventions and Multi-lateral Environmental Agreements (MEAs); 2. National Environment Service (NES) is the agency responsible for the facilitation, coordination and implementation of environmental programmes nationally, including the MEAs. Its divisions includes: Environment International Division, Enforcement and Compliance Division, and Administration and Finance, Active MEA-related projects include the International Waters Programme, National Climate Change Programme, and National Biodiversity Strategic Action Plan – Add on Project (NBSAP). 3. The Ministry of Agriculture (MoA) is responsible for providing crop and livestock support through research, technical advisory, education and awareness programmes to local farmers and the general public. Its divisions includes: Biosecurity Division, Livestock Division, Research Division, Projects and Cook Islands coordinator Forestry Programmes division, Administration division. P.S. The Cook Islands forestry programmes originated as a MoA programme in 1984. It was established with NZAID, USDA, GTZ, AustAID, Canada and French assistance. The forestry programme was disbanded in 1996 due to changes in government and aid donors' priorities. As a result of declining resources, its capabilities including staffing levels and functions were also reduced to basic seedling nursery management, plantation maintenance as well fire suppression activities under the administration of the island councils and until recently the MoA. 4. Ministry of Education (MoE). 5. Ministry of Marine Resources (MMR). 6. Ministry of Culture (MoC). 7. Cook Islands Tourism Corporation etc. NOGs 1. The House of Ariki 2. Taporporanga Ipukarea Society (TIS) 3. The Avana-Muri Marine Action Group (AMMAG) 4. Takitumu Conservation Area (TCA) 5. The Whale Research Centre 6. The Mangaia Tangaero Rangers 7. Rarotonga Environment Awareness Programme 8. Tourism Industry Council Environment Committee 9. Red Cross Cook Islands etc Te Kaveinga Nui and National Sustainable Development Plan (NSDP) In the Ministerial Statement for the NESAF publication in 2004 the Cook Islands Environment Minister at the time Sir Geoffrey Henry said: "We have made a beginning by adopting the new National Environment Act 2003. Having the National Environment Strategic Action Framework (NESAF) linked into the National Development Plan (NDP) process, the National Millennium Development Goals (NMDG) programme for poverty alleviation, and the World Summit on Sustainable Development Programmes (SDP) is crucial in meeting our national goals and international obligations" As this statement predicts, the NESAF was subsequently incorporated into the NSDP for 2007 to 2010. This was a further step in ensuring that mainstreaming of biodiversity considerations was given due consideration in the overall plan for sustainable development in the Cook Islands. Te Kaveinga Nui is the "Pathway for Sustainable development in the Cook Islands". It is a general, longer term document setting a broad, over-arching plan for the future developing of Cook Islands to the year 2020. It includes a national vision: "To enjoy the highest quality of life consistent with the aspirations of our people, and in harmony with our culture and environment". To live in harmony with your environment is, in essence, to conserve biodiversity. The Kaveinga Nui incorporates 5 strategic outcomes for the country. A key part of outcome number 5 related to environmental and cultural values is that by 2020, Cook Islanders will have a</p> <p>⁹⁶ "firm respect for our natural environment through increased conservation efforts that are consistent with the principles of sustainable development ensuring the protection of our natural</p>
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Other general comments

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12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

12.1 Categories and definitions

Category	Definition
Forest area intended to be in permanent forest land use	Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.
...of which permanent forest estate (<i>sub-category</i>)	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

12.2 National data

12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	National Environment Service (NES)	N/A	N/A	N/A
2	Ministry of Agriculture (MoA)	N/A	N/A	N/A
3	Red Cross Cook Islands	N/A	N/A	N/A
4	Ministry of Infrastructure and Planning (MOIP)	N/A	N/A	N/A
5	Ministry of Justice (MoJ)	N/A	N/A	N/A

12.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

12.2.3 Original data

No inventory or survey carried out to define these two areas. In the Cook Islands the only islands we can define these two areas are; Rarotonga, Mangaia, Aitutaki, Atiu, Mauke and Mitiaro. The reasons being that Rarotonga got hills and mountains, foreshore areas are permanent natural forest areas, and very small land use areas are covered with forest except for hill sides.

On the islands of Mangaia, Atiu, Mauke and Mitiaro most of the inland are permanent forest and also foreshore, due to the formation of the islands. These islands are defined as Makatea (raised reef platform).

In the atolls the forest is classified as foreshore forest due to their formation.

12.3 Analysis and processing of national data

12.3.1 Adjustment

National Environment Service (NES)
Ministry of Agriculture (MoA)
Cook Islands Red Cross Society

12.3.2 Estimation and forecasting



As above

12.3.3 Reclassification

As above

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	N/A
	... of which permanent forest estate	N/A

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	N/A

Permanent forest estate	N/A
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Tier Criteria

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other
Permanent forest estate	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other

12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	This area is being converted and being used either for agriculture land used, or accommodations for private homes or tourist accommodations at a very fast pace. No survey has been done to exactly know on how many hectares in permanent forest land use. The changes have increased due to our tourism industry and also for agricultural land uses to feed our population and also our booming tourism industry.
Permanent forest estate	Very slow in development as it is very hard to get an EIA approval from NES to build or use for private enterprises.

Other general comments

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13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

13.1 Categories and definitions

Category	Definition
Forest area monitored under a national forest monitoring framework	Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality.
Forest reporting at national scale	National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.

13.2 National data

13.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	National Environment Services	N/A	N/A	N/A
2	Ministry of Agriculture	N/A	N/A	N/A
3	Cook Islands Red Cross Society	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

13.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/remote sensing sample based	Aerial/remote sensing full coverage
Forest inventory	N/A	N/A	no	yes	no	yes	no	yes
Other field assessments	N/A	N/A	no	yes	yes	yes	yes	yes
Updates to other sources	N/A	N/A	no	yes	no	no	no	no
Expert estimate	N/A	N/A						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	yes
2 Periodic national state of the forest report	yes
3 Other (please document)	yes
4 None	no

Other type of forest reporting

Agro-forestry is a usual practice carried out in the Pacific islands.

13.4 Comments

Category	Comments
N/A	N/A
N/A	N/A
N/A	N/A

Other general comments

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14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production (<i>sub-category</i>)	Forest management plan mainly focused on production
...of which for conservation (<i>sub-category</i>)	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

14.2 National data

14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	NES - Cook Islands Biodiversity Strategy and Action Plan	To equitable share the responsibility to conserve and use biodiversity sustainably, and to share equitably share the benefits	April 2002	The following table includes protected areas regardless of whether they are called national parks, nature reserves, rau'i, motu, marine reserves, conservation areas or wildlife sanctuaries.

2	NES – National Stocktake Report	National Capacity Self Assessment for Global Environment Management Projects	August 2005	The Cook Islands National Capacity Self Assessment (NCSA) programme was supported by the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP) office in Samoa. The project evolved from many international declarations and policy statements such as the Agenda 21 and the WSSD Johannesburg Plan of Action and in the case of small islands developing states, the Barbados Programme of Action. According to UN decision 2/cp.7, “capacity building is a continuous, progressive and iterative process, the implementation of which should be based on the priorities of developing countries.
3	MoA – Biosecurity Act 2008	Biosecurity Import and Export Procedures etc	2008	PART 4 – Biosecurity Import Procedures • Biosecurity entry inspection of incoming articles; • Biosecurity import clearance of regulated articles; • Grant and refusal of biosecurity import clearance; • Biosecurity import specifications; • Biosecurity access arrangements; • Application for a biosecurity permit; • Issue of a biosecurity import permit; • Revocation of a biosecurity import permit; • Exemption from biosecurity import requirements; • Articles and passengers in transit.
4	N/A	N/A	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	1,428
... of which for production	0
... of which for conservation	1,428

Table 14b

Indicate which (if any) of the following are required in forest management plans in your country	
1 Soil and water management	yes
2 High conservation value forest delineation	yes
3 Social considerations community involvement	yes

Table 14c

Percent of area under forest management plan that is monitored annually	9.5
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Tiers

Category	Tier for status
Forest area with management plan	Tier 1
Percent of area under forest management plan that is monitored annually	Tier 1

Tier criteria

Category	Tier for status
Forest area with management plan	Tier 3 : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans Tier 2 : Industry or other records indicating the presence of a long-term forest management plan Tier 1 : Other
Percent of area under forest management plan that is monitored annually	Tier 3 : Government documentation of monitoring extent Tier 2 : Reports from forest managers or other documental sources Tier 1 : Other

14.4 Comments

Category	Comments
Forest area with management plan	Refer to data 14.3 Cook Islands Protected Areas
Percent of area under forest management plan that is monitored annually	Percent was calculated by dividing area of forest under forest management plan (1428ha) by the total forest area (15,100ha). 1428 ha throughout the Cook Islands and mainly conservation (Rau'i) areas. E.g. Takitumu Conservation Area –for the protection of Kakerori birds that have increase since it started in 1996 and also same area and others for the control of ship's rat. It's an on-going programme.
N/A	The actual hectares are not recorded but according to records of the Cook Islands Protected Areas there are about 1,585 hectares (wildlife sanctuaries, National Parks, Conservation areas, and Rau'i etc).

Other general comments

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15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

15.1 Categories and definitions

Category	Definition
Stakeholder involvement	Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale

Table 15

Please indicate the type of stakeholder involvement in forest management decision making required in your country	
1. Planning phase	yes
2. Operations phase	yes
3. Review of operations	yes

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 1

Tier criteria

Category	Tier for status
Type of stakeholder inputs	Tier 3 : Government (national or sub-national) documentation of stakeholder inputs Tier 2 : Government (national or subnational) requirement but stakeholder inputs not documented Tier 1 : Other

15.2 Comments

Category	Comments
Biodiversity	Takitumu Conservation Area – Value of trees, Birds conservation and breeding, (KAKERORI), Rat control etc, on Rarotonga
N/A	Atiu Island – Bird's sanction – KURA, KOPEKA etc and also the Takutea island as bird's also birds and Coconut Crabs etc
N/A	N/A

Other general comments

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16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

16.1 Categories and definitions

Category	Definition
FSC certification	Forest area certified under the Forest Stewardship Council certification scheme
PEFC certification	Forest area certified under the Programme for the Endorsement of Forest Certification scheme
Other international forest management certification	Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification.
Certified forest area using a domestic forest management certification scheme	Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty

16.2 Data

Table 16a













International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	0	0	0	0	0	0	0
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	0	0	0	0	0	0	
	PEFC	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
		0	0	0	0	0	0	
		0	0	0	0	0	0	
		0	0	0	0	0	0	

Tier criteria

Category	Tier for status
International forest management certification	Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other
Domestic forest management certification	Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other

Tiers

Category	Tier for status
International forest management certification	Tier 3
Domestic forest management certification	N/A

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	N/A
Domestic forest management certification	No reports has been written that International Forest Management Certification for the Cook Islands has been issued

Other general comments

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17. How much money do governments collect from and spend on forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

17.1 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> • <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • <u>Services</u> : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.
Public expenditure on forestry	All government expenditure on forest related activities.

17.2 National data

17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	N/A	N/A	N/A
Public expenditure on forestry	N/A	N/A	N/A
	2000	2005	2010
Name of Local Currency	N/A	N/A	N/A

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	N/A
Public expenditure on forestry	N/A
Other general comments	N/A

Other general comments

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18. Who owns and manages the forests and how has this changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

18.1 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at national scale (<i>sub-category</i>)	Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at the sub-national government scale (<i>sub-category</i>)	Forest owned by the State at the sub-national government scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
...of which individuals (<i>sub-category</i>)	Forest owned by individuals and families.
...of which private business entities and institutions (<i>sub-category</i>)	Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.
...of which local tribal and indigenous communities (<i>sub-category</i>)	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development.
Unknown ownership	Forest area where ownership is unknown includes areas where ownership is unclear or disputed.
Categories related to management rights of public forests	Definition
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private companies	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

18.2 National data

18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	OLIVER. W. 1999. Plantation forestry in the South Pacific. A compilation and Assessment of Practices Project RAS/86/036. UBDP/FAO, Rome.	Land ownership, Land cover area.	1998	N/A
2	Ministry of Justice – Land Survey, Land Court, etc.	Various	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

18.2.2 Classification and definitions

National class	Definition
Public ownership	Forest owned by State; or Administrative units of the public administration; or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGO's, nature conservation associations and other private institutions.
Individuals	Forest owned by individuals and families.
Private Business entities and institutions	Forest owned by private corporations, co-operatives, companies and other business entities, as well as private non-profit organizations such as NGO's, nature conservation associations, and private religious and educational institutions..
Local communities, Indigenous/tribal communities, other types	As of public ownership.

18.2.3 Original data

According to Oliver (1999), land ownership varies from island to islands although most land is owned by families.

18.3 Analysis and processing of national data

18.3.1 Adjustment

Cook Islands Ministry of Justice.

Land Courts & Survey








18.3.2 Estimation and forecasting

18.3.3 Reclassification

All forest area is privately owned.

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	0	0	0	0
	... of which owned by the state at national scale	N/A	N/A	N/A	N/A
	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	N/A
	Private ownership	14.9	15.5	15.5	15.5
	... of which owned by individuals	0	0	0	0
	... of which owned by private business entities and institutions	2	2	2	2
	... of which owned by local, tribal and indigenous communities	12.9	13.5	13.5	13.5
	Unknown ownership	0	0	0	0
TOTAL		14.90	15.50	15.50	15.50

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 1	Tier 1

Private ownership	Tier 1	Tier 1
Unknown ownership	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Ownership	Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2: National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	N/A	N/A	N/A	N/A
Individuals	N/A	N/A	N/A	N/A
Private companies	N/A	N/A	N/A	N/A
Communities	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A
TOTAL	.00	.00	.00	.00

Category	Tier for reported trend	Tier for status
Public Administration	N/A	N/A
Individuals	N/A	N/A
Private companies	N/A	N/A
Communities	N/A	N/A
Other	N/A	N/A

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	N/A	N/A

Private ownership	N/A	N/A
Unknown ownership	N/A	N/A
Management rights	N/A	N/A

Other general comments to the table

1. Takitumu Conservation Area: This piece of land is privately owned land/family land (Karika family) under conservation of forest trees, birds etc sanctuary, managed by the family with the help from the Natural Heritage Programme; 2. Takutea island: Owned and managed by the people of Atiu under conservation for birds, forests, coconut crabs etc sanctuary; 3. Suvarrow atoll/ island: Owned and managed by the Government of the Cook Islands/ National Environment Services/Natural Heritage Programme as a birds, turtles, forest etc sanctuary; 3. Manuae island: Owned by a family on Aitutaki, but once under the management of the Cook Islands Co-operative Society which do copra, during the 1940s-60s.

19. How many people are directly employed in forestry?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

19.1 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment in forestry	Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

19.2 National data

19.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

19.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A



19.2.3 Original data

Before the reform in 1996 Forestry a division, policy and programmes for the Cook Islands under the Ministry of Agriculture, Livestock and Forestry then, and that was then when all plantations of *Pinus caribean* (pines) were planted on the islands of Rarotonga, Mangaia, Atiu and Mauke for the purpose of stopping soil erosions, for these four islands were heavily involved in planting citrus sp and pineapples for export. When the 1996 reform came into place this was one of the divisions in the Ministry of Agriculture which was faced out, hence these plantations were not looked after and landowners claimed that they are the owners. Pines were not the

only once that was neglected but other trees like the Acacia sp which government introduced for the purpose of wood-burning electricity generators. Also Sandalwood sp were caught in the reform and also land owners claim it is theirs and are under the responsibilities of each Islands Administration of each island. What the Ministry of Agriculture does now is to coordinate forestry programmes and also the Ministry of National Environment Services/ Cook Islands Biodiversity.

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	N/A	N/A	N/A	N/A
	... of which female	N/A	N/A	N/A	N/A

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	N/A	N/A

Other general comments to the table

Forestry was part of the Ministry of Agriculture programme until 1996. Since then all forestry programme are being carried out by the National Forestry Service and Natural Biodiversity.

20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

20.1 Categories and definitions

Category	Definition
Gross value added from forestry (at basic prices)	This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	N/A	N/A	N/A

20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices)	Forest tree are not cut or milled in the Cook Islands. All timbers and building materials are imported from New Zealand, Australia and Fiji.

Other general comments

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21. What is forest area likely to be in the future

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

21.1 Categories and definitions

Category	Definition
Government target/ aspiration for forest area	Government target/aspiration for forest area for a specific year.
Forests earmarked for conversion	Forest area that is allocated/classified or scheduled to be converted into non-forest uses.

21.2 National data

21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	NES – Cook Islands Thematic Assessment Report 2007. - Biodiversity - Climate Change - Land Degradation	National Capacity Self Assessment for Global Environment Management.	On - going	The Cook Islands Te Kaveinga Nui – NSDP 2011 – 2015.
2	NES – Cook Islands 4th National Report to the Convention on Biological Diversity. 2011.	The 4 Chapters: 1. provides background on the process of developing the NBSAP. 2. deals with progress implementation of the NBSAP 3. relates to mainstreaming of biodiversity considerations throughout both Government and NGOs. 4. looks at the CBD targets, and shows the status of the Cook Islands in meeting its targets.	On-going	The Cook Islands Te Kaveinga Nui - NSDP 2011-2015.
3	NES – National Capacity Self Assessment for Global Environment Management Plan 2005.	Divided into 2 major parts: 1. Background to NCSA and National Commitments to MEAs; 2. Existing Mechanisms and Constrains to Implementation of MEA Obligations and National Priorities.	On-going	The Cook Islands Kaveinga NUI – NSDP 2011 – 2015.
4	N/A	N/A	N/A	N/A

21.3 Data

Table 21a

Category	Forest area (000 ha)
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	2020	2030
Government target/aspiration for forest area	N/A	N/A

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	N/A

21.4 Comments

Category	Comments
Government target/aspiration for forest area	The Cook Islands Government have not commented on target or aspiration for forest area, but did mentioned in the NES programme to conserve all forest areas for climate change and foreshore protection etc.
Forests earmarked for conversion	N/A

Other general comments

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