



THIRD NATIONAL REPORT
to the
CONFERENCE OF PARTIES
of the
CONVENTION ON BIODIVERSITY

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A. REPORTING PARTY

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Box I. Information on the preparation of the report

Please provide information on the preparation of this report, including information on stakeholders involved and material used as a basis for the report.

Preliminary information was gathered by a team of three senior public servants: Mr. Robert Jimmy of the Department of Fisheries, Mr. Ioan Viji of the Department of Forestry, Mr. Sandy Mael an agricultural scientist within the Vanuatu Quarantine and Inspection Services. Information was compiled from personal experience, informal discussions with colleagues and departmental policies and plans. Ms Jenny Whyte assisted with compiling and editing the report.

A draft report was submitted to the Head of the Environment Unit for review in November 2005.

The finalised draft was forwarded to senior officers of government and non-government agencies for review and comment. In addition agencies were invited to a one day consultation meeting to contribute to the report and discuss Vanuatu's progress in addressing the Convention of Biodiversity. Subsequent to the consultation meeting the report was finalised.

B. PRIORITY SETTING, TARGETS AND OBSTACLES

Box II.

Please provide an overview of the status and trends of various components of biological diversity in your country based on the information and data available.

Progress has been made in documenting Vanuatu's biodiversity especially in genera associated with freshwater ecosystems, skinks and geckoes, butterflies and five priority tree species. However, in general Vanuatu's biodiversity remains poorly known, with neither little research into species' ecology nor research at ecosystem level. Research that has addressed species' variation and ecology has been primarily confined to a small number of species of high use value (*Trochus niloticus*, *Birgus latro*, *Santalum austrocaledonicum*). Most work to document biodiversity has been funded by external and independent sources. This situation reflects Government priorities that direct Vanuatu's limited national resources toward social services, governance and development of a private economic sector (Government of the Republic of Vanuatu, undated). Biodiversity collections remain inappropriately housed and only a few individuals have taxonomic training.

Monitoring of biodiversity is limited to a small range of used species, and focuses on population and usage levels. Monitoring at ecosystem level takes place in three contexts.

- (a) Monitoring of coastal marine habitats at several locations around Efate to provide a baseline for assessment of environmental change;
- (b) Monitoring the impact of harvesting of marine species for food, ornaments and industrial uses on the population of selected species;
- (c) Monitoring of forest regeneration survey plots.

Typically monitoring has only taken place for a few years or less and capacity and commitment to maintain monitoring studies in the long term is unclear. There is an inadequate scientific capacity and inadequate budget for more comprehensive monitoring of environmental change. Priorities for a centralised laboratory facility remain unfunded.

It is widely accepted that no terrestrial species have become extinct in Vanuatu in recent history, although *Tridacna gigas* is believed to have been extirpated in the last 30 years as a consequence of easy harvesting. Given relatively rapid and widespread changes in land use practices over two decades associated with the conversion of lowland forest to agricultural applications the Department of Forests Conservation Unit has raised concerns about the decline in lowland rainforest habitat and associated species. However there has been little progress toward establishing conservation targets. International attention is consistently drawn to the perceived high biodiversity of higher altitude forests, which are locally considered unthreatened due to the limited accessibility and largely traditional human impacts.

Most biodiversity conservation achievements have been either direct or indirect outcomes of projects funded by bilateral and multilateral agencies. This includes development of the Code of Logging Practice and National Forest Policy, development of a National Biodiversity Strategy and Action Plan, development of a Biosecurity Framework, research and field trials to inform management of *Trochus niloticus*, *Turbo marmoratus*, and *Birgus latro* and conservation plans for five priority tree species, and establishment of small *ex situ* and *in situ* collections of agricultural biodiversity.

The focus of national biodiversity planning and management is sustainable use, and this is provided for in legal and regulatory frameworks at sectoral level. Environmental Impact Assessment was formally mandated by legislation in 2003 and requirements to assess impacts on biodiversity have been well accepted.

Priority Setting

1. Please indicate, by marking an "X" in the appropriate column below, the level of priority your country accords to the implementation of various articles, provisions and relevant programmes of the work of the Convention.

Article/Provision/Programme of Work	Level of Priority		
	High	Medium	Low
a) Article 5 – Cooperation	X		
b) Article 6 - General measures for conservation and sustainable use	X		
c) Article 7 - Identification and monitoring		X	
d) Article 8 – <i>In-situ</i> conservation			X
e) Article 8(h) - Alien species		X	
f) Article 8(j) - Traditional knowledge and related provisions		X	
g) Article 9 – <i>Ex-situ</i> conservation			X
h) Article 10 – Sustainable use of components of biological diversity	X		
i) Article 11 - Incentive measures			X
j) Article 12 - Research and training		X	
k) Article 13 - Public education and awareness		X	
l) Article 14 - Impact assessment and minimizing adverse impacts		X	
m) Article 15 - Access to genetic resources			X
n) Article 16 - Access to and transfer of technology		X	
o) Article 17 - Exchange of information		X	
p) Article 18 – Scientific and technical cooperation		X	
q) Article 19 - Handling of biotechnology and distribution of its benefits			X
r) Article 20 - Financial resources	X		
s) Article 21 - Financial mechanism			X
t) Agricultural biodiversity			X
u) Forest biodiversity		X	
v) Inland water biodiversity			X

w) Marine and coastal biodiversity		X	
x) Dryland and subhumid land biodiversity			
y) Mountain biodiversity		X	

Challenges and Obstacles to Implementation

2. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the provisions of the Articles of the Convention (5, 6,7, 8, 8h, 8j, 9, 10, 11,12, 13, 14, 15,16, 17, 18, 19 and 20)

3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Articles																	
	5	6	7	8	8h	8j	9	10	11	12	13	14	15	16	17	18	19	20
a) Lack of political will and support	1	2	3	2	N/A	1	2	3	2	2	1	1	3	2	2	2	1	3
b) Limited public participation and stakeholder involvement	1	2	N/A	1	3	1	2	3	2	N/A	2	1	3	2	2	2	2	1
c) Lack of mainstreaming and integration of biodiversity issues into other sectors	2	2	N/A	1	2	2	2	2	1	2	2	1	3	2	3	2	2	3
d) Lack of precautionary and proactive measures	1	2	N/A	N/A	3	2	2	3	3	2	1	1	3	2	3	2	2	3
e) Inadequate capacity to act, caused by institutional weakness	1	2	2	2	3	2	2	3	3	2	2	2	3	3	3	2	1	3
f) Lack of transfer of technology and expertise	1	2	1	1	3	2	2	3	N/A	2	N/A	1	3	3	3	1	1	2
g) Loss of traditional knowledge	N/A	2	1	1	N/A	1	2	3	N/A	2	1	1	N/A	2	N/A	1	N/A	N/A
h) Lack of adequate scientific research capacities to support all the objectives	1	3	3	1	2	N/A	2	3	N/A	2	1	1	3	3	3	2	1	N/A

i) Lack of accessible knowledge and information	1	3	2	2	3	1	3	3	3	2	1	1	3	3	3	2	2	2
j) Lack of public education and awareness at all levels	1	2	1	2	2	2	2	3	2	2	2	1	1	1	3	2	2	1
k) Existing scientific and traditional knowledge not fully utilized	1	2	2	2	1	2	2	3	2	2	2	1	1	1	3	2	2	N/A
l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	1	1	1	1	3	2	3	3	3	1	2	1	3	2	3	2	2	3
m) Lack of financial, human, technical resources	2	3	2	2	3	3	2	3	3	2	3	3	3	3	3	3	1	3
n) Lack of economic incentive measures	1	1	1	3	3	2	3	3	3	2	3	1	N/A	2	3	3	1	3
o) Lack of benefit-sharing	N/A	2	1	2	2	2	2	3	2	2	2	1	3	2	3	2	1	2
p) Lack of synergies at national and international levels	1	1	1	N/A	2	2	2	3	1	2	2	2	1	2	3	2	2	1
q) Lack of horizontal cooperation among stakeholders	2	1	1	1	1	2	3	3	1	2	2	2	2	2	3	2	2	2
r) Lack of effective partnerships	2	1	1	1	2	2	3	3	2	2	1	1	2	2	3	2	1	3
s) Lack of engagement of scientific community	1	2	2	1	3	2	2	3	1	2	2	2	1	2	3	2	1	N/A
t) Lack of appropriate policies and laws	1	1	1	1	2	2	2	N/A	2	2	1	1	3	3	N/A	2	1	3
u) Poverty	N/A	3	1	3	N/A	N/A	2	N/A	3	1	N/A	N/A	1	2	N/A	N/A	N/A	3
v) Population pressure	N/A	2	1	3	3	1	2	3	3	1	1	1	1	N/A	N/A	2	N/A	2
w) Unsustainable consumption and production	2	2	1	2	N/A	2	3	N/A	2	2	2	1	1	1	N/A	2	N/A	2

patterns																		
x) Lack of capacities for local communities	N/A	2	1	3	3	2	3	3	3	2	2	3	2	3	3	3	N/A	2
y) Lack of knowledge and practice of ecosystem-based approaches to management	1	1	1	2	3	2	3	3	2	2	2	2	N/A	N/A	3	3	1	2
z) Weak law enforcement capacity	1	2	1	2	2	2	3	3	2	2	3	3	2	2	2	3	2	2
aa) Natural disasters and environmental change	2	3	1	3	N/A	N/A	1	N/A	N/A	1	N/A	2	2	N/A	N/A	N/A	2	3
bb) Others (please specify)																		

2010 Targets

The Conference of the Parties, in decision VII/30, annex II, decided to establish a provisional framework for goals and targets in order to clarify the 2010 global target adopted by decision VI/26, help assess the progress towards the target, and promote coherence among the programmes of work of the Convention. Parties and Governments are invited to develop their own targets with this flexible framework. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box III.

Goal 1	Promote the conservation of the biological diversity of ecosystems, habitats and biomes.	
Target 1.1	At least ten percent of each of the world's ecological regions effectively conserved	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		X
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		
Please provide details below.		
<p>Vanuatu has not established a national target because there is inadequate information with respect to both</p> <p>a) the structure, area and integrity of ecosystems present in Vanuatu; and</p> <p>b) the impact and adequacy of existing measures for conservation of biological diversity of Vanuatu's ecosystems.</p> <p>Initial priorities are</p> <ul style="list-style-type: none"> to identify and address priorities at a species and habitat level; to explore the range of conservation options that might work effectively in-country; to put in place legal and administrative frameworks that will enable conservation of biological diversity. <p>At a national level there are formal operational goals such as formalisation of a marine reserve in association with the Hat Island Heritage Area and conservation strategies for five priority tree species. Wider reaching but often unquantified are a range of local conservation, custom and resource management goals that are addressed at the landholder or clan level independently of government. Most are small (< 10 ha), locally established and managed, with traditional concepts such as <i>tabus</i> dominating the management regimes in place.</p> <p>All government and NGO agencies involved in natural resource management actively encourage these local-level conservation initiatives. While there have been significant efforts over the past decade to understand local conservation initiatives this work has largely been qualitative. A GEF funded MSP that commenced late in 2005 provides opportunity, among other things, to assess the extent to which biodiversity is conserved through the existing mosaic of local resource management initiatives on three islands. The Fisheries Department monitors a small portion of locally managed marine areas on request from local communities and subject to availability of budgeted resources. This will contribute to a baseline of information about the extent to which Vanuatu's biodiversity is currently conserved, and where short-comings can most strategically be addressed.</p> <p>It is anticipated that Vanuatu will be in a better position to establish national targets for the conservation of ecosystems and habitats in five years time.</p>		

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water	X		Legislation to provide an enabling framework for watershed management. Management of the Tagabe River Watershed. The National Biodiversity Strategy and Action Plan allocated priority to conservation of the biodiversity of Creek Ai, (Efate), Lake Letas (Gaua) and Petaview catchment (Epi).
c) Marine and coastal	X		Establishment of a marine protected area around Hat Island. Facilitation of an active network of locally managed marine protected areas. Declaration of Vanuatu's EEZ as a whale sanctuary.
d) Dry and subhumid land			N/A
e) Forest	X		Updating of the National Forest Inventory to better guide forest management. Lowland rainforest is recognized as the conservation priority. Facilitation of an active network of locally managed forest protected areas.
f) Mountain		X	
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			X
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into some sectoral strategies, plans and programmes			
Please provide details below.			
<p>The global target has not been directly incorporated into relevant plans, programmes and strategies. Targets that have been set are sectorally determined, and have been established without detailed reference to global biodiversity targets.</p> <p>Initial priorities at both national and sectoral levels have focused on enabling biodiversity conservation. Significant progress has been made towards these goals since the second national report. This includes</p> <ul style="list-style-type: none"> • <u>Establishing the legal framework</u>: The Environment Management and Conservation Act (2003) provides for Environmental Impact Assessment, species protection and registration of conservation areas. The Water Resources Management Act (2003) enables protection of watersheds and water quality. The Code of Logging Practice (1998) has been fully implemented and has good adherence from the timber industry. Amendments to the Forestry Act (2001), Fisheries Act (1987) and Fisheries Regulations (1987 and proposed revisions) provide for more effective management of natural resources. • <u>Developing administrative procedures</u>: Progress has been made in deploying administrative procedures that give effect to the new laws for biodiversity conservation, resource management and environmental impact assessment. Procedures for locally managed marine protected areas have been strengthened and receive support from government and NGO agencies. • <u>Education and awareness raising</u>: All natural resource sectors have on-going commitments to ensure people are well informed about the legal framework and administrative procedures that 			

manage national biodiversity. The Department of Forestry has staged training for Timber Licensees about environmental responsibilities under the Code of Logging Practice (1998). The Environment Unit promotes awareness of the new requirements for consideration of biodiversity within Environmental Impact Assessments. The Fisheries sector has focused on management of resources at risk of depletion and locally managed coastal marine conservation areas.

- Biodiversity research and documentation. The Vanuatu Environment Unit facilitated consultations on the management and coordination of research leading to recommendations for establishment of a Scientific Research Council and improvements in biodiversity inventory. The Unit facilitates and encourages biodiversity research by foreign research bodies. The Agricultural Department is hosting projects that enable diversity of key food crops to be documented and recognised.

Two priorities for conservation of ecosystems are mangroves and lowland forests. Specific targets and mechanisms for conservation of these ecosystems have yet to be determined.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- The Water Resources Act (2003) and the Environment Management and Conservation Act (2003) are now in place and implemented.
- Landowners and communities are receptive to advice on reforestation, afforestation and protection.
- Timber harvesting operators are trained and licensed. Operators now harvest selectively and a good composition of forest is retained. Clearing of forest is now done purposely for needs foreseen by farmers rather than as an unintended consequence of logging.
- Consultation over creating an enabling environment for scientific research has progressed and draft legislation for a National Scientific Research Council is in preparation. Research results are now received and held in country adding to availability of biodiversity information.
- Communities and resource owners are actively approaching officers of the Department of Forestry, the Department of Fisheries and the Environment Unit for help in initiating conservation activities that are consistent with local needs and goals.
- Conservation plans have been developed for five priority tree species.
- The Forestry Act (2001) is to be amended to provide for the conservation and sustainable use of mangrove ecosystems.
- The National Herbarium now collects a wider range of specimens including fern and fern allies, gymnosperms and angiosperms. Field collections are more frequent and the Herbarium now has a computerised database of the records. This information will inform future targets.

Negative trends and status in relation to targets stated above:

- Community interest in locally managed marine and terrestrial protected areas often exceeds the capacity of government and non-government agencies to provide effective support and advice.
- Locally managed marine and terrestrial protected areas meet local goals but may not always contribute to effective conservation of ecological systems.
- In recent decades the area and composition of Vanuatu's forest resources has changed dramatically – forested areas are smaller in size and area, extensive areas have been converted to agriculture, a number of species have been selectively removed and invasive creepers dominate large areas that were once under forest
- Training for timber licensees has been curtailed due to lack of funds for on-going work.
- There remain only two legally recognised conservation areas throughout the country: Vatthe Conservation Area and the President Coolidge/Million Dollar Point Historical site, both on Santo island.

V) Please provide information on indicators used in relation to this target.

Stock assessment to quantify the rate of recovery with a focus on selected resource species (both terrestrial and marine).

Area converted from forests to agricultural land.

Number and area of locally managed protected areas.

VI) Please provide information on challenges in implementation of this target.

Many constraints make this target difficult for Vanuatu to address.

- Vanuatu remains a least developed country with most of the rural population living a subsistence or semi-subsistence lifestyle. The consequences of poverty are compounded by Vanuatu's high population growth rate (3%) which places growing subsistence and commercial pressure on the limited resource base of the small islands. It is neither politically nor economically feasible for large tracts of land to be reserved from human use on what are relatively small heavily used islands.
- Vanuatu's Constitution provides for inalienable traditional tenure to land and the resources on that land. Unlike many countries, the government cannot readily acquire land for conservation purposes. Protected areas can only be established by the landholders and with the support of members of the landholder family or clan and resources users, or through formal fixed term lease arrangements. An initial attempt to lease land for conservation purposes lapsed due to government's inability to meet recurrent lease payments.
- There is limited information on Vanuatu's ecosystems and their integrity and resilience. It is not clear to what extent shifts in resource management meant to encourage more sustainable resource use have been effective in ensuring the nation's ecosystems are preserved. For example it is not known which biodiversity elements are adequately protected by the mosaic of small local protected areas. Nor is it known to what extent the move from clear felling to selective harvesting of preferred species protects forest biodiversity.
- Holistic approaches to resource management and conservation have been encouraged by most natural resource sectors. However, while the importance of cross-sectoral work is now well accepted there remain logistical weaknesses that at times limit capacity and motivation to plan and act cross-sectorally, and there are gaps in biodiversity knowledge that mean holistic approaches are not always realised. It is hoped the GEF funded National Capacity Self Assessment Project will enable some of these weaknesses to be addressed.
- The Department of Forestry has yet to identify funding to update the Forest Resource Inventory

VII) Please provide any other relevant information.

Vanuatu is a nation of small islands supporting a subsistence society. Almost all locations have economic, cultural and social uses. Consequently conservation of ecosystems can not be divorced from the context of sustainable use.

Target 1.2	Areas of particular importance to biodiversity protected	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
<p>Vanuatu's National Biodiversity Strategy and Action Plan (National Biodiversity Strategy and Action Plan) (1999) identified priority areas for protection of biodiversity. These include Petaview catchment (Epi), Creek Ai (Efate), Lake Letas (Gaua), mangroves, remnant vegetation on the island of Tanna, insectivorous bat roosting and nursery caves, and <i>Birgus latro</i> habitat in the Torres Islands.</p>		

Additional targets identified since publication of the National Biodiversity Strategy and Action Plan are marine areas around Hat Island (Efate), isolated sea mounts, and lowland rainforest .

Measures to protect the biodiversity of these targeted locations have yet to be developed.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water	X		Conservation of Late Letas, Petaview catchment, and Creek Ai
c) Marine and coastal	X		Establishment of a protected area at Hat Island. Strengthening of a network of locally managed Marine Protected Areas (MPAs) Reserving sea mounts from commercial fishing.
d) Dry and subhumid land			N/A
e) Forest	X		Conservation of remnant vegetation on Tanna. Conservation of lowland rainforest habitat for <i>Agathis spp.</i> , <i>Santalum austrocaledonicum</i> and <i>Endospermum sp.</i> .
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Vanuatu's National Biodiversity Strategy and Action Plan (National Biodiversity Strategy and Action Plan) (1999) identified a small number of priority areas for protection of biodiversity. They include:

- Preservation of the aquatic biodiversity of Petaview catchment, Creek Ai and Lake Letas.
- Management of mangroves on Malekula, Efate, Santo and Vanua Lava.
- Development of conservation plans for remnant vegetation on the island of Tanna.
- Bat roosting and nursery caves on Malo, Northwest Malekula, Vanua Lava, Santo and Efate.
- Protection of Coconut Crab habitat in the Torres Islands.

Additional specific operational targets identified since publication of the National Biodiversity Strategy and Action Plan are

- Establishment of a marine protected area and cultural heritage reserve at Hat Island.
- Conservation of the range of coastal marine biodiversity through locally managed marine protected areas.
- Conservation of lowland rainforest.

The Department of Forestry and landholders have identified potential locations for conservation of forest species *Agathis spp.*, *Santalum austrocaledonicum* and *Endospermum sp.*. However the areas need further survey before conservation can proceed.

The Environment Management and Conservation Act (2003) provides a mechanism for the protection of any site that possesses unique genetic, cultural, geological or biological resources; or constitutes the habitat of species of wild fauna or flora of unique national or international importance; or merits designation under the *Convention Concerning the Protection of World Cultural and Natural Heritage*.

The initial site registered under this mechanism is the Vatthe Conservation Area.

The Government of Vanuatu also has a National Parks Act although this has not been deployed.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- Several community based conservation and sanctuary areas have been in place for over 10 years: Loru Protected Area, Vatthe Conservation Area, Ringhi te Suh (Maskelynes), Hideaway Island (Efate) and Narong Marine Reserve (Uri Island), Mystery Island Reef (Aneityum).
- Several new community based conservation areas have been established, notably Nguna-Pele Marine Protected Area, Epi, Central Pentecost, Lelepa (Marine Protected Area), Mangaliliu (Marine Protected Area), Spuaki Conservation Area (Nguna), Wiawi (Malekula)
- There are many small local protected tabu and resource management areas declared under custom authority. The number has not been quantified. Johannes and Hickey (2002) observed 51 marine resource management measures within a sample of 21 villages but did not consider non-marine sites.
- A GEF funded project that commenced in 2005 allows the Environment Unit to initiate work to foster conservation of Lake Letas (Gaua) and remnant vegetation on Tanna.

Negative trends and status in relation to targets stated above

- The Erromango Kauri Protected Area, a priority conservation initiative of the Department of Forests, was formalised through the lease of land in 1995. The Forestry Department was unable to meet recurrent lease costs and so the Lease has lapsed. Long term security of this area is uncertain with logging companies interested to gain access.
- An historic World War II site - "Million Dollar Point" and the WWII grave of the US Troop Ship "President Coolidge" - remain the only formal marine protected areas. While they contribute to marine conservation this role is secondary to their historic value.
- Intra and inter community disputes over resource access and ownership rights negatively affect many community based conservation initiatives, with disputing parties not adhering to resource management decisions. Poaching of designated resources from locally managed marine protected areas is also a problem. Such disputes affect the extent to which locally managed protected areas contribute to biodiversity protection.

V) Please provide information on indicators used in relation to this target.

The number of protected areas and the area of land protected.

Adherence to resource management decisions within protected areas.

Stock assessment of selected biological resources.

The Environment Unit will trial the "most significant change" and "threat reduction" approaches to monitor the impact of conservation initiatives on Tanna, Santo and Gaua.

VI) Please provide information on challenges in implementation of this target.

- Most agencies face financial and human resource constraints that limit their ability to convert established policies into practice. Achievements are often realised gradually over an extended period.
- Inalienable traditional land tenure means that conservation priorities can only be met with the consent and compliance of landholder groups. Initiatives can not proceed where this agreement is not forthcoming.
- Community based protected areas often have goals that relate to economic, socio-political and cultural issues as much as biodiversity conservation (Whyte et al, 1998; Whyte et al, 1999). Failure to understand the underlying community goals and reasoning, may lead to false

assumptions about the benefits these areas provide for biodiversity conservation.

- There is no quantitative data that establishes the extent to which community based resource management initiatives contribute toward meeting national biodiversity conservation commitments.
- Poverty often drives landholders and resource users to adopt livelihood strategies that are not fully compatible with biodiversity protection.
- Disputes between and within landholder groups can undermine the biodiversity conservation outcomes of locally managed protected areas.

VII) Please provide any other relevant information.

Within Vanuatu all land and associated resources are vested in traditional owners. While land can be leased, ownership of land is inalienable. Consequently decisions on protection and management of resources can only proceed with the consent of the traditional landholders. An initial attempt to formalise a protected area by leasing land on Erromango was unsustainable because of limited government capacity to meet recurrent lease payments and the limited capacity of the government as lessor to support conservation management.

Emphasis is now placed on voluntary community based management with technical advice from government. This approach requires adequate community understanding and commitment to biodiversity conservation goals. Where understanding and commitment to biodiversity conservation is weak conservation measures are often short lived. Further, while community based resource management initiatives may meet community resource management goals they do not always address national biodiversity conservation goals (Whyte et al, 1998).

Box IV.

Goal 2	Promote the conservation of species diversity	
Target 2.1	Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
<p>Vanuatu's National Priorities and Action Agenda (Government of the Republic of Vanuatu, undated) places priority on ensuring natural resources are used sustainably. Where concerns have emerged that resource use practices may lead to decline in the population of species Vanuatu agencies have deployed legal mechanisms, awareness raising and replenishment programmes.</p> <p>Operational targets have been set at a sectoral level to arrest decline and rebuild populations.</p> <ul style="list-style-type: none"> • The Department of Forestry has established species specific conservation strategies for five high priority timber and fruit tree species: <i>Endospermum medullosum</i>, <i>Santalum austrocaledonicum</i>, <i>Agathis macrophylla</i>, <i>Agathis silbae</i> and <i>Intsia bijuga</i>. These conservation strategies provide for conservation of these economic species both by reducing risk of over exploitation and conserving the range of genetic materials. • The National Forestry Extension Workplan has the target of establishing 100ha of woodlots per year to reduce pressure on natural forest ecosystems. The focus of woodlot plantings have been <i>Endospemum medullosum</i> and <i>Santalum austrocaledonicum</i>. Where appropriate enrichment plantings have also been undertaken in regenerating forests. • The Fisheries Department has instituted regulations under the Fisheries Act (1987) to prevent depletion of stocks of <i>Trochus niloticus</i>, <i>Turbo marmoratus</i>, <i>Holothuria slabra</i>, <i>Birgus latro</i>, <i>Charonia tritonis</i>, <i>Panulirus spp. Paribus caledonicus</i>, corals and aquarium fish. These include 		

- stock enhancement programmes (*Trochus niloticus*, *Holothuria slabra*)
- closures during breeding seasons (*Birgus latro*)
- size limits (*Birgus latro*, *Charonia tritonis*, *Trochus niloticus*, *Turbo marmoratus*, *Panulirus spp. Paribus caledonicus*)
- Catch limits and quotas (*Birgus latro*)
- Licensing of operators (aquarium coral and reef fisheries)
- Prohibition of damaging harvesting technologies (e.g. dynamite fishing).
- Plans to declare Vanuatu's EEZ as a whale sanctuary.

These measures will be further strengthened by amendments to the Fisheries Regulations under preparation in 2005 and regional encouragement of the reintroduction of *Tridacna gigas*.

The Environment Management and Conservation Act (2003) allows the Minister responsible for the Environment to regulate to control the taking or use of specified species, although this mechanism has yet to be applied.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal	X		Maintenance of economic populations of <i>Trochus niloticus</i> , <i>Turbo marmoratus</i> , <i>Holothuria slabra</i> , <i>Birgus latro</i> , <i>Charonia tritonis</i> , <i>Panulirus spp. Paribus caledonicus</i> , corals and aquarium fish. Creation of a whale sanctuary.. Reintroduction of <i>Tridacna gigas</i> .
d) Dry and subhumid land			N/A
e) Forest	X		Conservation strategies for five high priority timber and fruit tree species: <i>Endospermum medullosum</i> , <i>Santalum austrocaledonicum</i> , <i>Agathis macrophylla</i> , <i>Agathis silbae</i> and <i>Intsia bijuga</i> .
f) Mountain		x	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Vanuatu's National Biodiversity Strategy and Action Plan (National Biodiversity Strategy and Action Plan) recommends management of economic species to prevent decline in their range or abundance and highlights the additional need for conservation of several non-economic species: *Erythrura cyaneovirens*, *Pteropus spp.*, *Crocodylus porosus*, insectivorous bats, and a range of endemic plant and animal species of limited range.

Vanuatu's National Forest Policy (2000) and Forestry Department Work Plans include strategic action points that reduce the risk of decline of selected biodiversity. These include:

- Studies and field trials to develop capacity to promote natural regeneration after timber harvesting.
- Planting of priority species including replenishment planting of heavily used species such as *Endospermum medullosum*.
- Studies into the cultivation of *Santalum austrocaledonicum* and establishment of wood lots of *Endospermum medullosum* and *Santalum austrocaledonicum* to reduce harvesting pressures on wild stands.
- Development of measures that protect natural forests, plantations and their products from pathogens, insect pests and fire.
- Implementation of the five priority tree conservation plans.

Fisheries Department priorities are supported by allocations in the Department's fiscal budgets and include replenishment programmes for *Trochus niloticus* and *Holothuria slabra*. To reduce the risk of decline of economic species strengthened Fisheries Regulations were drafted in 2005. These include restrictions on the use of fishing gear, management measures for Beche de Mer, declaration of a whale sanctuary within Vanuatu's EEZ and a 15 year ban on harvesting of *Turbo marmoratus*.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- Reseeding of targeted resources such as *Trochus niloticus* and commercial holothurian species in over fished areas;
- Good compliance with the *Birgus latro* closed season in the two Provinces where it has been applied;
- Proposed revisions to the Fisheries Regulations (1987) to reduce the risk of depletion of marine resources. They provide for:
 - a) quotas for commercial species such as *Trochus niloticus* (550 tonnes/yr) and sea cucumber;
 - b) maximum and minimum size limits for commercial fisheries resources;
 - c) restrictions on the use of fishing gears and apparatus such as beach seine nets.
- Studies of regeneration now inform the Forestry sector on the management of regeneration following timber harvesting. Replenishment plantings are now encouraged where the regrowth of harvested species falls beneath expectations.
- The Forestry Department is hosting work to identify and assess the pests and diseases affecting forest stands.
- Afforestation and reforestation initiatives have shifted to focus on indigenous species. Department of Forestry nurseries concentrate on *Santalum austrocaledonicum*, *Endospermum medullosum*, *Canarium indicum*, and *Terminalia spp.*

Negative trends and status in relation to targets stated above

- Work to restore, maintain or reduce the risk of decline of species has focused on species of economic importance to the fisheries and forestry sectors. Very little work has taken place on the broader range of species, or the integrity of natural ecosystems as a whole.
- Fisheries management initiatives of the Fisheries Department aim to arrest depletion of populations but do not address maintenance of species' diversity. It has been assumed marine species are uniform throughout the archipelago.
- The national budget to the Environment Unit is inadequate to allow the office to engage in field based conservation activities. All such work is through donor funded conservation projects that

are of fixed term duration.

- With closure of the SPRIG project the Forestry Department has limited capacity to implement the priority tree conservation plans.
- There is limited data to inform management of Vanuatu's threatened terrestrial and marine species.

V) Please provide information on indicators used in relation to this target.

Stock assessment of selected biological resource(s).

Forestry work focuses on the distribution, abundance and size class of selected timber species.

In addition the Environment Unit will trial the "most significant change" and "threat reduction" approaches to monitor the impact of conservation initiatives on Tanna, Santo and Gaua.

VI) Please provide information on challenges in implementation of this target.

- Vanuatu's Government agencies face severe capacity constraints that limit their capacity to meet national priorities and targets. Vanuatu has 6 Provinces. The Environment Unit is only represented in the capital Port Vila. In three of the Provinces the Departments of Fisheries and Forestry have only a single officer. In Torba Province they have no representation at all. Budgets are inadequate to allow for broader conservation measures. This has significant repercussions for the ability of agencies to promote awareness of species population trends and monitor compliance with regulations.
- While laws are applied to the commercial harvesting of priority species, these are often waived, or do not apply to subsistence harvesting. This reflects in part a reluctance to interfere in local subsistence resource use and management, recognition of the constitutional rights of traditional landholders to resources, and in part the limited capacity to enforce compliance with regulations.
- Material needs have increased over the past few decades. Many communities that agree to participate in conservation and resource management initiatives often hold expectations for short term material benefit. If this expectation is not met they may seek alternative strategies to meet their immediate needs. It is difficult to foster and maintain conservation commitment if the community's opportunity cost is high.
- Landholders are under considerable economic pressure to harvest stands of economically valuable resources such as *Agathis spp* or *Santalum austrocaledonicum*. Material incentives that justify a landholder's decision to retain stands of these species need to be identified and promulgated.
- It is not known the extent to which distribution of seedlings and young shellfish as part of stock enhancement and regeneration projects may reduce genetic diversity as a result of genetic material from a single or few provenances being widely circulated beyond their natural range.
- The Forestry Department has difficulty collecting and propagating adequate seeds of *E. medullosum* and *Santalum austrocaledonicum* to meet the demand. Private nurseries are encouraged.
- There remains a tendency for farmers and investors to discount the economic potential of indigenous species in preference for cosmopolitan commercial commodities well known in international markets. As a consequence there is a need for the economic and environmental value of indigenous species to be assessed and promoted to landholders and farmers. The Department of Forests, Agriculture and Fisheries would benefit from development assistance to support trials of domestication and marketing of indigenous species.
- The National Forest Plan (2000) envisages a Forest Sector Plan that distinguishes between protection and production forests. To date it has not been possible to attract donor funding for this activity.

VII) Please provide any other relevant information.

Box V.

Target 2.2	Status of threatened species improved		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			X
Please provide details below.			
<p>There are a number of specific national targets that address the status of threatened species.</p> <p>There are no recorded threatened marine flora.</p> <p>Threatened marine fauna include <i>Birgus latro</i>, <i>Charonia tritonis</i>, <i>Crocodylus porosus</i>, <i>Dugon dugong</i>, <i>Hippopus hippopus</i>, <i>Tridacna spp</i>, <i>Chelonidae</i> and a range of corals. Of these <i>Tridacna gigas</i> is feared extirpated from Vanuatu's coastal environments in the last 20 years. Regulations under the Fisheries Act (1987) are designed to reduce usage risks to threatened species. Additional protection to Leatherback Turtles has been provided in revised Fisheries Regulations proposed in 2005. Isolated sea mounts and volcanoes may host many new and novel species but the status of these is indeterminate.</p> <p>Records of threatened terrestrial plants reflect families and genera that have historically attracted scientific or enthusiast attention. They include a number of orchids and palms, many of which are endemic or of limited range and several used species including <i>Santalum austrocaledonicum</i> and <i>Agathis spp</i>. Only a few of these species have received the detailed scientific attention necessary to inform the development of species level conservation plans. These include <i>Carpoxyton macrospermum</i>, <i>Santalum austrocaledonicum</i>, <i>Agathis macrophylla</i>, <i>Agathis silbae</i>. The Forestry Department has planting targets for several of these priority indigenous species.</p> <p>Similarly records of threatened terrestrial fauna reflect families and genera that have historically attracted scientific or enthusiast attention. They include all four Flying Fox species, the naturalised species <i>Brachylophys fasciatus</i>, <i>Chaerephon bregullaie</i>, and the birds <i>Charmosyna palmarum</i>, <i>Ducula bakeri</i>, <i>Ducula pacifica</i>, <i>Erythrura cyaneovirens</i>, <i>Falco peregrinus</i>, <i>Megapodius freycinet</i> and <i>Callicolumba sanctaecrucis</i>. There is in-country perception that a range of endemic species currently classified as indeterminate or poorly known are threatened. However, there is inadequate scientific capacity to confirm their status. None of these species are subject to national targets, although there is an embargo on commercial use or export of endemic species perceived to be threatened.</p> <p>Vanuatu is a signatory to the Convention on International Trade in Endangered Species, which provides additional protection to threatened species that might otherwise be affected by commercial trade.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal	X		<i>Dermocheyles coriacea</i> totally protected. Vanuatu's oceans declared a whale sanctuary.
d) Dry and subhumid land		X	N/A
e) Forest	X		Conservation plans for <i>Santalum austrocaledonicum</i> , <i>Agathis macrophylla</i> , <i>Agathis silbae</i> . and 2 other priority species. 100 ha or woodlot plantings per year of <i>Santalum austrocaledonicum</i> and <i>Agathis silbae</i> .
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	X
c) Yes, into sectoral strategies, plans and programmes	X
Please provide details below.	
<p>“Managing and protecting species under threat” is a goal of the National Biodiversity Strategy and Action Plan (1999). Given the limited information base about many of Vanuatu’s threatened species initial actions have focused on threat reduction: watershed management, management of invasive and alien species, management of resource use and awareness of threatened biodiversity to motivate local level conservation initiatives.</p> <p>The Department of Forests worked closely with the South Pacific Regional Initiative for Forest Genetic Resources to develop understanding of the diversity within three threatened tree species: <i>Santalum austrocaledonicum</i>, <i>Agathis macrophylla</i>, <i>Agathis silbae</i>. This work has informed propagation and silviculture initiatives and been incorporated into conservation plans for each of these species. The Department actively encourages planting of these species to reduce pressures on wild populations. Quotas are in place setting annual harvesting limits of <i>Santalum austrocaledonicum</i>.</p> <p>The Department of Fisheries has conducted research on <i>Birgus latro</i>, <i>Turbo marmoratus</i>, and <i>Trochus niloticus</i> to inform conservation and stock management measures. As there has been no success in mass producing <i>Turbo marmoratus</i> seeds in hatcheries and the fishing pressure continues to be high proposed revisions to the Fisheries regulations (2005) provide for a 15 year moratorium on commercial harvests of <i>Turbo marmoratus</i> and provide full protection for <i>Dermocheyles coriacea</i>. Legal provision has been made for declaration of Vanuatu’s EEZ as a whale sanctuary.</p> <p>There has been little progress since the last report in addressing the status of threatened species that do not have economic use values.</p>	
IV) Please provide information on current status and trends in relation to this target.	
<p><u>Positive trends and status in relation to targets stated above</u></p> <ul style="list-style-type: none"> • Legal provisions for management of subsistence and commercial species have been strengthened with passage of the Environment Management and Conservation Act (2003), the Water Resources Act (2003), the National Forest Plan (2000) and proposed amendments to the Fisheries Regulations (2005). The Environment Management and Conservation Act (2003) in particular enables implementation and enforcement of specific environmental policies and regulations, regulation to protect endangered species, consideration of the impacts of projects and development activities on biodiversity, and management of threats such as invasive species. • Recent initiatives to fully protect <i>Dermocheyles coriacea</i> and Whales are a significant shift from the dominant sectoral focus on resources of subsistence or commercial economic value. <p><u>Negative trends and status in relation to targets stated above</u></p> <ul style="list-style-type: none"> • Species such as <i>Santalum austrocaledonicum</i> and <i>Agathis spp.</i> have been harvested since the mid 1800s and are now scarce resources. <i>E. medullosum</i> occurs on most of the Central and Northern islands of Vanuatu, however, due to selective harvesting of the best trees it too is perceived to be at risk. While woodlots and plantation forests will reduce pressures on wild stands, there remain concerns about the limited population remaining in natural lowland forests. • Despite long term efforts to replenish stocks of over-exploited marine resources and regulate their use, replenishment is still required in many parts of the country to maintain the base population and the population of <i>Turbo marmoratus</i> continues to decline. • A living <i>Tridacna gigas</i> has not been sighted in the past two decades and is believed extirpated from Vanuatu’s coastal waters. Several plant species including the monospecific palm <i>Carpoxydon macrospermum</i> are at risk of becoming extinct in the wild. 	

- The driving force behind recent work is maintenance of populations of commercially important resources. Comparable ecological information is not available for the full range of threatened or at risk species present in Vanuatu.

V) Please provide information on indicators used in relation to this target.

The dominant technique for assessment of species management targets are stock assessments.

VI) Please provide information on challenges in implementation of this target.

- There is limited scientific knowledge about Vanuatu's biodiversity at variety, species and ecosystem levels, and many endemic species are of indeterminate or unknown conservation status.
- Conservation initiatives at a community level tend to target species of commercial, subsistence or cultural value. However many of the species feared to be threatened in Vanuatu are not used and may not be of interest to local populations. It is a challenge to raise awareness and respect for endangered species for their more esoteric existence and biological values.
- Development assistance has enabled detailed conservation plans to be prepared for five high priority forest tree species. Resources are needed if this level of detail is to be extended to the full range of endangered species in Vanuatu, and if these plans are to be effectively implemented.
- Threats that place endangered species at risk are greatest in the heavily used lowland habitats. Conservation of these areas requires government and political commitment to preservation of representative and high value lowland rainforest blocks, development of strategies to acquire land for conservation purposes, and financial commitment to enable management and reduction of threats to their biodiversity.
- A suite of factors including Vanuatu's system of traditional land tenure, poverty, and emerging materialism has led to a situation where landholders frequently anticipate material incentives for participation in externally fostered conservation programmes that go beyond local resource management priorities. There is a need for consistent and cross sectoral work to identify appropriate and cost effective incentives.
- Gaps between local perceptions of what is endangered and formal classifications of endangered status lead to confusion as to where conservation priorities lie. External technical and financial inputs would be required to assist with status assessment of Vanuatu's biodiversity and assigning formal conservation status to the range of endemic species.
- Regulations that protect biodiversity vulnerable to over exploitation are applied primarily to commercial activities, and may not be enforced equally for subsistence and cultural uses. For species that have high subsistence and cultural uses formal regulation may fail to achieve its biodiversity conservation goals.
- Enforcement of formal regulations designed to protect threatened biodiversity is limited, especially in islands where government officers are not permanently stationed. The few government officers posted outside the two towns often hold a diversity of responsibilities. Where there are fears that policing and enforcement may create a barrier to community cooperation with other duties officers may be hesitant to do more than issue warnings or requests.

VII) Please provide any other relevant information.

With the increasing conversion of lowland forests to agriculture it is inevitable that the Government will have to make decisions on whether to forego conservation goals or acquire low land areas specifically for conservation of lowland species. Where primary forest is unavailable, it may be necessary to re-establish populations of lowland species in appropriate locations. This initiative could be combined with the provision of areas for recreational use of the two urban populations. However, there is little in-country experience in balancing conservation with recreation and limited financial capacity to do so.

Box VI.

Goal 3	Promote the conservation of genetic diversity		
Target 3.1	Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			X
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			
Please provide details below.			
A national target has not been set with respect to conservation of genetic diversity of economically valuable species. However, a range of sectoral work programmes are providing information and capacity that will enable a national target to be set.			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Document variation and establish in-situ and ex-situ collections of <i>Dioscorea</i> , particularly <i>Numularia</i> and <i>Alata</i> , and other root crops, including <i>Ipomoea batatas</i> , <i>Colocasia esculenta</i> and <i>Xanthosoma sagittifolium</i> .
b) Inland water		X	Genetic variation of freshwater species not assessed.
c) Marine and coastal		X	Genetic variation of freshwater species not assessed
d) Dry and subhumid land			N/A
e) Forest	X		Document and conserve variation present in <i>Endospermum medullosum</i> , <i>Santalum austrocaledonicum</i> , <i>Agathis macrophylla</i> , <i>Agathis silbae</i> and <i>Intsia bijuga</i> .
f) Mountain		X	
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into sectoral strategies, plans and programmes			X
Please provide details below.			
Over the past 15 years research has begun to document the range of variation in economic plants indigenous to Vanuatu. Much of this work draws upon traditional knowledge of cultivars and varieties of cultivated and semi-cultivated species, and the Herbarium makes efforts to record local names and knowledge of specimens collected.			
<ul style="list-style-type: none"> • Varieties of <i>Kava methysticum</i> have been described in detail. • Varieties of <i>Barringtonia spp.</i>, <i>Burckella spp.</i>, <i>Canarium spp.</i>, <i>Dracontomelon vitiense</i>, <i>Inocarpus fagifer</i>, <i>Pometia pinnata</i>, <i>Spondias dulcis</i>, <i>Syzygium malaccense</i>, <i>Terminalia catappa</i> have been 			

described from 20 locations.

- Five priority timber species *Endospermum medullosum*, *Santalum austrocaledonicum*, *Agathis macrophylla*, *Agathis silbae* and *Intsia bijuga* have been described from 15 locations.
- Provenance studies have been conducted by the Department of Forestry for *Endospermum medullosum*, *Santalum austrocaledonicum*, *Canarium indicum* and *Terminalia catappa*.
- Common root crops *Numumularia sp.*, *Alata sp.*, *Ipomoea batatas*, *colocasia esculenta* and *Xanthosoma sagittifolium* have been partially described.

The National Forestry Herbarium and the Department of Agriculture and Rural Development facilitate these programmes.

As a result conservation of the diversity of used species has been incorporated into the sectoral work programmes of the Department of Agriculture and Rural Development and the Department of Forestry. Ex-situ collections of Yams (ca.300), Taros (ca. 260), Kumala (52), Manioc (26), Kava (60), and Coconuts (60) have been established at the Vanuatu Agricultural Research and Training Centre and selected landholders are participating in a small number of in-situ collections of taro and yam varieties.

Greatest detail exists for the monospecific genus *Carpoxyton macrospermum* which has a variety of traditional uses, and which has been subjected to DNA analysis. Several traditional crops have been studied for their genetic variation with molecular markers and the results show there is significant genetic diversity present.

Comparable attention has yet to be given to the genetic diversity of harvested fish and wildlife. Descriptions of birds and flying foxes to subspecies level were undertaken many decades ago. There has been little recent work beneath species level on Vanuatu's fauna, or that confirms initial subspecies and variant descriptions.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- In the last 5 years there has been a surge of interest in the genetic level diversity of species with economic uses.
- An *ex situ* collection of kava cultivars has been established. Small *in-situ* and *ex-situ* collections of taros, yams, kava, sandalwood, kauri, Terminalia and Canarium have been established, although these are not comprehensive.
- Traditional knowledge of coconut and taro varieties has been documented on Vanua Lava.
- Property rights to traditional cultivars are being discussed, although not yet fully protected by law.
- Several traditional crops have been studied for their genetic variation and the results show there is significant genetic diversity in Vanuatu.

Negative trends and status in relation to targets stated above

- Most research into the genetic diversity of economic plants has a strong applied focus: to enable superior commercial cultivars to be selected for wider commercial production. Anecdotal reports are that promotion of a small number of preferred cultivars of crops such as taro leads to reduced plantings of less popular cultivars and may lead to the gradual loss of traditional cultivars and knowledge of those cultivars.
- Work to document genetic level diversity of economic species has mainly been initiated by international research and development agencies within the context of development projects. However some researchers have incompletely recorded details of source of origin, breeder rights and associated traditional knowledge. As a consequence, some early collections fail to adequately record traditional ownership / property rights to the cultivars taken into collections.
- DNA analysis of *Carpoxyton macrospermum* in 1995 alerted authorities that genetic variation was only present in a handful of wild palms: all other specimens appeared to have been cultivated from a single strain. Unfortunately, there have been inadequate resources to apply the results to protect the three variants that remain in the wild.
- Property rights to traditional cultivars are not yet fully protected by law and not yet fully appreciated by field workers.
- The distribution of cultivars by the Departments of Forestry and Agriculture and stock replenishment programmes of the Department of Fisheries are undertaken without consideration

of provenance and the potential for contamination or weakening of the local gene-pool.

- Very little work to identify genetic variation has been done in the marine sector. There is an assumption that marine species are wide ranging and consistent throughout the Indo Pacific marine biogeographic unit. The widespread stock replenishment of commercial species may mean that it is no longer possible to assess natural variation of these species throughout the archipelago.

V) Please provide information on indicators used in relation to this target.

Number of species for which genetic variants have been described.
Number of species and varieties recorded in *in situ* and *ex situ* collections.

VI) Please provide information on challenges in implementation of this target.

The concept of conservation of genetic diversity is complex and not well understood by community and national leaders and often unrecognized by professional staff employed in natural resource sectoral agencies. The high level of illiteracy and low participation in secondary education are factors that exacerbate this situation in Vanuatu.

Interest in selected genetic strains has been generated through the promotion of commercial opportunities that will follow from production of consistent varieties with suitable characteristics for marketing and export. It is a challenge to expand on this initial work to include biodiversity conservation interests and to identify and conserve the genetic diversity of a wider range of species.

Erosion of the genetic diversity of some of the potential commercial tree crops is a major concern of staff of the Forestry Department. No work beneath species level has been done on many species of interest to Vanuatu including *Pleiogynium timoriense*, *Intsia bijuga*, *Agathis silbai*, *Dysoxylum gaudichaudianum*, *Garuga floribunda* and *Pterocarpus indicus*. However, there is extremely limited capacity to address these concerns. Vanuatu lacks in-country scientific and taxonomic capacity to conduct genetic research and is dependent on externally led research and development projects. Ideally several forest officers need to be trained in the field of forest genetics to assist in the future identification and conservation of the genetic diversity of the tree species of Vanuatu.

VII) Please provide any other relevant information.

Countries providing development assistance are encouraged to demonstrate best practice with respect to recording and documenting sources of cultivars and information about these cultivars including ownership rights. Failure of some researchers to do this adequately has led to some individuals expressing reservations about external researchers participating in ethno biological work.

Goal 4	Promote sustainable use and consumption.	
Target 4.1	Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
Sustainable use of biodiversity-based resources is the only conservation precept explicitly within the		

National Priorities of Vanuatu's Priorities and Action Agenda (Government of the Republic of Vanuatu, undated), the document that guides national development. Priority has been given to sustainable use rather than preservation because of Vanuatu's context of inalienable traditional land and resource ownership, small islands and subsistence livelihoods and the government focus on maintaining or expanding the formal economy.

It follows that **sustainable use** is the core precept underlying most in-country biodiversity conservation initiatives, it is espoused in the mission statement of the National Biodiversity Strategy and Action Plan and addressed within sectoral policies and work plans. The concept is also addressed through the local resource management initiatives of traditional landholders and users.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		Site stable farming systems
b) Inland water	X		Catchment and freshwater resource management
c) Marine and coastal	X		Sustainable commercial and subsistence fisheries
d) Dry and subhumid land			N/A
e) Forest	X		Sustainable forest management. An annual allowable cut of 68,000 cubic meters. Reforestation target of 80,000 seedlings annually. 100 ha of woodlots annually
f) Mountain		X	Targets for forests are applicable.

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Sustainable use is explicit within the priorities of the National Development Priorities and Action Agenda (Government of the Republic of Vanuatu, undated) and addressed within the sectoral priorities of the natural resource sector: "maintain sustainability standards". Specific actions and projects towards this priority are identified within sectoral policies and work plans.

Sustainable use is embodied in the mission statement and objectives of the National Biodiversity Strategy and Action Plan (1999), which recommends specific actions for the sustainable use and consumption of biodiversity for present and future benefit, actions to provide an enabling administrative environment and actions to strengthen the legal context for sustainable management of biodiversity. There has been steady progress towards these goals.

The overall goal of the National Forest Policy (2000) is to ensure the sustainable management of Vanuatu's forests to achieve greater social and economic benefits for current and future generations. This goal is addressed in all strategies and work plans of the Forestry Department, including the work of the National Herbarium to document botanical biodiversity throughout the country; the work of the forest utilisation section; and the forestry extension officers throughout the country. The operational and legal mechanism through which sustainable forest management goals are addressed is the Code of Logging Practice (1998) and the provisions of the Forestry Act (2001) with respect to licensing forest operations. Logging operations are also required to adhere to the provisions of the Water Resources Act (2003) to protect and maintain water catchments and associated environmental processes. Enrichment planting and reforestation are actively encouraged to minimise negative impacts on forest systems following logging.

The guiding policy for the fisheries sector is the fisheries section of the National Priorities and Action Agenda (*op. cit.*), which has a twin focus on resource management and commercialisation of coastal and reef fisheries. The Fisheries Act (1987) provides the legal basis for sustainable management of the country's inshore resources and ensuring products derived from these resources are managed and used in a sustainable manner. The Act is implemented through the Fisheries Regulations (1987) which provide for closed seasons (*Birgus latro*); limited harvesting (*Chelonidae spp.*), size limits (*Birgus latro*, *Charonia tritonis*, *Trochus niloticus*, *Turbo marmoratus*, *Panulirus spp. Paribus caledonicus*); catch limits and quotas (*Birgus latro*); licensing of operators (aquarium coral and reef fisheries); and controls on potentially unsustainable harvesting technologies (e.g. dynamite fishing). The Fisheries Department is also actively engaged in stock replenishment where concerns arise that resource use practices have reduced resource stocks.

The Department of Agriculture and the Farm Support Association has studied strategies for sustainable farming. Work over the last decade has included research trials of site stable agriculture (as distinct from the traditional shifting agriculture) to promote sustainable use of land resources. There has been some uptake of these strategies by subsistence farmers in areas where land resources are limited and soil depletion has affected crop yields, and where erosion and soil depletion of sloping land has been a problem.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- Stocks of *Trochus niloticus* have been replenished within designated locally protected marine areas in ten locations spread across seven islands. Replenishment is combined with protection and enforcement of seeded nursery areas by landholders and their chiefs under traditional marine taboos. Positive results have been recorded.
- A quota system and minimum size limits help to ensure stocks of *Trochus niloticus* and *Turbo marmoratus* are not affected by the shell button industry. Larger shells which have excellent reproductive value but low commercial value will be further protected under proposed amendments to the Fisheries Regulations (2005).
- Sustainable management of the beche-de-mer fishery was strengthened by proposed amendments to the Fisheries Regulations (2005). New regulations provide for annual quotas and size limits for the commercial species of beche-de-mer. Trials of stock enhancement of *Holothuria slabra* are planned.
- Additional human resource capacity and an increased budget for the Fisheries Department are proposed from 2007.
- The Department of Forestry has moved from its initial policy of promoting introduced timber species to its current position of promoting cultivation of indigenous species.
- The Forestry Department has hosted and facilitated studies to better understand natural regeneration after logging. There is now greater capacity to manage regeneration after logging as a future timber crop and to maintain ecosystem values.
- Through a pilot project on Santo Island the Forestry Department has gained capacity to more effectively involve communities and landowners in sustainable management of forestry operations. Through a second project the Department has gained experience in engaging landowners in monitoring and promoting regeneration after logging.
- The national year of forests in 2003 was instrumental in focusing national attention of Vanuatu's forest resources and ecosystems, and included initiatives for distributing and planting a million seedlings.

Negative trends and status in relation to targets stated above

- While considerable gains have been made in moving forest operations to a sustainable basis landholders frequently choose to convert forest systems to agricultural land to enable participation in the formal economy and generation of household income.
- The Department of Forestry has decided that rather than propagating a wide range of species the Department's nurseries will concentrate on planting four species *Santalum austrocaledonicum*, *Endospermum medullosum*, *Canarium indicum*, and *Terminalia catappa*. While these are important commercial species, replanted and woodlot areas will not support the biodiversity present in more complex forests.
- A national forest inventory was conducted over the period 1988 – 92 to inform and guide forest

management. The initial inventory was envisaged to have a 10 year life. However the Department lacks the resources needed to properly update the information held.

V) Please provide information on indicators used in relation to this target.

Stock assessment is used to measure sustainability in fisheries and forestry operations.

Area of land converted to permanent agriculture.

Area of regenerating forest.

Environment Unit will be trialing threat reduction criteria on Gaua, Santo and Tanna within the context of a conservation project.

VI) Please provide information on challenges in implementation of this target.

- Sustainable systems of agriculture, forestry and fisheries are commonly driven from the priority of maintaining or enhancing economic outputs. Biodiversity conservation is not always a direct goal of programmes of the natural resource sectoral agencies, and this is reflected in a failure to direct environment management initiatives at the whole of ecosystem level. As a consequence activities addressing one or two species or practices in isolation may adversely affect biodiversity as a whole e.g. promotion of a small range of cultivars regardless of provenance, or limited attention to non-tree species within forest management. It is a challenge to build motivation and momentum to achieve a broader ecosystem-based perspective on sustainable resource use.
- Ni-Vanuatu families struggle to generate cash income to meet household needs such as access to education and health services. Logging of forests and conversion of forest land to agricultural land provide accessible and familiar economic solutions for many households. It is a challenge both to identify and promote appropriate and competitive economic opportunities from natural ecosystems and to promote agro-forestry systems that maintain diversity while allowing economic output to expand. In the absence of economic alternatives the change from present economic practices will be limited.
- Vanuatu's Constitution provides for traditional tenure of land, coastal marine areas and associated resources. As a consequence biodiversity conservation and natural resource management are contingent on landholder support. This presents a challenge for national initiatives to foster sustainable land and marine resource use. Extension, education and information exchange are essential mechanisms to foster sustainable resource use practices. However limited access to information and education services, limited personnel and limited operational budgets makes it difficult to achieve the level of extension service necessary to effectively influence resource use practices.
- Decentralisation policies of the National Government have allocated Provincial Authorities responsibilities for management of biological resources, especially in coastal marine areas. However, the Provincial Authorities have extremely limited capacity to take on this role.

VII) Please provide any other relevant information.

Primary Production has historically focused on introduced crops. Initial work on indigenous species such as *Terminalia catappa* and *Canarium indicum* has revealed considerable economic potential. Effort is required to build on this foundation both to promote commercialisation of these species, and to ascertain the potential of the full range of products available from local biodiversity. However, in-country agencies lack resources to devote to this work.

Box VII.

Target 4.2		Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced	
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established		X	
Please provide details below.			
<p>Sustainable use of biological resources is the only conservation precept explicitly within the National Priorities of Vanuatu's Priorities and Action Agenda (<i>op. cit.</i>), the document that guides national development. Priority has been given to sustainable use rather than preservation because of Vanuatu's context of inalienable traditional land and resource ownership, small islands and subsistence livelihoods.</p> <p>Reduction in unsustainable uses of biological resources underpins many in-country resource management initiatives and is addressed within sectoral policies and work plans. The concept is also addressed through the local resource management initiatives of traditional landholders and users.</p> <p>A number of specific sectoral targets exist, including size limits, quotas, closed seasons and application of traditional taboo restrictions. These are discussed by sector below.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Qualitative targets have been set for site stable farming systems to reduce unsustainable use of land resources.
b) Inland water		X	
c) Marine and coastal	X		Quotas, size limits and closed seasons are set to reduce risks of unsustainable harvesting of commercial species
d) Dry and subhumid land			N/A
e) Forest	X		An annual allowable cut of 68,000 cubic meters. Reforestation target of 80,000 seedlings annually.
f) Mountain		X	Forest targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan		X	
c) Yes, into sectoral strategies, plans and programmes		X	
Please provide details below.			
<p>Unsustainable agricultural land use practices are apparent in declining fallow periods, reduced yields and increasing reliance on crops suited to less fertile soils (e.g. a shift from yams to manioc). The Department of Agriculture and Rural Development and the Farm Support Association promote strategies for site stable agriculture which offer significant biodiversity benefits compared with traditional shifting cultivation. Work has focused on promotion of use of leguminous shrubs and ground covers, mulching, crop rotation and slope stabilisation. Greatest uptake of these strategies</p>			

has been in areas where land resources are limited, soils depletion is apparent in reduced crop yields and where erosion and depletion of sloping land has been a problem.

Based on a 1993 forest inventory the Department of Forests has set an annual sustainable cut of 68,000 cubic metres of timber, an annual reforestation target of 80,000 seedlings and woodlot planting targets of 100 ha annually. During timber harvesting operations species of multi-use value for fruits, nuts, biodiversity or custom practices are usually reserved from logging. Sustainable logging practices are enforced through the Code of Logging Practice (1998), avoiding un-necessary negative impacts on non target species and biodiversity. The Department of Forests has provided training to operators in the requirements of the Code of Logging Practice (1998). Landowners or communities whose forests are to be logged are required to understand the conditions of the contracts and of the Code of Logging Practice (1998).

Based on stock assessments the Department of Fisheries has set quotas and catch limits for almost all targeted commercial fishery resources including Lobsters, Trochus, Green Snail, Coconut crabs, and Beche de Mer. Restriction on use of fishing gear such as seine and gill nets and fish fences will come into force from 2006. Licensing provisions regulate the export aquarium fish and coral trade. Stock assessments inform fisheries authorities of the adequacy of measures in place. Where existing measures have not realised sustainable harvesting levels additional measures are considered: as evidenced by proposed amendments to the Fisheries Regulations that provide a 15 year ban on sales of *Turbo marmoratus* shells and full protection of Leather Back Turtles from 2006.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- To increase the rate of replanting and forest replenishment the Department of Forestry promotes private nurseries and gives free technical assistance to private nurseries.
- More farmers wish to participate in small scale wood lot programmes than the Department of Forests is able to assist. Over 100 farmers have established small woodlot plantings of up to a hectare in size.
- The Fisheries Regulations (1987) have been tightened to address several short falls and gaps and ensure greater ability to prevent unsustainable resource harvesting.
- There has been increased public debate on the sustainability of fishing activities, especially in the areas of reef fisheries and the aquarium trade.
- Provincial Fisheries Extension Officers have been given legal capacity to seize illegal equipment or harvests or impose on the spot penalties for violation of the Fisheries Act (1987).
- License numbers have been reduced on different categories of fisheries to ensure adequate control and monitoring of operations.

Negative trends and status in relation to targets stated above

- Despite considerable emphasis on community based coastal resource management and given poor results from trials of mass-producing juvenile *Turbo marmoratus* in hatcheries, the decline in stocks of *Turbo marmoratus* has not been arrested.
- Fisheries Regulations (1987) are not consistently enforced across both commercial and subsistence harvesting. This creates a situation where, for example, an undersized shell can be harvested for its meat but not sold to a shell processor.
- Given the forestry sectors emphasis on the Code of Logging Practice (1998) and regeneration, the greatest source of forest loss is conversion of forests to agricultural systems. Draft land clearing guidelines developed by the Vanuatu Pasture's Improvement Project in 1992 to maintain environmental functions and biodiversity have not been carried forward and there are minimal controls on land clearing for agricultural purposes.
- While Forestry Department nurseries have met their production target of 80,000 seedlings per annum monitoring suggested successful establishment in the field was closer to 60,000 seedlings per annum. Sustainability targets will only be met if planting levels allow for mortality in the field.
- Considerable responsibility for licensing and fisheries management within a 6 nautical mile zone from the coast has been devolved to Provincial Governments. However there remains considerable confusion surrounding implementation of this decision as most Provincial Governments lack financial, technical and human resources capacity to engage in fisheries management. Only one Province has commenced the process of developing by-laws, and these

need further consideration of important issues such as fisheries management, surveillance and enforcement. At present de facto arrangements allow the Fisheries Department to continue to exercise these responsibilities.

- Construction of roads by logging companies encourages people to settle in what were previously inaccessible areas of natural forest, usually with the agreement of the landowners who nominally or legally lease the land. This progresses to conversion of forests to subsistence and commercial agriculture eroding the forest composition and reducing biodiversity.

V) Please provide information on indicators used in relation to this target.

Stock assessments.

Fisheries Officers monitor commercial factories, restaurants and holding facilities to prevent illegal use or consumption of undersized, or otherwise protected, resources.

Monitoring growth of woodlot plantings.

Natural regeneration trials and studies conducted under the European Union funded LEARN project and the German funded Regional Forestry Programme.

VI) Please provide information on challenges in implementation of this target.

- Monitoring by the Forestry Department shows that commercial operators usually observe forest resource harvesting guidelines designed to ensure timber harvesting is sustainable. However, under Vanuatu's Constitution it is the landowners who have right to decide on the type of land use system. Rather than leaving forest to regenerate before further harvesting many landholders invite small portable operators to help them remove remaining trees and convert the land to agricultural purposes.
- The Forestry Department has established Provincial nurseries to provide stock for regeneration and woodlot plantings. However there is only one nursery serving a single Province, and the nurseries may be considerable distance, even on a different island, from the sites where trees are needed. There is a need to further encourage privately owned nurseries and replanting initiatives.
- Most forest planting and woodlot programmes are of a very small size and narrow species diversity.
- To adequately inform resource harvesting decisions and log allocations within timber licenses the Forest Resource Inventory System database and Vanuatu Resources Information System data sets should be updated every 10 years. The Forestry Department lacks resources to do this.
- Political and economic priority is given to expansion of commercial agriculture while enabling subsistence farming needs to be met. Work is needed to motivate development of guidelines and controls to ensure agricultural expansion does not unduly affect biological diversity.
- Information gathering and monitoring resource use is costly, time consuming and labor intensive. The limited budget allocations to sectoral agencies limit their capacity to provide sound management advice.
- There is no central data base system that maintains information relating to marine, coastal and terrestrial resources. Information is maintained in a piece-meal manner by various agencies.

VII) Please provide any other relevant information.

Landholders must make economic decisions about how they can best meet their family's needs. Many landholders and their communities recognise the risks posed by loss of biological resources. However, given the prevailing poverty and difficulties rural communities face in accessing social services such as education and health, landholders have few economically viable alternatives to extractive forestry and land conversion.

Box VIII.

Target 4.3		No species of wild flora or fauna endangered by international trade	
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target		X	
c) Yes, one or more specific national targets have been established		X	
Please provide details below.			
<p>As a signatory to the Convention on the International Trade in Endangered Species Vanuatu has a clear goal of managing trade in endangered species. The provisions of CITES apply to a range of <i>Orchidaceae</i>, <i>Arecaceae</i>, <i>Chelonidae</i>, <i>Pteropus spp.</i>, and corals and marine shell fish.</p> <p>As the formal status of many of Vanuatu's indigenous species is unknown, and several species of concern are not formally registered on CITES there are also internal controls on the export of endemic plants and animals whose status is inadequately known or believed to be rare.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal	X		Fisheries Department Order of 2004 prohibits wild harvesting of <i>Tridacna crocea</i> .
d) Dry and subhumid land		N/A	N/A
e) Forest	X		Establishment of plantations of woodlots to reduce pressures on natural timber stands.
f) Mountain		X	Forest sector targets apply
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)		X	
c) Yes, into sectoral strategies, plans and programmes		X	
Please provide details below.			
<p>Objective 2 of Vanuatu's National Biodiversity Strategy and Action Plan provides for policy, planning and legal mechanisms to control the export of plants and animals that are endemic to Vanuatu or that may be locally or internationally rare. In response the Environment Management and Conservation Act (2003) enables the Minister responsible for Environment to issue regulations to control the taking or use of specified species including commercial uses. Appropriate regulations are still to be developed. In the interim policy measures are applied to control the export of living endemic or threatened species. These provisions extend to the export of orchids and wild birds such as <i>Erythura cyaneovirens</i>.</p> <p>As a signatory to the Convention on International Trade of Endangered Species, Vanuatu strictly monitors imports and exports of species listed under the convention to ensure no wild species is</p>			

endangered by trade.

A Fisheries Department Order (2002) prohibits aquarium operators from harvesting wild *T. crocea* species for export.

Strict quotas and licensing provisions are applied to *Santalum austrocaledonicum*. Only two operators are licensed to purchase sandalwood and there is a maximum of 80 tonnes allowed to be purchased.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- The Vanuatu Government has demonstrated its capacity to address concerns about depletion of wild flora and fauna. It has responded to rapid depletion of *Turbo marmoratus* as a result of harvesting for the button trade. New regulations set a maximum as well as a minimum size limit and will put in place a 15 year embargo on sales of *Turbo marmoratus* shells. Similarly, trade of *Santalum austrocaledonicum* is strictly regulated with only 2 operators licensed and an allowable tonnage of 80 tonnes per annum.

Negative trends and status in relation to targets stated above

- While legal provisions are in place to prevent wild flora and fauna being endangered by international trade, human resource, technical and financial capacity to apply and enforce the law is limited.

V) Please provide information on indicators used in relation to this target.

Inspection of consignments prior to export.

Stock assessments.

Area of endangered forest species established as plantations and wood lots.

VI) Please provide information on challenges in implementation of this target.

- The status within Vanuatu of wild species such as *Cyatheaceae spp*, which are exported as carved totems and statues, or *Charonis tritonis* and *Pteropus spp* which are exported as personal souvenirs, are largely unknown. Without more detailed knowledge of Vanuatu's biodiversity it is not possible to make informed management and regulation decisions.
- Several agencies hold authority to manage living resources including permitting the import and export of living resources. This at times has led to unnecessary duplication of effort, or inconsistency in procedure. At times there has been uncertainty as to which authority has right to act in particular situation. A review conducted by a national Biosafety Project has recommended the need to align legislation to ensure a national rather than sectoral focus and to address procedural inconsistencies that may exist.
- Regulations under the Environment Management and Conservation Act (2003) have yet to be developed to control the use and trade of rare and endemic species. While it is recommended this gap needs to be addressed, the Environment Unit is under staffed and lacks adequate capacity.
- CITES regulations only apply where export is trade related. Inconsistencies have arisen when tourists present for personal use rather than trade small numbers of dressed and cooked *Pteropus spp* or souvenir *Charonis tritonis* shells, although they may well have been bought from vendors. Trade in souvenir items has become an important source of income to rural ni-Vanuatu.
- As Vanuatu's economy expands authorities lack the human resources to rigorously inspect consignments prior to exports.
- There have been suspicions about attempts to illegally export several rare species including *Erythrura cyaneovirens* and *Brachylophus fasciatus*. Unfortunately, Vanuatu authorities lack human resource, technical and financial capacity to adequately pursue suspicions.

VII) Please provide any other relevant information.

Vanuatu has a number of species that are currently regarded as being over exploited and are considered rare or endangered in the local context – however these species are not addressed by CITES either because their status remains “unknown” and Vanuatu lacks capacity to seek their listing within the CITES appendices. There is a need for ecological studies of Vanuatu’s flora and fauna, to enable assessment of the status of endemic flora and fauna and to inform management decisions.

Box IX.

Goal 5	Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.		
Target 5.1	Rate of loss and degradation of natural habitats decreased		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			X
Please provide details below.			
<p>Vanuatu’s National Priorities and Action Agenda (<i>Op. cit.</i>) lists maintenance of sustainable primary production systems as a national priority. This priority encompasses activities that arrest decline in soil or reef productivity and decline of forest value.</p> <p>Corresponding activities to arrest loss and degradation of at terrestrial, aquatic and marine environments and restore their productivity and diversity are discussed by sector below.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Promotion of site stable sustainable farming systems that reduce soil degradation and reduce habitat loss through land use change.
b) Inland water	X		Degradation of Tagabe Water Catchment arrested.
c) Marine and coastal	X		Improved local level management and rehabilitation of coastal marine habitats. Destructive fishing practices prohibited.
d) Dry and subhumid land		N/A	
e) Forest	X		Full compliance with the Code of Logging Practice (1998) and post harvesting forest regeneration.
f) Mountain		X	Forest sector targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			X

Please provide details below.

Vanuatu's National Priorities and Action Agenda lists maintenance of sustainable primary production systems as a national goal. This goal encompasses activities that arrest decline in soil or reef productivity and decline of forest value.

The National Biodiversity Strategy and Action Plan assigns priority to measures that will foster sustainable environmental resource use and discourage practices that contribute to resource and habitat decline. Recommended activities address the threats that contribute to environmental degradation including lack of information, and inadequate legal and management systems.

Provisions of the National Forest Policy (2000) and the Code of Logging Practice (1998) minimise any damage to habitat, fresh water and soils from timber harvesting operations. The Forest Department has also conducted field trials and research to prevent negative impacts of timber harvesting on forest habitat quality, with enrichment plantings promoted to address any weaknesses.

Degradation and erosion of soils are the responsibility of both the agriculture and forest department. A long term project on Aneityum is attempting to rehabilitate severe erosion, and several provisions of the Code of Logging Practice (1998) aim to reduce the risk of erosion as a result of timber harvesting.

The Fisheries Act (1987) strictly prohibits the use of destructive fishing practices. A ban on harvesting wild corals has been in place since 2003. Harvesting of wild Giant Clams is also prohibited.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

There has been good acceptance of the provisions of the Code of Logging Practice (1998) and these have led to reduced impacts from commercial forest operations. They have been complemented by work with landholders to improve capacity to conduct sustainable forest management and manage natural regeneration.

Historically mangrove clearings contributed to loss of productivity of marine ecosystems. However in response to awareness raising and education the situation has improved, and mangrove clearing is no longer a widespread activity.

Improved forest harvesting practices have reduced the incidence of siltation and run off adversely affecting downstream coral habitats

Negative trends and status in relation to targets stated above

Participatory resource assessments conducted by a range of government and non government agencies suggest local experience throughout Vanuatu is of habitat loss, loss of productivity and other changes as a result of increased resource use pressures, including the use of modern technologies to harvest wild resources, increasing population and economic pressures. This change is driven at the local landholder level and is largely unaddressed and unregulated. It extends to the marine sector. This experience suggests that despite the range of priorities and measures that have been implemented the overwhelming trend is of continuing significant land use change and habitat degradation.

Draft agricultural land clearing guidelines developed in the early 1990s by the Vanuatu Pastures Improvement Project have not progressed, and trials of sustainable agriculture systems have lapsed due to lack of funding. Conversion of forest ecosystems to agricultural ecosystems is unregulated and largely determined by landholders in response to perceived economic opportunities from cropping, grazing or leasing land. Low land forests are at particular risk of continuing habitat loss from land conversion.

The poor quality of many land conversion operations is believed to be have had significant impacts on fresh water resources, as many villagers complain that their surface water is increasingly perennial in nature and that the rate of recharge of ground water aquifers has reduced. There is inadequate data to quantify or confirm these observations.

Degradation of coastal marine ecosystems has also been associated with fish fencing, over harvesting of marine resources and use of unsustainable fishing technologies such fine filament nets and physically breaking the coral to extract clams and other shells. However, the influence of terrestrial activities on marine resources is not well known.

V) Please provide information on indicators used in relation to this target.

On site monitoring of commercial forestry and fishing activities.
Stock assessments.

VI) Please provide information on challenges in implementation of this target.

- Progress has been made over the past decade to manage development activities and reduce the impacts land uses such as timber harvesting and coastal fisheries have on biodiversity. However, significant habitat degradation also follows natural risks including cyclones, earthquakes and volcanic activity and human induced risks such as sea level rise and climate change. A village on a low lying island of the Torres Group has had to relocate as a consequence of salt water intrusion. Tectonic uplift is believed to have contributed to a decline in mangrove habitat in the Port Stanley – Crab Bay area of Malekula. Volcanic ash and acid emissions have reduced the productivity of habitats on Ambrym Island. Cyclones cause considerable damage to coral reef systems. These natural events often have significant localised impact on natural habitats in excess of the impacts from manageable human behaviours.
- Vanuatu’s laws provide for traditional tenure of land, reefs and associated resources. Rather than allowing natural forest to regenerate many landholders take the decision to invite portable sawmills to salvage remaining trees and allow land to be converted to agriculture. This trend is significant but has not been adequately quantified. In the absence of enforceable guidelines for agricultural clearing significant loss of biodiversity and degradation of land systems is likely to result.
- Landowners or communities are not adequately informed of the value of maintaining habitat and protecting key landscape and habitat elements. This reflects not the lack of information, but the limited capacity of government agencies and NGOs to provide extension and information services to all rural areas. Information exchange options are limited and usually expensive: TV, radio and newspaper coverage of rural areas is slight and literacy levels are often low. Current national policies give priority to promotion and extension services that offer improved economic outcomes.

VII) Please provide any other relevant information.

Negative trends partly reflect the lack of ecosystem wide approaches within primary production management. Many marine and terrestrial resource management initiatives focus on individual species and products rather than maintenance of the integrity of the whole ecosystem.

Box X.

Goal 6	Control threats from invasive alien species.	
Target 6.1	Pathways for major potential alien invasive species controlled	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		X
c) Yes, one or more specific national targets have been established		
Please provide details below.		
Pathways for introduction of living things are controlled by the Vanuatu Quarantine and Inspection Services, through the Animal Importation and Quarantine Act (1997) and the Plant Protection Act (1997). The draft Biosecurity Policy is currently before government. If endorsed it strengthens measures to manage introduction of living organisms. The Policy includes provisions for risk		

assessment, management of genetically modified organisms and prior informed consent.

In addition the Environment Management and Conservation Act (2003) requires assessment of the environmental impact of the introduction of living organisms. There is a national policy on discharge of ballast water by international vessels.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		Vanuatu Quarantine and Inspection Services (VQIS) monitors and controls pathways for the introduction of living organisms, including conducting pre-import risk assessment and border surveillance. Specific natural resource sectors participate in this process as appropriate.
b) Inland water	X		
c) Marine and coastal	X		
d) Dry and subhumid land		N/A	
e) Forest	X		
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Vanuatu's National Biodiversity Strategy and Action Plan gave priority to managing the threats posed by introduced organisms. Strengthened risk assessment procedures, consideration of potential for impact on biodiversity within pre import risk assessment procedures and controls on the pathways of introduction have been incorporated into a Draft Biosecurity Policy that will go before the Council of Ministers in 2006.

The Environment Management and Conservation Act (2003) includes provision for Environmental Impact Assessment of the introduction of an alien species. In most cases this assessment will be integrated into the VQIS pre-import risk assessment.

Natural resource sectoral agencies now better recognise the principal role of VQIS in controlling and monitoring imports including controlling the threat from invasive alien species. The VQIS recognises potential environmental risk as a reason for prohibiting an import.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

Bilateral assistance over the past five years has strengthened Vanuatu Quarantine and Inspection Services (VQIS) which now has greater capacity to control imports and intercept non-permitted organisms. A draft Biosecurity Policy currently before government recognises that VQIS will lead in permitting and overseeing imports of alien species, with provisions for wide participation in the Pest Risk Assessment process and a broader definition of risk. The draft policy recognises environmental invasiveness as a legitimate reason for prohibiting imports.

After poor results from plantations of introduced timber species (poor growth, inability to withstand cyclone damage, and invasiveness) the Department of Forestry now focuses on indigenous species in plantation and regeneration programmes.

Negative trends and status in relation to targets stated above

Many potentially invasive species are beneficial when properly managed. Consequently organisms have often been introduced into Vanuatu in the context of short term development projects (e.g. the Vanuatu Pastures Improvement Project, Seaweed Farming Trials, Tilapia aquaculture trials). However, sectoral agencies have demonstrated limited capacity to manage introductions adequately post introduction. Propagation material passes informally from farmer to farmer, without adequate instruction and supervision in management requirements.

Biosecurity initiatives have emphasised border control. It is recognised that there is inadequate capacity in country to control the internal spread of invasive species and eradicate species once established. As a consequence invasive alien species established within Vanuatu tend to be mobile and expanding in range (e.g. *Achatina fulica*, *Cordia alliodora*, *Wasmannia auropunctata*, "Millipatte", *Panicum maximum*, *Euglandina rosea* etc.)

While ships are prohibited from discharging ballast into Vanuatu's coastal waters there is no capacity to respond to an accidental marine introduction.

V) Please provide information on indicators used in relation to this target.

Regular assessment of introduced species held in contained environments by staff of VQIS or responsible sectoral agencies

The Draft Biosecurity Framework places onus on the importer to regularly report on any introduction, including its effective containment and provisions to ensure no movement into the wild.

VI) Please provide information on challenges in implementation of this target.

- There is inadequate capacity in country to effectively monitor introduced species, to control internal spread of invasive species and eradicate species post entry. VQIS officers are stationed at only 4 locations throughout the country and so the Department lacks the human resources and physical presence to control inter-island and intra-island movements and inspect sites where alien species are believed to be established. Scientific capacity for monitoring including equipment, biological laboratory facilities and technical capacity are also inadequate.
- Communities often intrinsically associate alien species to the Department or programme that facilitated their introduction (as witnessed by common nomenclature). In this way communities assign responsibility to external agencies long after programmes and departmental interest has lapsed. Where individual land owners may attempt to control a pest, they may not receive cooperation from adjoining landholders and so eradication is impossible. Considerable work is needed to foster local voluntary engagement in monitoring, control of movements and eradication work.
- Permitted introductions normally provide for specific beneficial purposes and there is an assumption that recommended management requirements will be maintained in the long term. This has often not occurred. Third parties acquire propagation material with little understanding of the recommended management requirements and as the species moves from a controlled managed situation it becomes invasive. Greater education efforts are needed to ensure that proper husbandry practices are adhered to at all times.
- Information to enable timely and thorough pest risk assessment is not available in-country. Vanuatu is reliant on access to regional and international networks to obtain information and technical inputs.

VII) Please provide any other relevant information.

Pre-import risk assessment often hinges on a relative comparison of economic benefits against the economic cost of potential risks. Given limited capacity in natural resource economics the resultant decision is often value based, and tends to discount potential long term costs. Reasons underlying acceptance of a degree of environmental risk include poverty and political priority given to expansion of the formal economy.

Box XI.

Target 6.2	Management plans in place for major alien species that threaten ecosystems, habitats or species		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			X
Please provide details below.			
<p>The Vanuatu Quarantine and Inspection Services Plans with technical assistance from the Secretariat of the Pacific Community are implementing plans for control of <i>Sida spp.</i> and <i>Eichhornia crassipes</i>. Two biological control agents <i>Calligrapha pantherinea</i> (to control <i>Sida acenta</i>, <i>S. rhombifolia</i> and <i>S. refusa</i>) and <i>Neochetina eichhorneae</i> (to control <i>Eichhornia crassipes</i>) are currently undergoing contained field trials. Preliminary results are encouraging.</p> <p>Populations of <i>Wasmannia auropunctata</i> that are established in the Banks Islands are subject to monitoring and containment measures. Management measures include surveillance of inter island shipping and passenger flights.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Biological control of <i>Sida rhombifolia</i> . Monitoring of agricultural pests including (<i>Bactrocera trilineola</i>), Pico (<i>Solanum torvum</i>), Lantana (<i>Lantana camara</i>), fire ant (<i>Wasamania auropunctata</i>) and Broom Weed (<i>Sida rhombifolia</i>).
b) Inland water		X	
c) Marine and coastal	X		Ballast water not to be discharged in coastal waters.
d) Dry and subhumid land			N/A
e) Forest	X		Create market for <i>Cordia alliodora</i> timber. Seedlings of introduced forest species no longer distributed.
f) Mountain			Forest sector targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			X
Please provide details below.			
<p>The financial costs of containment and eradication of invasive alien species that threaten ecosystems, habitats or species are beyond the resources of Vanuatu. Trials of two biological control agents <i>Calligrapha pantherinea</i> (to control <i>Sida acenta</i>, <i>S. rhombifolia</i> and <i>S. refusa</i>) and <i>Neochetina eichhorneae</i> (to control <i>Eichhornia crassipes</i>) are underway with assistance from the Secretariat of the Pacific Community.</p> <p>Greatest priority has been assigned to containment of <i>Wasamania auropunctata</i> to its present</p>			

distribution in the Banks Group of Island. This involves regular surveillance of air and ship traffic, but resources do not allow all movements of small craft to be monitored nor allow boats to be intercepted at isolated ports. There is hope that *Wasamania* may be targeted by a regional invasive species project – but this is yet to be determined.

The Vanuatu Quarantine and Inspection Services also actively monitors several agricultural pests and environmental weeds: *Bactrocera trilineola*, *Solanum torvum*, *Lantana camara* and *Sida rhombifolia*. However, resources do not allow work beyond monitoring.

The Vanuatu Quarantine and Inspection Services has a generic contingency plan for control of any accidental introduction of organisms of high quarantine risk.

The timber tree *Cordia alliodora* is a widespread invasive alien. The Department of Forestry aims to create interest in *Cordia* timber to shift its status from an un-used invasive to an economic resource. The Department prevents further spread of introduced species by no longer issuing seed and seedlings of introduced plants.

IV) Please provide information on current status and trends in relation to this target.

Historical attempts to control alien invasive species through biological control measures have had variable success. *Euglandina rosea* was introduced to control *Achatina fulica* and while it has had some success for this purpose it also predated on native snail fauna. *Uroplata girandii* was introduced to contain *Lantana camara* with relative success.

Positive trends and status in relation to targets stated above

- Financial support from the Secretariat of the Pacific Community and the Food and Agriculture Organisation has allowed the Vanuatu Quarantine and Inspection Services to establish a collection of invertebrates of quarantine significance. This collection has given VQIS information on alien invertebrates and where they occur.
- Following the work of the National Biodiversity Strategy and Action Plan Projects there is wider recognition of the environmental threat posed by invasive species, and acceptance that bio security issues must be considered.

Negative trends and status in relation to targets stated above

- There is general acceptance that it is only a matter of time before *Wasamania auropunctata* becomes more widely established.
- The financial costs associated with control and management of invasive species prevent effective action being taken at a national level.
- There has been little success to date in mobilising community support for local initiatives to control invasive species. A survey by Tapisuwe (2002) suggested rural people generally placed responsibility on government agencies for invasive alien species.

V) Please provide information on indicators used in relation to this target.

Number of invasive alien species present in Vanuatu that threaten ecosystems, habitats or species.

Monitoring of extent or populations of invasive species at affected and unaffected sites.

Number of quarantine interceptions.

Monitoring of management and containment measures post introduction.

VI) Please provide information on challenges in implementation of this target.

- Control and eradication of environmental invasives is prohibitively costly and fails to receive political priority – even though the long term impacts can be severe. In-country work has focused on improving border control and reducing the risk of additional alien invasive species being introduced.
- Many of the species that have become environmental invasives provide economic benefits when they are properly managed in agriculture, forest and fishery activities. Comparisons of their economic benefit with their environmental costs requires detailed economic comparison. In the absence of formal capacity to conduct cost benefit analysis decisions are often based on

subjective assumptions. Decision making is even more difficult where the economic rationale includes aspects of human health and well being. Only where invasive species are also pests within production systems is it easy to reach cross sectoral consensus on their management.

- Vanuatu has limited technical capacity and research funds to allow the ecological impact of invasive species to be documented and monitored.

VII) Please provide any other relevant information.

Box XII.

Goal 7	Address challenges to biodiversity from climate change, and pollution.		
Target 7.1	Maintain and enhance resilience of the components of biodiversity to adapt to climate change		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			X
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			
Please provide details below.			
<p>Vanuatu has participated in regional and national projects to build understanding of climate change issues, to mainstream climate change planning and to reduce community and national vulnerability to climate change. The National Climate Change Coordinator is based in the Meteorological Department, and is supported by a National Climate Change Coordinating Committee.</p> <p>This body of work has focused on reducing the vulnerability of human communities and infrastructure and fostering adaptation at community and national level. The country has yet to address the resilience of biodiversity to adapt to climate change. Preparatory work is limited to monitoring of coral reefs at two locations around Efate Island to document long term population shifts and trends.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Promotion of sustainable farming systems and food security to strengthen the capacity of agricultural environments to adapt to changes in climate.
b) Inland water		X	
c) Marine and coastal	X		Monitoring of coral reefs to document long term trends.
d) Dry and subhumid land			N/A
e) Forest	X		Developing capacity to understand and address Climate Change through representation on the National Climate Change Coordinating Committee and participation in Climate Change monitoring activities.
f) Mountain			Forest sector targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and			

strategies?	
a) No	X
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	
c) Yes, into sectoral strategies, plans and programmes	
Please provide details below.	
<p>Vanuatu has a National Strategy for the Implementation of the United Nations Framework Convention on Climate Change. However the strategy gives priority to reducing human vulnerability, adaptation and mitigation and does not directly address biodiversity conservation issues nor the resilience of the components of biodiversity to adapt to climate change.</p> <p>The Forestry Department is building capacity to understand and address climate change. Two officers have received training in climate change monitoring and reporting, and the Department participates as a member of the National Climate Change Coordinating Committee.</p> <p>The Fisheries Department has established two long term monitoring sites adjacent to Efate Island through which it hopes to understand changes in coral reef environments including climate change impacts.</p> <p>The Department of Agriculture indirectly addresses the resilience of agricultural systems to climate change through its sustainable farm systems and food security programmes.</p>	
IV) Please provide information on current status and trends in relation to this target.	
<p>Climate change scenarios suggest quite significant impacts on biodiversity in coastal environments : due to sea level change, sea warming and salt water intrusion. Two reef monitoring points off Efate Island are beginning to document any changes.</p> <p>Forest and agricultural biodiversity are equally likely to be impacted due to changes such as more extended and severe dry seasons, increased impact from severe tropical storms and greater incidence of high volume rainfall events leading to run off and erosion rather than ground water replenishment.</p> <p>While these risks are significant the limited government resources have been directed initially towards understanding and addressing human and economic vulnerabilities.</p>	
V) Please provide information on indicators used in relation to this target.	
<p>Monitoring of species present and their density at two coral communities off Efate Island helps to document bleaching events and their impacts on associated biodiversity.</p> <p>Long term monitoring of climatic data.</p>	
VI) Please provide information on challenges in implementation of this target.	
<ul style="list-style-type: none"> • Climate change is a complex threat that is not well understood. Decision makers and planners tend to discount climate change risks for more immediate pressures faced by Vanuatu communities such as poverty, natural disasters and inadequate access to health and education services. Consequently while the threats to Vanuatu's environment and economy are significant, they do not receive priority attention. Where they are considered the focus is on reducing the vulnerability of human communities and their assets and infrastructure. • Climate Change Scenarios are coarse and there is a lack of information on the impact of climate change on biodiversity at island or national level. This is exacerbated by the very limited baseline information that can be gleaned from the few ecological studies of biodiversity in Vanuatu. Far more scientific work is required before the impacts of climate change on biodiversity will be well enough understood to allow national priorities to be set. 	

Please provide any other relevant information.

Box XIII.

Target 7.2		Reduce pollution and its impacts on biodiversity	
a) No			
c) Yes, one or more specific national targets have been established		X	
Please provide details below.			
<p>Vanuatu's initial goal has been to establish legal mechanisms for the control of pollution. This has been realised with the Environment Management and Conservation Act (2003). The Act provides for environmental impact assessment of development activities, including management of any impacts on biodiversity. The Act also enables the Minister responsible for Environment to bring into effect a range of subsidiary regulations and national plans, including regulations and plans addressing pollution. Specific regulations have yet to be developed.</p> <p>The Maritime Act provides for specific controls on marine pollutants, including oil spills, port control and operational standards. In recent years the Ports and Maritime Authorities have been active in prohibiting discharges from ships into Vanuatu's Ports.</p> <p>National targets have also been established for emission of green house gases.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Environment assessment prior to development approval.
b) Inland water			Environment assessment prior to development approval.
c) Marine and coastal			Environment assessment prior to development approval. Inspection of boats to ensure operational standards.
d) Dry and subhumid land			N/A
e) Forest			Environment assessment prior to development approval. Enforcement of the Code of Logging Practice (1998) to minimise erosion and sedimentation.
f) Mountain			Forest sector targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into sectoral strategies, plans and programmes		X	

Please provide details below.

Vanuatu's initial target has been to establish legal mechanisms that will enable control of pollution. This goal was incorporated into the Environment Management and Conservation Act (2003) which provides for environmental impact assessment of development activities, including management of by-products, management of environmental emissions and management of impacts on biodiversity. Since passage of the legislation administrative arrangements for implementation of environmental impact assessment are now in place. The Act also provides for the Minister to regulate on emissions of pollutants. Pollution regulations have yet to be developed.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- Implementation of the Code of Logging Practice (1998) has reduced the impact of forestry operations on the environment. This includes reducing erosion and associated sediment loadings that can adversely affect aquatic and marine environments. The Forestry Department also actively monitors timber treatment plants to ensure timber treatment chemicals are strictly managed.
- Environmental Impact Assessment procedures introduced in 2003 are readily accepted and adhered to.
- Biofuels based on coconut oil have been introduced as a less polluting alternative to combustion of diesel.
- The Vanuatu Maritime Authority has progressively increased operational standards for inter-island shipping, reducing the risk of accidental pollution of marine environment. Contingency plans exist in the event of accident and oil spill in Vanuatu's two main ports, though capacity to implement the plan is limited.
- Dirty oil can now be collected and exported, reducing the risk of pollution from inappropriate disposal.

Negative trends and status in relation to targets stated above

- Vanuatu lacks laboratory facilities and equipment that are necessary for pollution monitoring and legal enforcement.
- Progress toward the development of policies and regulations subsidiary to the Environment Management and Conservation Act (2003) to provide specific measures to manage environmental emissions has been limited.
- Test results from analysis of water sampling of Port Vila Harbour and Empten and Ekasuvak Lagoons have indicated nutrient enrichment of the lagoon and harbour. Nutrient enrichment impacts on biodiversity and is apparent at a macro level in the high incidence of species such as Starfish and Holothurians which tolerate high nutrient levels. No measures have been taken to address this pollution concern although new hotel and resort developments are expected under EIA provisions to be equipped with appropriate waste treatment facilities.
- Port Vila Municipal introduced a by-law in 2003 against excessive motor vehicle exhaust emissions. However, lack of capacity to test vehicle emissions prevents the by-law from being fully enforced.
- Modern consumer goods are increasingly entering rural areas, where there is limited awareness of appropriate disposal methods and the pollution risks associated with inappropriate disposal of batteries, plastics, treated timber and waste oils. Plastic bags are often used to facilitate lighting of cooking fires.
- Land based marine pollution from the urban areas of Port Vila and Luganville are increasing as the urban population and the manufacturing sector expands. Many households outside the municipal boundary or in informal settlements do not benefit from municipal waste collection service, and not all households choose to pay for waste collection. Inadequately treated human wastes discharged into aquifers from septic and pit toilets contribute to pollution loadings. The only facility for treating dangerous wastes is the hospital incinerator.
- The Forestry Department has recommended that a timber treatment plant at Luganville needs to be relocated to reduce environmental risk. However, the Department of Forests and the Environment Unit lack authority to enforce this recommendation.

V) Please provide information on indicators used in relation to this target.

Forest operations are monitored for compliance with the Code of Logging Practice (1998) following a standard check list.

Periodic monitoring of Port Vila Harbour and Empten and Ekasuvak Lagoons for turbidity, bacteria, and nutrient loadings.

VI) Please provide information on challenges in implementation of this target.

Vanuatu lacks pollution control regulations and policies, and there are limited waste management options available.

Vanuatu lacks the laboratory facilities and scientific equipment to monitor pollution, and present information on pollution that would be acceptable evidence in a Court of Law. Consequently it is difficult to enforce requirements attached to development requests. Further, a successful appeal to the Supreme Court has revealed that the Environment Management and Conservation Act (2003) does not give government officers rights of entry to monitor adherence to environment conditions set through the environmental impact assessment process.

Vanuatu's Ports lack proper facilities for handling wastes from freighters, inter-island vessels and yachts.

There is a need for greater and more structured cooperation between diverse institutions such as the Municipalities, Ports and Maritime Authority, Provincial Administrations and the private sector on management and handling of wastes and hazardous materials.

VII) Please provide any other relevant information.

In Vanuatu pollution concerns often relate to nutrient enrichment due to seepage of inadequately treated human wastes, inadequate provisions for sanitary landfills, and increased sedimentation and turbidity of freshwater and coastal marine waters. However, the small industrial sector has potential to cause significant local impact through inadequate management of solvents, paints, petrochemicals and discharge of emissions and byproducts.

Box XIV.

Goal 8	Maintain capacity of ecosystems to deliver goods and services and support livelihoods.	
Target 8.1	Capacity of ecosystems to deliver goods and services maintained	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
<p>Vanuatu's National Priorities and Action Agenda (undated) gives priority to ensuring sustainable use of goods derived from environmental resources. Corresponding activities that maintain the productivity of ecosystems agricultural, forest and marine environments are discussed by sector below.</p>		

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Promotion of a site stable agricultural systems.
b) Inland water			Maintenance of the Tagabe River Catchment.
c) Marine and coastal	X		Maintenance of the capacity of reefs and associated habitats to meet subsistence and commercial demand for resources. Maintenance of pelagic fish stocks.
d) Dry and subhumid land			N/A
e) Forest	X		Ensure forest operations do not diminish the capacity of forests to deliver goods and environmental services.
f) Mountain			Forest sector targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)			
c) Yes, into sectoral strategies, plans and programmes			X
Please provide details below.			
<p>Vanuatu's National Biodiversity Strategy and Action Plan placed high priority on ensuring sustainable use of environmental resources, but did not separately address the productivity of ecosystems.</p> <p>The Code of Logging Practice (1998) provides a framework to ensure forest operations do not diminish the capacity of forests to deliver goods and services and support subsistence livelihoods.</p> <p>The Fisheries Regulations (1987) were introduced to prevent commercial resource harvesting from reducing the productivity of marine environments. The initial regulations have been only partly effective. The Department now releases hatchery reared <i>Trochus niloticus</i> to enhance depleted wild resource stocks and stocks of <i>Turbo marmoratus</i> remain critically low. Additional regulations approved in 2005 impose strict new controls that better address new fishing technologies and new fishing commodities.</p> <p>Vanuatu's Department of Agriculture and Rural Development has a focus on site stable farming systems. Techniques such as alley cropping, use of legumes and crop rotation help maintain the productivity of agricultural systems without the continual clearing of land required by traditional shifting cultivation.</p> <p>Many community level initiatives to establish fixed term protected areas and taboo sites have been undertaken to ensure the capacity of ecosystems to meet anticipated needs.</p>			
IV) Please provide information on current status and trends in relation to this target.			
<p><u>Positive trends and status in relation to targets stated above</u></p> <ul style="list-style-type: none"> • 80% of ni-Vanuatu live in rural areas and continue to be able to meet household needs from locally available environmental resources. • Locally managed protected areas and tabu sites often have the explicit goal of ensuring environmental goods and services are available to meet anticipated needs. 			

- To maintain the productivity of natural systems Vanuatu's laws prohibit a range of environmentally harmful practices such as clear felling, dynamite fishing and cyanide fishing.
- Environmental Impact Assessment provisions introduced within the Environment Management and Conservation Act (2003) help to ensure new developments do not reduce the ability of ecosystems to provide the range of goods and environmental services, including goods and services used by local subsistence communities.
- There is growing awareness of the importance of water catchments, mangrove ecosystems, coral reefs and sea grass beds in providing environmental services – services such as water supplies, coastal protection, amenity and resource productivity. They are no longer solely valued for their more material resources.

Negative trends and status in relation to targets stated above

- Policies, programmes and regulations to ensure used resources are available to meet long term livelihood needs frequently focus on individual species or technologies. The focus is not on maintaining capacity at the ecosystem level.
- Research trials and field work on site stable agriculture was resourced through donor funds. Since completion of projects the initial momentum has not been maintained.
- Conversion of land to agriculture is the greatest contributing factor to loss of natural habitats. Vanuatu has neither guidelines nor a statutory framework to ensure land clearing for agricultural purposes does not adversely affect ecosystems' ability to provide the range of environmental goods and services.
- In many areas subsistence fisheries are contributing to a decline in stocks of marine resources. However the Fisheries Regulations (1987) are not consistently applied across subsistence as well as commercial use of marine resources.
- Traditional fish poisons are still used through out Vanuatu and can impact on the environment in which they are used.

V) Please provide information on indicators used in relation to this target.

There is no direct monitoring of the goods and services provided by marine and terrestrial ecosystems. Resource stock assessments and commercial catch data serve as de facto indicators. There is some monitoring of stream flow in association with water supply services.

VI) Please provide information on challenges in implementation of this target.

- Vanuatu has limited scientific and technical facilities, and environmental research has received limited financial support from the Vanuatu Government. Information is not available to adequately establish a baseline on the capacity of ecosystems as a whole to deliver goods and services. There is some monitoring of stream flow, forest regeneration and monitoring of ecological parameters at two marine sites off Efate island.
- Most work on environmental resource availability has necessarily focused on individual species (e.g. *Trochus niloticus* or *Santalum austrocaledonicum* or specific locations (e.g. Crab Bay)) and has taken place within development projects financed with bilateral and multilateral assistance but that has often been highly specific and short term.
- While communities have locally generated ideas and initiatives to contribute to maintaining the productivity of their environment, government agencies lack capacity and resources to effectively support them in these endeavours.
- There is a need for greater and more structured cooperation between diverse institutions, including sectoral agencies, Provinces and the private sector on management of resource use to ensure the capacity of ecosystems to provide goods and services are maintained or enhanced.

VII) Please provide any other relevant information.

There has been limited adoption of ecosystem approaches by sectoral agencies. Limited national resources tend to be directed to work at a species level, with a focus on commercial and subsistence resource stocks.

Box XV.

Target 8.2	Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			X
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			
Please provide details below.			
<p>80% of Vanuatu's population live in rural areas and depend on local terrestrial, aquatic and coastal marine resources for their livelihoods, local food security, building materials and health care. Despite the obvious importance of Target 8.2 to Vanuatu no corresponding target has been set at a national level. However, the priorities in the National Priorities and Action Agenda (Government of the Republic of Vanuatu, undated) and the National Biodiversity Strategy and Action Plan that focus on sustainability of natural resource use, address both subsistence and commercial uses. They therefore set indirect goals for maintaining sustainable rural livelihoods.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural	X		Improve local food security.
b) Inland water	X		Protection of water sources (springs, ground water recharge, and riverine systems). Introduce small-scale freshwater aquaculture to strengthen subsistence livelihoods while reducing pressure on natural systems.
c) Marine and coastal	X		Maintain coastal fisheries for both subsistence and commercial purposes.
d) Dry and subhumid land			N/A
e) Forest	X		Selectively reserve from cutting fruit, nut and custom use trees within timber license areas. Promotion of the subsistence and environmental values of forests.
f) Mountain			Forest targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into sectoral strategies, plans and programmes			X

Please provide details below.

Vanuatu's Department of Agriculture and Rural Development has targeted rural women within its Food Security Programme. Activities address both cultivation and harvesting of traditional foods and food preservation, and improve the capacity of rural communities to sustain their food needs following a cyclone or during times of hardship.

The Fisheries Regulations (1987) aim to maintain stocks of resources that are vulnerable to excessive commercial harvesting. Adequate stock is hence maintained for local use. In addition there is a six nautical mile limit reserved for local fishing activities. The Fisheries Department is trialing small scale aquaculture to provide an alternative to wild resources and improve nutrition. The initial focuses for this work are Prawns, Eels and Tilapia.

Officers of the National Herbarium (within the Department of Forests) have worked with subsistence communities and traditional landholders to identify and describe plants of local importance. Information on traditional nomenclature, uses and knowledge about plant resources is managed within the Herbarium's data base. When logging licenses are negotiated local landholders are engaged to identify trees of importance to local livelihoods which are marked to be reserved from timber operations.

Initiatives that have maintained the capacity of biological resources to support semi-subsistence community livelihoods include the management plan for *Birgus latro* in TORBA and SANMA Provinces. This provides for closed seasons and a quota system to ensure sustainability of resource use. *B. latro* is an important resource both for local consumption and as an income source.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- Promotion of agroforestry by the Department of Agriculture and Rural Development and the Forestry Department helps ensure resources needed for subsistence well-being are accessible in the local environment.
- Promotion of reef regeneration, stock replenishment and protected fish nursery areas by the Department of Fisheries.
- Encouragement of local initiatives to manage natural resources that draw upon both traditional and modern scientific precepts and address local resource management needs.

Negative trends and status in relation to targets stated above

- 80% of Vanuatu's population live on their traditional lands and depend on local biological resources for their livelihoods, food security and health care. At present biological resources are adequate to meet people's daily subsistence needs (as evidenced by basic standards of housing and nutritional intake). However resource appraisals demonstrate wide spread concern with resource decline and local perceptions that it is becoming more difficult to meet daily needs. Most rural communities also look to biological resources to support generation of cash income to allow them to increase their access to social services such as education and purchase consumer goods. Dependence on biological resources for non subsistence purposes has put stress on the resource base, and many commercial resources have been depleted. Some smaller islands have recorded net outward migration and this is believed to be partly because of difficulties in meeting livelihood needs locally.
- The National Priorities Action Agenda (Government of the Republic of Vanuatu, undated) gives priority to development of the commercial sector. This is apparent in the range of priorities within the National Priorities and Action Agenda and in the work budgets of most natural resource sectoral agencies. There is concern that rapid land subdivision and development of commercial agriculture, forestry and fisheries is potentially at the expense of maintenance of resources that support subsistence livelihoods. Further work is needed to analyse the economic impacts and identify opportunities to maintain biological resources that support local livelihoods.
- Despite the high participation of women in subsistence farming, harvesting of forest resources and gleaning of marine resources, and their dominant role in providing for the household's daily needs government extension services are primarily delivered by and for men.
- Until quite recently traditional practices that helped to maintain subsistence livelihoods were undervalued and were replaced by methods and ideas introduced by colonial and commercial

interests. As a result significant knowledge and practices that helped to sustain subsistence livelihoods have been forgotten or ceased to be practiced.

V) Please provide information on indicators used in relation to this target.

Monitoring of logging areas to ensure compliance with the Code of Logging Practice (1998).

Stock assessments.

Census and statistical information on rural livelihoods.

Health statistics on nutrition related health disorders.

VI) Please provide information on challenges in implementation of this target.

Vanuatu's system of traditional land and resource tenure provides a challenge for conservation of biodiversity and maintenance of resource that support local livelihoods. Resource owners exercise rights over resources present on their land. This is a particular concern for management of scarce water resources. Catchments typically include several water users and downstream users are easily affected by decisions taken by upstream landholders. It is not uncommon for a land owner to block other's access to a water source, to demand monetary compensation for water piped across his land or to clear an area with disregard for downstream water users. Similar disputes arise over rights of access to marine and terrestrial hunting, fishing and cleaning grounds in forest, agriculture and coastal marine systems.

The high costs of communication and travel between and within islands limit the capacity of government and non-government agencies to provide services that help subsistence communities maintain the biological resources they depend upon.

There is a need for greater and more structured coordination between diverse institutions such as natural resource sectoral agencies, the Municipalities, Ports and Maritime Authority, Provincial Administrations and the private sector to ensure the productivity of natural resources and their ability to support rural economies are maintained.

VII) Please provide any other relevant information.

Government Departments are doing the best they can to maintain the environmental resources that support subsistence rural communities with severely limited financial and human resources. However, present efforts are widely felt to be less than ideal. Additional funds and facilities are needed if this target is to be addressed effectively.

Box XVI.

Goal 9	Maintain socio-cultural diversity of indigenous and local communities.	
Target 9.1	Protect traditional knowledge, innovations and practices	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
<p>Vanuatu hosts the greatest socio-cultural and linguistic diversity per head of population in the world. The Vanuatu Cultural Centre leads work in-country to protect traditional knowledge, innovations and practices and maintain socio-cultural diversity of ni-Vanuatu. Work undertaken within a GEF funded</p>		

project that commenced in late 2005 will assist the Cultural Centre to establish systems to better manage information on traditional biodiversity knowledge, innovations and practices.

The National Biodiversity Strategy and Action Plan gave priority to creating enabling systems for the protection of traditional knowledge, innovations and practices, with specific recommendations for strengthening existing legal and administrative practices. The Council of Minister's has endorsed formation of a National Scientific Research Council – in part as a mechanism to ensure traditional knowledge, innovations and practices are appropriately acknowledged and that knowledge holders benefit from use of their knowledge and innovations by third parties.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		Recognition and promotion of traditional plants used to combat diseases and pests affecting crops. Recognition of the provenance source of varieties of taro, yam and kava held in national collections.
b) Inland water		X	
c) Marine and coastal	X		Record and apply traditional knowledge of marine resources and fishing techniques. Encourage the use of traditional resource management practices.
d) Dry and subhumid land			N/A
e) Forest			Record traditional nomenclature and uses of forest species within the herbarium database. Identify for protection culturally significant sites and trees prior to issuing timber licenses.
f) Mountain			Forest targets apply.

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Vanuatu's National Biodiversity Strategy and Action Plan recommended establishment of a Scientific Research Council as, among other things, a mechanism to ensure traditional knowledge, innovations and practices are appropriately acknowledged and that knowledge holders benefit from use of that knowledge by third parties. This recommendation was subjected to extensive consultation prior to endorsement by the Council of Ministers. The Council of Ministers' decisions are currently with the State Law Office to draft appropriate legislation.

Vanuatu's National Biodiversity Strategy and Action Plan also gave priority to protection of intellectual property rights with respect to knowledge and use of biodiversity. This is inadequately addressed within existing laws. Amendments to the Patents, Trademarks and Designs Bills and the Copyrights Act have been recommended to provide for perpetual ownership of traditional biodiversity knowledge and place responsibility for registration of traditional biodiversity knowledge with the Scientific Research Council. The recommendations have progressed to Ministerial level for approval.

The Department of Agriculture's Development of Sustainable Agricultural Practices (DSAP)

Programme has in its work plans preservation of traditional agricultural knowledge and practices. The programme is reviving the knowledge and use of traditional plants and plant products to repel pathogens and pest organisms. The project also promotes and encourages use of traditional calendars to plan planting and/or harvesting season(s) for different crops.

The Vanuatu Cultural Centre has undertaken considerable work over 6 years to record traditional knowledge of marine resources and marine resource harvesting practices, separately addressing the knowledge and practices of both genders. Donor support would be required to expand this work to other biodiversity elements. The annual conferences of men and women field workers attached to the Cultural Centre have helped record and preserve knowledge of biodiversity including birds and Pandanus.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- All natural resource sectors currently encourage local communities to use local knowledge and custom practices to manage their natural resource base. This contrasts with 20 years ago when local knowledge was discounted in favour of externally established "modern" practices.
- Council of Ministers' endorsement of formation of a National Scientific Research Council with responsibilities for recording and protecting traditional knowledge rights. Appropriate legislation is to be drafted.
- The Vanuatu Cultural Centre's mission includes fostering the use and practice of traditional knowledge as well as recording that knowledge for the future.
- Local custodians identify for preservation culturally significant sites and flora of local value prior to timber licenses being signed.
- The Environment Management and Conservation Act (2003) introduced a legal mechanism for the control of biodiversity prospecting.

Negative trends and status in relation to targets stated above

- There has been progressive loss of traditional biodiversity knowledge, and the language for expressing this knowledge, over the past century. This trend is likely to continue as national resources are inadequate to record the full range of knowledge that continues to be deployed.
- Recommendations to address traditional knowledge rights within the Patents, Trademarks and Designs Bills and the Copyrights Act have yet to be endorsed by the Council of Ministers.
- Extension Officers and field workers within the natural resource sectors are not yet fully familiar with modern concepts of traditional knowledge rights. Varietal collections of a range of plants have been established, and propagational material distributed without reference to the traditional plant breeders.

V) Please provide information on indicators used in relation to this target.

Progress of legislation to assert and protect traditional knowledge rights.

The number of complaints of unlawful or unapproved use of traditional biodiversity knowledge.

VI) Please provide information on challenges in implementation of this target.

- Traditional biodiversity knowledge is linked with traditional powers, land ownership and custom roles. Often custodians of knowledge actively choose to pass that knowledge to only one or two selected individuals, even though access to that knowledge remains limited.
- Many landowners have chosen to protect their knowledge by not registering significant cultural sites, and may fail to register complaints where timber companies or other development activities damage sites and values that should have been marked for protection.
- The Vanuatu Cultural Centre needs additional resources and capacity to fully support work to record and promote traditional knowledge.

VII) Please provide any other relevant information.

The recognition of traditional knowledge rights within the U.N. Convention on Biodiversity has been instrumental in leading to legal initiatives to ensure traditional knowledge has legal recognition within Vanuatu.

Box XVII.

Target 9.2

Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing

I) National target: Has a national target been established corresponding to the global target above?

a) No

b) Yes, the same as the global target

c) Yes, one or more specific national targets have been established

X

Please provide details below.

Vanuatu has a strong commitment to protecting indigenous rights.

Vanuatu's National Biodiversity Strategy and Action Plan set an initial target for introducing legal and administrative mechanisms that would adequately protect the rights of indigenous and local communities over their traditional knowledge, innovations and practice, including their rights to benefit sharing.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		Ban on export of green <i>Piper methysticum</i> .
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land			N/A
e) Forest	X		The Department of Forestry facilitates negotiations between landowners and saw millers, to ensure proposals are fully understood, and in accord with landowner's requirements.
f) Mountain			Forest targets apply.

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No

b) Yes, into national biodiversity strategy and action plan

c) Yes, into sectoral strategies, plans and programmes

X

X

Please provide details below.

Vanuatu's National Biodiversity Strategy and Action Plan recommended establishment of a Scientific Research Council as, among other things, a mechanism to ensure traditional knowledge, innovations and practices are appropriately acknowledged and to record the rights of knowledge holders to share in any benefit from application of that knowledge by third parties. Following extensive public consultation recommendations have been endorsed by the Council of Ministers and are with the State Law Office for drafting appropriate legislation.

Vanuatu's National Biodiversity Strategy and Action Plan recognised the need to better protect intellectual property rights with respect to knowledge and use of biodiversity. This is currently not adequately addressed within existing laws, and recommendations for amendments to the Patents, Trademarks and Designs Bills and the Copyrights Act have progressed to Ministerial level for consideration.

Vanuatu's first specific measure to protect indigenous plant varieties has been a ban on the export of green *Piper methysticum*.

The Environment Management and Conservation Act (2003) provides for control and permitting of bioprospecting to recognise and protect the rights of knowledge providers to share in any benefit from application of that knowledge by third parties.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- The Environment Management and Conservation Act (2003) provided a mechanism for bioprospecting to ensure indigenous knowledge and innovations are recognised and informants have access to a share in any benefits following from use of that knowledge by third parties.
- All recent collections of the National Herbarium are properly recorded with vernacular names and names and addresses of the people providing the information.
- Vanuatu Government has imposed a ban on the export of green *Piper methysticum*.
- Work facilitated by the Department of Forestry to document varieties of sandalwood recognised the ownership rights of the landowners who grew the varieties identified.

Negative trends and status in relation to targets stated above

- Traditional knowledge and innovations tend not to receive the attention and protection afforded to modern international knowledge and innovations.
- Some plant varietal collections undertaken in the last decade have inadequately recorded the names and addresses of the people owning the variety and providing information about it. Some varietal collections have linked the variety with an island or general locality but not the specific individuals or families that have selected and cultivated the variety.
- Selected cultivars of Yams, Kumala and Taro have been promoted and distributed by the Vanuatu Chamber of Commerce and the Department of Agriculture with no recognition of the rights of the plant breeders to benefits.
- Biological samples have been taken by external research organisations and their agents in the past for tests and trials with no follow-up to in-country organisations or communities providing samples and information. For example, samples were taken from marine organisms including sponges for tests against certain cures for cancer. Vanuatu lacks capacity to pursue this issue in the international legal arena.
- The Environment Unit has limited human resource and financial capacity. Consequently there has been only limited progress towards developing policies, plans and regulations under the Environment Management and Conservation Act (2003) and slow progress in furthering the priorities of the National Biodiversity Strategy and Action Plan to protect indigenous knowledge rights and ensure benefit sharing.

V) Please provide information on indicators used in relation to this target.

Progress of legislation to assert and protect rights to traditional knowledge.

The number of complaints of unlawful or unapproved use of traditional biodiversity knowledge.

VI) Please provide information on challenges in implementation of this target.

- The concept of varietal rights is not well recognised. Sectoral agencies are more focused on fostering commercial and consistent production. Most villagers are keen to receive improved planting materials and do not question issues of ownership, benefit sharing or maintenance of genetic diversity. There is a need for greater awareness about issues relating to target 9.2.
- Engendering a national rather than sectoral or partisan position on this issue has been a challenge. The Environment Unit has stimulated debate on recognition of traditional knowledge rights within the Patents, Trademarks and Designs Bills and the Copyrights Act. However, the role of the Environment Unit and the Minister responsible for Environment has been questioned, as some considered the topics were more appropriately the concern of the Minister responsible for Trade or the Minister responsible for Internal Affairs.
- Even though the protection of the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing, have been discussed nationally through facilitated debate and consultants' review, the issues remain not fully understood by the range of government and non-government agencies and their staff. In recent years several organisations have documented, collected or distributed cultivars with inadequate recognition of the ownership rights of the plant breeders and permitted the collection of samples without recourse to the bioprospecting controls in the Environment Management and Conservation Act (2003).
- Despite the controls established by the Environment Management and Conservation Act (2003) there is limited in-country capacity to pursue breaches of traditional knowledge rights, including pursuing rights to a share of benefits, to international courts of law.

VII) Please provide any other relevant information.

The recognition of traditional knowledge rights within the UN Convention on Biodiversity has been instrumental in encouraging legal initiatives to ensure traditional knowledge has legal recognition within Vanuatu.

Goal 10	Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources.	
Target 10.1	All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
A draft National Biosafety Framework that makes recommendations to ensure all transfers of living or modified genetic resources are in accord with applicable agreements is before the Council of Ministers		

for debate.

Vanuatu's Council of Ministers has endorsed recommendations for a Scientific Research Council. The Scientific Research Council would, among other things, oversee collections of genetic resources for research purposes, and ensure any transfers take place with full prior informed consent and with appropriate recognition of source.

In addition the Environment Management and Conservation Act (2003) provides for the Environment Unit to permit bioprospecting to ensure any transfers of genetic resources take place with full prior informed consent, with appropriate recognition of source and in accord with applicable agreements.

These national targets have not yet been incorporated into work programmes at a sectoral level.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land			N/A
e) Forest		X	
f) Mountain		x	Forest targets apply

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Vanuatu's National Biodiversity Strategy and Action Plan gave priority to creation of appropriate legal mechanisms to ensure fair and equitable sharing of benefits arising from the use of genetic resources and to effectively recognise traditional knowledge rights to cultivated or selectively bred genetic resources. The draft National Biosafety Framework makes recommendations to further ensure all transfers of living or modified genetic resources are in accord with applicable agreements. This latter document is before the Council of Ministers.

The Vanuatu Cultural Centre requires that anyone conducting ethnological or cultural research to recognise traditional ownership of that knowledge, to obtain prior informed consent and to ensure any benefits are shared with informants.

Please provide information on current status and trends in relation to this target.

Despite debate and agreement over appropriate mechanisms to conduct transfers of genetic resources in manner that protects Vanuatu's indigenous knowledge rights, the legal framework has yet to be finalised. Consequently collections and transfers of genetic resources have not been consistently managed. Weaknesses arise in terms of ensuring full prior informed consent, recognition of traditional property rights and fair and equitable sharing of benefits.

- The bilaterally funded Sandalwood Project has conducted provenance studies to identify superior strains of *Santalum austrocaledonicum*. Scions from preferred varieties have been collected for

grafting at the Santo and Vila nursery and will be distributed to farmers throughout Vanuatu.

- The FSP Wild Yam Project, The Department of Forestry SPRIG Project, and the Chamber of Commerce/ Department of Agriculture Yam, Kumala and Taro projects have encouraged sharing of genetic materials among farmers with a view to commercialisation, without consideration for how this may affect genetic biodiversity and with scant recognition of traditional property rights.
- The TaroGen Project and the South Pacific Regional Initiative on Forest Genetic Resources have encouraged Pacific countries to share the genetic materials of potentially commercial varieties in regional gene pools. This exchange has been organised with a view to increasing commercial potential rather than issues associated with international agreements on transfer of genetic resources.
- Stock replenishment programmes for marine resources are organised with a view to maintaining commercial potential. It is assumed that marine organisms are genetically consistent throughout Vanuatu and so there is no consideration of issues associated with transfer of genetic traits or equitable benefit sharing. In general villagers are pleased to have their reefs restocked and do not question issues of source, ownership, benefit sharing or maintenance of genetic diversity.
- Vanuatu has a high level of cultural and linguistic diversity. Uses of some genetic resources is particular to one group, other uses are widespread. There needs to be much greater dialogue to ensure systems are put in place for fair and equitable sharing of benefits from any future commercial uses of genetic resources.

IV) Please provide information on indicators used in relation to this target.

V) Please provide information on challenges in implementation of this target.

Issues raised by the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture are often overlooked by sectoral agencies, that are more focused on lifting the capacity of rural communities to produce commercial quantities of crops that are of consistent marketable quality. In turn, most villagers are keen to receive improved planting materials and do not question issues of ownership, benefit sharing or maintenance of genetic diversity.

Vanuatu has limited scientific facilities and equipment. There are neither facilities nor budgets to enable research and documentation at genetic levels. This situation contributes to the lack of attention to issues addressed by target 10.1.

Participation in the activities of regional and inter-governmental development initiatives receives high level endorsement and is perceived as a benefit of membership of those organisations or participation in their development assistance programmes. In-country agencies have limited capacity to question whether transfers of genetic resources through these agencies are in line with multilateral agreements. For example an export of endemic orchids to Japan for cultivation and commercialisation trials raised questions over prior informed consent and benefit sharing.

These exchanges also highlight that the distinction between research, genetic collections and bio-prospecting is not always clear. Especially as genetic material collected for one purpose can be maintained and subsequently used for a distinctly different purpose

VI) Please provide any other relevant information.

There is a need for consistency at regional and international level to ensure that all transfers of live genetic material have their provenance, source and ownership properly recorded and recognised and provision for future benefits to be duly shared.

Box XVIII.

Target 10.2		Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources	
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established		X	
Please provide details below.			
<p>Vanuatu's Environment Management and Conservation Act (2003) regulates the collection of samples of organisms and traditional knowledge about those organisms for research, commercialisation or other applications and maintains a record of local sources of information. The next target is to develop adequate legal mechanisms to protect indigenous intellectual property and ensure the country and owners benefit from any application of their intellectual property by third parties.</p>			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land			N/A
e) Forest	X		The Department of Forestry is cautious about the introduction of alien species and export of endemic species and has adopted a pre-cautionary approach. Exchange of indigenous genetic material is allowed for the purpose of research work that has benefit to Vanuatu.
f) Mountain			Forest targets apply.
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)		X	
c) Yes, into sectoral strategies, plans and programmes		X	
Please provide details below.			
<p>Vanuatu's National Biodiversity Strategy and Action Plan recommended measures to protect traditional knowledge rights, and to establish legal mechanisms to ensure sources of genetic material and information were recorded and guaranteed a share in any benefits arising. Subsequently the Environment Management and Conservation Act (2003) made provision for permitting of bioprospecting, providing a legal mechanism through which collections of genetic material could be managed with a view to record rights of traditional owners of the genetic material or sources of information on their use.</p> <p>Vanuatu's Environment Unit and the Department of Forests exercise a pre-cautionary approach toward sharing of genetic resources with international entities, especially from species that are</p>			

endemic to Vanuatu, or species new to Vanuatu. The Forestry Department allows exports of genetic material from indigenous species for the purpose of research work that has benefit to Vanuatu.

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- The Environment Management and Conservation Act (2003) regulates bioprospecting to ensure equitable sharing of benefits.
- The Council of Minister's has endorsed preparation of legislation to establish a National Scientific Research Council. This Council will provide an initial framework for ensuring benefits from applications of genetic resources and knowledge about those resources are shared with the in-country sources.

Negative trends and status in relation to targets stated above

- Despite debate and agreement over appropriate mechanisms to conduct transfers of genetic resources in manner that protects Vanuatu's indigenous knowledge rights, the legal framework has yet to be finalised. Consequently collections and transfers of genetic resources have not been consistently managed, and agencies tend to act on a sectoral rather national basis.
- Vanuatu is establishing legal mechanisms to ensure benefits from applications of traditional knowledge and genetic resources are shared with informants. However, Vanuatu agencies lack capacity to pursue through international courts entities that transfer genetic materials outside international agreements and without adequate provision for fair and equitable benefit sharing.
- Vanuatu has a high level of cultural and linguistic diversity. Uses of some genetic resources is particular to one group, other uses are widespread. There needs to be much greater dialogue to ensure systems are put in place for fair and equitable sharing of benefits from any future commercial uses of genetic resources.
- While a variety of plant and animal samples have been exported from Vanuatu for research, curiosity and commercial use, no material benefits have been returned to country, and often even research results are not provided to informants or in-country organisations.

V) Please provide information on indicators used in relation to this target.

Benefits from applications of indigenous knowledge and genetic resources returned to Vanuatu.

VI) Please provide information on challenges in implementation of this target.

Vanuatu lacks capacity to effectively follow up on researchers and others to ensure agreements on benefit sharing or use of genetic resources are honoured. All agencies have experiences of researchers failing to return information on research outcomes and applications, while scientific publications that may provide information on research outcomes are not readily accessible from within Vanuatu. The National Biodiversity Strategy and Action Plan project encountered difficulties trying to repatriate information on Vanuatu's biodiversity from international agencies hosting information or research results. There is scope to consider whether international protocols could provide for repatriation of information.

A proportion of researchers and collectors visit Vanuatu on visitor's visas with no formal contact with government agencies. In such cases Vanuatu has no capacity to monitor or follow-up on individuals or organisations that may have exported genetic material to ensure benefits are shared. This is an ethical issue. In most research bodies' ethics committees vet all research applications. Researchers should be called upon to ensure prior informed consent has been obtained as a condition of approval of any research application.

The Vanuatu Environment Unit has limited human and financial resources and so the development of policies and regulations to give full effect to the bioprospecting provisions within the Environment Management and Conservation Act (2003) has been delayed.

VII) Please provide any other relevant information.

It is recognised that exchange of living genetic materials can be beneficial for all parties. However, responsibility must be accepted by countries hosting research institutions and importing material for research or commercial purposes to ensure the provisions of the CBD and other agreements relating to benefit sharing and intellectual property are consistently and fully observed and respected.

Box XIX.

Goal 11	Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention.		
Target 11.1	New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			X
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			
Please provide details below.			
Vanuatu is a developing country party. The country has benefited from inwards transfers of financial resources in the form of enabling activities and projects.			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land			N/A
e) Forest		X	
f) Mountain			Forest targets apply
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			X
b) Yes, into national biodiversity strategy and action plan			
c) Yes, into sectoral strategies, plans and programmes			
Please provide details below.			
A national target has not been set.			

IV) Please provide information on current status and trends in relation to this target.

Positive trends and status in relation to targets stated above

- Vanuatu has benefited from assistance that has enabled compliance with specific CBD requirements relating to preparation of a National Biodiversity Strategy and Action Plan, conduct of capacity needs assessments, establishment of a Biodiversity Internet site and reporting to the Conference of Parties.
- The size and flexibility of GEF small scale projects are well suited to the needs of a small country Vanuatu. Provision is being made for ni-Vanuatu to access the GEF small scale fund from late 2006.

Negative trends and status in relation to targets stated above

- Funding mechanisms pursuant to the Convention are difficult to access – both in terms of technical writing capacity and administrative capacity. As a result of these barriers funds are frequently accessed at a regional level which creates additional bureaucracy and may lead to generic actions that while beneficial to Vanuatu realise sub-optimal benefits.
- GEF funding budgets at medium scale and full scale levels are not well suited to the requirements of small developing countries such as Vanuatu.

V) Please provide information on indicators used in relation to this target.

Financial valuation of assistance received.

Impacts of assistance received.

VI) Please provide information on challenges in implementation of this target.

The funding mechanisms in place to enable the implementation of commitments under the Convention of Biodiversity are complex and have little flexibility to accommodate in-country needs and priorities. A particular frustration has been the prolonged nature of capacity assessments and planning at the expense of pursuing capacity building priorities identified in the National Biodiversity Strategy and Action Plan.

Funding mechanisms are difficult to access – both in terms of technical writing capacity and administrative capacity - and narrowly defined in terms of the work that can be supported.

VII) Please provide any other relevant information.

Box XX.

Target 11.2	Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4	
I) National target: Has a national target been established corresponding to the global target above?		
a) No		
b) Yes, the same as the global target		
c) Yes, one or more specific national targets have been established		X
Please provide details below.		
Vanuatu's National Priorities and Action Agenda (Government of the Republic of Vanuatu, undated) identifies priority technical and administrative capacity building needs for all natural resource sectors.		
Vanuatu's National Biodiversity Strategy and Action Plan (1989) listed priority technical and financial assistance that would specifically strengthen in-country capacity to implement commitments under		

the UN CBD. These included

- Building of an annex to the National Museum to appropriately house in-country taxonomic collections;
- creating in-country laboratory facilities with appropriate scientific equipment;
- research to acquire an understanding of the distribution, abundance and ecology of species within Vanuatu;
- setting up of a National Scientific Research Council;
- in-country and on the job training in biodiversity and environmental assessments and scientific monitoring.

None of these priorities have received assistance.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	X		Technical and administrative capacity building
b) Inland water			
c) Marine and coastal	X		Technical and administrative capacity building
d) Dry and subhumid land			N/A
e) Forest	X		Updating of the Forest Inventory and Sector Plan
f) Mountain			Forest targets apply.

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan (National Biodiversity Strategy and Action Plan)	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Vanuatu's National Priorities and Action Agenda (op. cit.) gives priority to technical and administrative capacity building in all natural resource sectors. This priority has been incorporated into the work plans of the Departments concerned.

Vanuatu's National Biodiversity Strategy and Action Plan allocated priority to technical and financial assistance that would specifically strengthen in-country capacity to implement commitments under the UN CBD. These included

- Building of an annex to the National Museum to appropriately house in-country taxonomic collections;
- creating in-country laboratory facilities with appropriate scientific equipment;
- research to acquire an understanding of the distribution, abundance and ecology of species within Vanuatu;
- setting up of a National Scientific Research Council;
- in-country and on the job training in biodiversity and environmental assessments and scientific monitoring.

The National Forest Policy (2000) emphasises the need to update the national forest inventory at

least every 10 years. This is a major undertaking that requires international financial and technical assistance.

IV) Please provide information on current status and trends in relation to this target.

There has been little progress toward addressing the priorities for technical assistance identified in the National Biodiversity Strategy and Action Plan, and the Forestry Department has not been able to attract technical assistance for revision of the national forest inventory.

However, external technological and scientific transfer has been received for activities outside these priorities, in areas such as improved regional management of highly migratory fish stocks, strengthening of Fisheries statistics capacity, building capacity for sustainable management of timber harvesting and professional training.

A significant component of assistance has been in the form of collaborative applied research projects that build biodiversity conservation capacity in parallel with initiatives to expand the national economic base.

V) Please provide information on indicators used in relation to this target.

Progress in meeting technical and capacity goals.

VI) Please provide information on challenges in implementation of this target.

Assistance often seems to be directed towards meeting the interests and needs of developed donor country Parties rather than the systematically prioritised needs of Vanuatu as a developing country Party. One consequence of this is that some of the technology and training provided has been beyond national capacity to sustain it.

Vanuatu has a small civil service. A local review of capacity initiatives conducted for the National Capacity Self Assessment recommended that for maximum uptake capacity building needed to be strategically targeted to ensure it is adding to practical capacity and can have immediate application. Many training and capacity building activities provided to ni-Vanuatu fail to meet this key need and so there is a low level of sustainability.

VII) Please provide any other relevant information.

There is scope for developed country parties to take a more active role in transferring practical and appropriate technology to facilitate in-country implementation of commitments under the UN Convention for Biodiversity.

Global Strategy for Plant Conservation (GSPC)

The Conference of the Parties, in decision VI/9, annex, adopted the Global Strategy for Plant Conservation. Parties and Governments are invited to develop their own targets with this flexible framework. The Conference of the Parties considered the Strategy as a pilot approach for the use of outcome oriented targets under the Convention. In decision VII/10, the Conference of the Parties decided to integrate the targets into the reporting framework for the Third National Reports. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box XXI.

Target 1. A widely accessible working list of known plant species, as a step towards a complete world flora.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
<p>Vanuatu's National Herbarium is housed within the Department of Forests. The Herbarium maintains dried collections and a database of Vanuatu's flora, and has well developed links with regional and international Herbariums. Information can be extracted from the database on request.</p>	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
<p>Vanuatu's National Biodiversity Strategy and Action Plan (1999), the National Forest Policy (2000) and the Forestry Department Work Programme include recommendations for creation of a permanent facility to better house the collections and databases of the National Herbarium and facilitate their use.</p> <p>A separate target is completion of the integrated Vanuatu Flora and Fauna GIS and database.</p>	
III) Current status (please indicate current status related to this target)	
<p>Collection work is on-going. While there are well over 1,000 species within the collections, this is recognized to be only a small portion of Vanuatu's flora.</p> <p>The facilities that accommodate the herbarium collections are inadequate and specimens are deteriorating. Vanuatu is seeking technical and financial assistance to construct a more appropriate facility to house the National Herbarium for five years.</p> <p>Vanuatu Flora and Fauna GIS and database have been under development for five years yet remains incomplete. Technical work is led by Australia's Department of Environment and Heritage.</p>	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

The national budget provides for on-going collection and maintenance of the collections including two salaries.

Designs for a permanent facility for the National Herbarium were developed in consultation with staff of the National Museum and are included in the Government Investment Programme. However, to date the request has failed to attract technical and financial assistance.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

The National Herbarium now collects a wider range of specimens including fern and fern allies, gymnosperms and angiosperms. Field collections are more frequent and the Herbarium now has a computerised database of the records.

VI) Constraints to achieving progress towards the target

The Government's Priority Action Agenda gives priority to social services, governance strengthening and economic growth. Funds are not available for capital works to establish a permanent facility to house biological collections. Nor have bilateral or multilateral donors been forthcoming to assist with construction of a permanent herbarium

For a number of years the national Herbarium has been located within the Forestry Department. Initially this led to collections being skewed towards forest species. Current policies and work programmes encourage broader collection of all flora.

VII) Any other relevant information

Vanuatu relies on technical support from donor member countries for technical confirmation of identifications and formal taxonomic classification of new records.

Box XXII.

Target 2. A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu lacks financial, technical and human resources to formally assess the conservation status of known plant species. Conservation classifications of the WCMC are used where available. A significant portion of Vanuatu's endemic flora is of indeterminate status reflecting the lack of ecological population studies to inform assessments of their conservation status.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Vanuatu's National Biodiversity Strategy and Action Plan includes priority actions for the assessment of biodiversity including building national capacity to conduct biodiversity assessment and monitoring.

Work programmes of Vanuatu's Department of Forests provide for on-going collections for the herbarium and completion of a computer database.

Vanuatu's Department of Forests has facilitated research to document the conservation status of five priority tree species.

III) Current status (please indicate current status related to this target)

Only flora of particular interest to external researchers and enthusiasts such as Orchidaceae and Arecaceae, species with good economic potential such as *Terminalia* spp, *Canarium* spp and *Santalum austrocaledonicum* or species that are widely distributed, have had their conservation status assessed. The status of most endemic and restricted range plants in Vanuatu remains indeterminate.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Herbarium collection work is on-going and a broader range of flora is collected compared with the past. Independent research is facilitated to expand upon the work that can be conducted by the Herbarium's two staff. An international scientific expedition will conduct biodiversity assessments on Santo Island in late 2006.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Only flora of particular interest to external researchers and enthusiasts such as Orchidaceae and Arecaceae, species with good economic potential such as *Terminalia* spp, *Canarium* spp and *Santalum austrocaledonicum* or species that are widely distributed, have had their conservation status assessed. The status of most endemic and restricted range plants in Vanuatu remains indeterminate.

Indicators: proportion of plants whose conservation status has been assessed.

VI) Constraints to achieving progress towards the target

Vanuatu lacks technical, financial and human resources to formally assess the conservation status of endemic plants. The limited information on the population and ecology of species is a particular weakness.

Vanuatu is a least developed country with limited resources and capacity. In allocating available resources government has given priority to applied research that directly facilitates and informs sustainable management of economic resources rather than research that has less immediate economic benefit.

VII) Any other relevant information

Target 3. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

In association with the South Pacific Regional Initiative for Forest Genetic Resources research has been conducted to inform conservation/use strategies for five priority timber species *Endospermum medullosum*, *Santalum austrocaledonicum*, *Agathis macrophylla*, *Agathis silbae* and *Intsia bijuga*.

The National Biodiversity Strategy and Action Plan recognizes the need to develop locally appropriate conservation models that incorporate traditional elements and meet the social, cultural and economic needs of subsistence rural communities.

III) Current status (please indicate current status related to this target)

Since closure of the South Pacific Regional Initiative for Forest Genetic Resources Project no further species conservation/use strategies have been developed, and there has been limited progress in implementing the initial five strategies.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Vanuatu has participated in regional and sub-regional initiatives to promote sustainable management of significant tree species.

The Government Environment Unit is conducting a pilot project that includes work to trial models of conservation for a range of endemic plant species of restricted range on the island of Tanna.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

After initial achievements in partnership with the South Pacific Regional Initiative for Forest Genetic Resources Project Vanuatu has made limited progress toward this target.

Work on Tanna to trial models of conservation for endemic plant communities began in early 2006.

VI) Constraints to achieving progress towards the target

Vanuatu lacks capacity and resources to pursue this target. Resources available are being directed toward higher priority issues such as sustainable management of used plant species. There is potential to draw upon earlier research work to inform plant conservation models and protocols. However little research information is accessible within Vanuatu, and information that is in-country is often inadequately housed and liable to be lost. Proposals to construct a permanent Herbarium facility include provision for a permanent databank holding securely all information on Vanuatu's plant biodiversity.

VII) Any other relevant information

Target 4. At least ten percent of each of the world's ecological regions effectively conserved.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu has not established a national target corresponding to the global target because there is inadequate information :

- a) on the structure, area and integrity of ecosystems present in Vanuatu; and
- b) about the impact and adequacy of existing measures for conservation of biological diversity of Vanuatu's ecosystems.

Initial priorities are

- to identify and address priorities at a species and habitat level;
- to explore the range of conservation options that might work effectively in-country;
- to put in place legal and administrative frameworks that will enable conservation of biological diversity.

It is anticipated Vanuatu will be in a better position to establish a national targets for the conservation of ecosystems and habitats in five years time.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Vanuatu has yet to set a national target and the global target has not been directly incorporated into relevant plans, programmes and strategies.

Initial priorities at both national and sectoral levels have focused on **enabling** biodiversity conservation. Significant progress has been made towards these goals since the second national report. This includes

- Establishing the legal framework: The Environment Management and Conservation Act (2003) provides for Environmental Impact Assessment, species protection and registration of conservation areas. The Water Resources Management Act (2003) enables protection of watersheds and water quality. The Code of Logging Practice (1998) has been fully implemented and has good adherence from the timber industry.
- Developing administrative procedures: Progress has been made in deploying administrative procedures that give effect to the new laws for biodiversity conservation and environmental resource management. Procedures for locally managed protected areas have been strengthened and receive support from government and NGO agencies.
- Education and awareness raising: The Department of Forestry staged training activities for Timber Licensees about their environmental responsibilities under the Code of Logging Practice (1998). The Environment Unit promotes awareness of the new requirements for consideration of biodiversity within Environmental Impact Assessments. The Agricultural Sector is promoting more sustainable subsistence farming practices. The Fisheries sector has focused on management of resources at risk of depletion and locally managed coastal marine conservation areas.
- Biodiversity research and documentation. The Vanuatu Environment Unit has coordinated consultations for the management of research leading to recommendations for establishment of a Scientific Research Council and improvements in biodiversity inventory. The Unit facilitates and encourages biodiversity research by foreign research institutions. The Agricultural Department is hosting projects that enable diversity of key food crops to be documented and recognised.

III) Current status (please indicate current status related to this target)

Positive trends and status in relation to targets stated above

- The Environment Management and Conservation Act (2003) provides for registration of areas important for conservation of biodiversity.
- Landowners and communities are receptive to advice on reforestation and afforestation. Clearing of forest is now done purposely for needs foreseen by farmers rather than as an unintended consequence of logging.
- Plans for management of a scientific research have progressed and draft legislation for a National Scientific Research Council is in preparation. Under provisional arrangements researchers are encouraged to provide copies of research results and this increases access to biodiversity information.
- Communities and resource owners are actively approaching officers of the Department of Forestry, the Department of Fisheries and the Environment Unit for assistance in establishing conservation areas that are consistent with local needs and goals.
- The Forestry Act (2001) is to be amended to provide for the conservation and sustainable use of mangrove ecosystems.

Negative trends and status in relation to targets stated above:

- Community interest in locally managed marine and terrestrial protected areas often exceeds the capacity of government and non-government agencies to provide effective support and advice.
- Locally managed marine and terrestrial protected areas meet local goals but may not always contribute to effective conservation of national biodiversity priorities.
- In recent decades the area and composition of Vanuatu's forest resources has changed dramatically – forested areas are smaller in size and areas, significant areas have been converted to agricultural purposes, or have had a number of species selectively removed. Priority conservation zones have not been identified.
- There remain only two legally recognised conservation areas throughout the country.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

All Vanuatu government agencies involved in natural resource management as well as several national NGOs **actively encourage** conservation initiatives at community or clan level. These are predominantly small (<10 ha), locally established and managed, with traditional concepts such as *tabus* dominating the management regimes in place. This mosaic of small conservation areas is believed to contribute positively to conservation of Vanuatu's biodiversity and sustainable usage of Vanuatu's biological resources. However, the benefit has not been quantified.

Initial priorities at both national and sectoral levels have focused on **enabling** sustainable resource use and management through establishing the legal framework; Developing administrative procedures that give effect to the new laws for biodiversity conservation and environmental resource management; Education and awareness raising; and biodiversity research and documentation.

A particular priority for forestry and fisheries management is conservation of mangrove ecosystems: specific mechanisms for this have yet to be agreed upon.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Progress in protecting ecoregions present in Vanuatu has been limited. Rather a wide reaching network of locally managed small protected areas is encouraged to help maintain the integrity of Vanuatu's biodiversity.

VI) Constraints to achieving progress towards the target

Many constraints make this target difficult for Vanuatu to address.

- Vanuatu remains a least developed country with most of the rural population living a subsistence or semi-subsistence lifestyle. The consequences of poverty are compounded by Vanuatu's 3% population growth which places growing subsistence and commercial pressure on the limited resource base of the small islands. Alienation of large tracts of land on small heavily used islands is neither politically nor economically feasible. Holistic approaches to resource use and conservation are necessary in small island environments that are heavily used for subsistence livelihoods.
- Vanuatu's Constitution provides for inalienable traditional tenure to land and the resources on that land. Unlike many countries, the government cannot readily acquire land for conservation purposes. Protected areas can only be established by the landholders and with the support of members of the landholder family or clan and resources users, or through formal fixed term lease arrangements. An initial attempt to lease land for conservation purposes lapsed due to the government's inability to meet recurrent lease payments.
- There is limited information on Vanuatu's ecosystems and their integrity and resilience. It is not yet clear to what extent shifts in resource management meant to encourage more sustainable resource use have been effective in ensuring the nation's ecosystems are preserved. For example it is not known which biodiversity elements are adequately protected by the mosaic of small local protected areas. Nor is it known to what extent the move from clear felling to selective harvesting of preferred species protects forest biodiversity.

VII) Any other relevant information

In recent decades the area and composition of Vanuatu's forest resources has changed dramatically – forested areas are smaller in size, significant areas have been converted to agricultural purposes, or have had a number of species selectively removed. It is imperative that lowland conservation priorities are defined: however national resources do not permit priority to be given to establishing formal protected areas.

Target 5. Protection of fifty percent of the most important areas for plant diversity assured.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu lacks information and capacity to set such a direct target. A number of priority areas have been identified and are listed below.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Vanuatu's National Biodiversity Strategy and Action Plan (National Biodiversity Strategy and Action Plan) (1999) defined two priorities for plant conservation:

- mangrove ecosystems throughout the archipelago and
- remnant endemic vegetation on the island of Tanna. It is anticipated that clear strategies and targets for endemic remnant vegetation on Tanna will emerge following a four year conservation project on Tanna that commenced late in 2005.

Vanuatu's Department of Forests has identified lowland rainforest and mangroves as conservation priorities, without delineating specific areas.

III) Current status (please indicate current status related to this target)

Only one conservation area has been registered under the Environment Management and Conservation Act (2003): Vatthe Conservation Area on Santo Island. The lease over the Erromango Kauri Protected Area has lapsed due to inability to meet lease payments.

Preliminary work by the Department of Forestry has identified a number of lowland rainforest habitats suitable for protection but further work is needed to finalise selection. Following confirmation of possible sites there will need to be consideration of legal and financial strategies to secure their status.

Work to explore strategies and conservation targets for endemic vegetation on Tanna commenced late in 2005 and will continue to 2009.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Initial focus at a national level has been on creating an enabling legal and administrative framework for protection of plant biodiversity.

The Environment Management and Conservation Act (2003) provides a mechanism for registration of conservation areas of particular significance, regulating for the management or sustainable use of significant flora and establishing national conservation policies.

The National Forest Policy (2000) places responsibility with the Department's Conservation Unit to identify and protect forest areas with special ecological and biodiversity values, which is working with landholders to identify suitable forest areas for conservation purposes.

An amendment to the Forestry Act (2001) has been proposed to enable the Forestry Department to develop a mangrove conservation policy.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Steady progress has been recorded in creating an enabling legal and administrative context for conservation of areas important for plant diversity. However direct progress toward assuring protection for important plant diversity has been limited. To date there is only one registered protected terrestrial area. While there are a number of informal resource management and protection areas at local level the extent to which these assist in meeting the target is unclear.

VI) Constraints to achieving progress towards the target

- Most agencies face resource constraints that hamper their ability to convert approved policies into practice. Achievements are often realised gradually over an extended period.
- Vanuatu's Constitution provides for inalienable traditional tenure to land and the resources on that land. Unlike many countries, the government cannot readily acquire land for conservation purposes. Areas and species can only be conserved with agreement of landholders and with the support of members of the landholder family or clan and resources users, or through formal fixed term lease arrangements. An initial attempt to lease land for conservation purposes lapsed due to the government's inability to meet recurrent lease payments. Alternative strategies need to be further considered.
- Emphasis is currently placed on voluntary community based management with little more than technical advice from government. However, this approach assumes adequate community understanding and commitment to biodiversity conservation goals. The resultant conservation measures are often short term and while they may meet community goals they do not always address national biodiversity conservation goals (Whyte et al, 1998).
- There is no quantitative data that establishes the extent to which community based resource management initiatives contribute toward meeting national biodiversity conservation commitments.
- A range of disputes that emerge between and within landholder groups can have the effect of undermining biodiversity conservation outcomes from formally and informally protected sites.

VII) Any other relevant information

Target 6. At least thirty percent of production lands managed consistent with the conservation of plant diversity.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Ensuring the sustainable use of natural resources is a national priority of Vanuatu and stated in the Priorities and Action Agenda (undated). However, specific targets for productive lands and seas have not been set.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

The National Forest Policy (2000) aims for the sustainable management of Vanuatu's productive forests, through application of provisions of the Forestry Act (2001) and the Code of Logging Practice (1998). This aim is consistent with conservation of plant diversity, and is applied to all timber harvesting for commercial purposes. Provisions do not apply to subsistence harvesting of timber and tree resources.

The Department of Agriculture and Rural Development has hosted projects that address site stable agriculture and extension officers actively promote sustainable farming systems.

Priority has been given to management of highly productive mangrove forests, and an amendment to the Forestry Act (2001) is proposed to allow a management plan to be developed.

III) Current status (please indicate current status related to this target)

Vanuatu lacks capacity to adequately monitor progress against this global target.

Areas managed under traditional subsistence shifting agriculture techniques are believed to be managed consistently with conservation of biodiversity. However, as communities enter commercial agriculture, and permanently clear forest to establish permanent plantings of cash crops and pastures the area of productive lands managed consistently with conservation of plant biodiversity is decreasing.

The move to sustainable farming practices is variable. However it is greatest in areas where soil depletion has noticeably reduced crop yields or where a small area of land must support a large population.

There is inadequate information to assess status of marine plant biodiversity relative to this target.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

- The Vanuatu Sustainable Forestry Utilization Project conducted awareness and training activities to build capacity to manage productive forests in accord with the Code of Logging Practice (1998).
- Introduction of Environmental Impact Assessment procedures under the Environment Management and Conservation Act (2003) strengthened capacity to manage development activities and minimise any potential for impacts on plant biodiversity, including activities in the agriculture and forest sector.
- Over the past decade Vanuatu's Department of Agriculture and Rural Development has hosted trials of site stable agriculture techniques, including measures to prevent environmental degradation on sloping land, which had considerable potential to reduce the impacts of recurrent clearing for agriculture on biodiversity. This work has been augmented by parallel work of the Farm Support Association at community level.

Vanuatu's Fisheries Department is collaborating with the Foundation of the Peoples of the South Pacific Vanuatu to implement a village based coral gardening project. This integrates capacity building for community level coastal management with replenishment of coastal habitats and sustainable resource use.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Greatest progress to ensure Vanuatu's productive lands and seas are managed consistent with the conservation of plant diversity has been made in the forestry sector, with the Code of Logging Practice (1989) providing a basis for sustainable timber harvesting with minimal impact on the standing forest. However, the impact is limited because many landholders choose to convert lowland forests to agricultural and pastoral systems to increase their capacity to generate cash income. As a consequence the area of productive land managed consistent with the conservation of plant biodiversity is decreasing.

Vanuatu's Fisheries Department is collaborating with the Foundation of the Peoples of the South Pacific Vanuatu to implement a village based coral gardening project. This integrates capacity building for community level coastal management with replenishment of coastal habitats and sustainable resource use.

VI) Constraints to achieving progress towards the target

- Many landholders are choosing to convert lowland forests to agricultural and pastoral systems to increase their capacity to generate cash income, and this is encouraged by government policies and practices that encourage expansion of commercial agriculture. . There is a need to promote more integrated ecosystem approaches to agricultural land use that include maintenance of ecosystem functions and biodiversity. This would need to include greater attention to agricultural clearing and the development of agricultural clearing guidelines that parallel the provisions of the Code of Logging Practice (1998). Opportunity also exists to put in place incentives for maintenance of biodiversity and environmental systems within agricultural systems, as an alternative to prevailing attitudes that landholders should be compensated if they are not allowed to fully develop their land and resources.
- Management of highly productive marine environments currently does not address the global target for conservation of plant biodiversity. Fisheries management primarily targets used fauna species, and has yet to move to a whole of ecosystem approach.
- There is limited capacity to monitor progress against this target. The Department of Forestry monitors operations to ensure compliance with the Code of Logging Practice (1998). Lack of financial resources prevent agencies from adequately monitoring information on
 - Area of forest regenerated;
 - Area of land cleared for agriculture; and
 - Area of farm / garden land experiencing declining fallow periods.Access to remote technical aids such as GIS and satellite imagery is prohibitively expensive.

VII) Any other relevant information

There are concerns within the Forestry Department and the Environment Unit on the small area of intact lowland rainforest. Strategies with direct incentives for protecting plant diversity will be necessary. However, resources are not available to meet this need.

Target 7. Sixty percent of the world's threatened species conserved *In-situ*.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu has yet to define a national target on the in-situ conservation of Vanuatu's threatened plant species, although a small number of priorities were identified in the National Biodiversity Strategy and Action Plan.

The status of much of Vanuatu's flora is indeterminate and ecological assessments are required to before a target can be meaningfully set.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Vanuatu has one terrestrial conservation area registered under the Environment Management and Conservation Act (2003) – Vatthe Protected Area on Santo Island - which preserves representative forest habitats – and one marine protected area under the Fisheries Act (1987) - Million Dollar Point and associated war graves. These are supplemented by numerous small informal local protected areas, many of which have not been documented.

Within Vanuatu's National Biodiversity Strategy and Action Plan a small number of priority areas for conservation of threatened species were identified. Vanuatu's Forestry Department has identified areas of lowland forest habitat for further conservation assessment. The Fisheries Department is progressing a marine conservation area in association with cultural Heritage sites on Hat Island. All agencies encourage small locally managed conservation activities.

The extent to which these initiatives will protect threatened species *in-situ* is not yet known.

III) Current status (please indicate current status related to this target)

No national target and limited capacity to pursue the global target.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Vanuatu's initial emphasis has been on creating an enabling legal and administrative framework for conservation of plant biodiversity. The Environment Management and Conservation Act (2003) provides a mechanism for the protection of any site that possesses unique genetic, cultural, geological or biological resources; or constitutes the habitat of species of wild fauna or flora of unique national or international importance.. The initial site registered under this mechanism is the Vatthe Conservation Area, which protects a diverse lowland forest habitat.

A GEF MSP to commence in late 2005 will provide an opportunity for Vanuatu's Environment Unit to work on Tanna Island to build capacity to conserve a range of flora species of indeterminate conservation status but believed to be of limited range and potentially threatened.

No work has addressed the status of marine plants.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Vanuatu's initial progress has been in building enabling legal and administrative systems which provide capacity for this target to be addressed.

VI) Constraints to achieving progress towards the target

- Vanuatu's Constitution provides for inalienable traditional tenure to land and the resources on that land. Consequently decisions on *in-situ* conservation are made by the landholders. Most local conservation initiatives address local resource management priorities. These can be quite different from global and national conservation targets, especially where threatened species are little known and not used. There is a need for greater extension work to encourage awareness of the existence and importance of populations of threatened species and to foster environmental pride to motivate maintenance of populations of threatened species. Opportunity also exists to put in place incentives for maintenance of populations of threatened species or to develop strategies so that maintenance of these populations beneficially impacts on landholder's opportunities to meet household income needs. Unfortunately Vanuatu lacks human and financial resources to adequately pursue such work.
- Vanuatu's Forestry Department gave priority to protecting Kauri forests, leading to the Erromango Kauri Protected Area being established following the lease of land. However the Department lacked financial resources to meet recurrent lease payments and was unable to secure private funding to assist with recurrent lease payments. As a consequence the lease over the area has lapsed and it is no longer securely protected. Given Vanuatu's land title laws there is a need to develop appropriate mechanisms for *in situ* conservation of threatened biodiversity that are within national capacity to secure for the long term.

VII) Any other relevant information

There are concerns within the Forestry Department and the Environment Unit on the small area of intact lowland rainforest. Strategies that provide incentives for maintaining lowland forest diversity will be necessary if lowland rainforest species are to be conserved. However, resources are not available to meet this need.

Target 8. Sixty percent of threatened plant species in accessible *Ex-situ* collections, preferably in the country of origin, and 10 percent of them included in recovery and restoration programmes.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu has yet to set targets for *ex situ* collections of threatened species.

Ex-situ collections to date have focused on a small number of species of high use value: taro, yams, kava and sandalwood.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Staff of the National Herbarium are encouraging the planting of a botanic garden in the Tagabe groundwater protection zone. Plantings include samples of Vanuatu's endemic and threatened species.

III) Current status (please indicate current status related to this target)

Work has commenced to establish Vanuatu's first botanic garden in association with management of the Tagabe River Water catchment. It is intended that the Botanic Gardens will focus on indigenous plant species. Considerable work is still required before the plantings are established and the planned garden is operational.

Ex-situ plantings of the threatened monospecific genus *Carpoxyton macrospermum* were undertaken in Port Vila in 1996. The initial plantings received minimal attention and there was high mortality rate. Approximately one hundred remain in street plantings and private gardens.

In late 2005 the Vanuatu Environment Unit commenced a four year project that will encourage conservation of threatened plant species on Tanna Island.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The Tagabe River Catchment Committee was established in 2003 and is working toward establishment of a botanic garden in the Tagabe River Water Protection Zone.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Street plantings of Vanuatu's most endangered plant *Carpoxyton macrospermum* were planted around Port Vila in 1997 and similar *ad hoc* measures can be anticipated. Indigenous plants are being propagated for the Tagabe Botanic Garden.

VI) Constraints to achieving progress towards the target

- Given the limited information about the status and ecology of Vanuatu's marine and terrestrial flora most species are of indeterminate conservation status. Further ecological and population studies are necessary before a systematic approach can be taken to this target.
- The national focus on improving economic productivity, has led landholders to expect economic returns from the use of their land or other resources. The government lacks financial resources to lease land for the purpose of ex situ collections or to otherwise compensate landholders for the use of their land.

VII) Any other relevant information

Target 9. Seventy percent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu has yet to set a national target with respect to conservation of genetic diversity of crops and major socio-economically valuable plant species. A range of *ad hoc* measures have been adopted within specific work plans and projects. The recently established Vanuatu Agriculture Research and Training Centre has the role of maintaining a germplasm bank for local food crops and agricultural commodities.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Vanuatu's Department of Forests has facilitated work by the South Pacific Regional Initiative for Tree Genetic Diversity to describe the range of variants in selected plant species including *Canarium spp.*, and *Santalum austrocaledonicum*.

The Department of Agriculture and Rural Development has facilitated similar work by CIRAD on root crops, and several other important subsistence crops with development potential. Small incomplete *in situ* and *ex situ* collections have been established.

III) Current status (please indicate current status related to this target)

Vanuatu's Department of Forests has established an incomplete collection of *Santalum austrocaledonicum* varieties on Santo. Type specimens of four priority tree species have been marked *in situ*.

The Department of Agriculture and Rural Development has small incomplete *in situ* and *ex situ* collections of root crops including Manioc (26 varieties), Yams (ca. 300 varieties), Kumala (ca 50 varieties), Taro (ca. 260 varieties), Coconut (ca. 60 varieties) and Piper methysticum (60 varieties). The status and maintenance of collections once the project activities that enabled the collections are complete is variable. Some of the local collections are being reduced in size so as to be more affordable. Some of the traditional crops have been studied for their genetic variation with molecular markers and the results show that there is significant genetic diversity in Vanuatu.

This work has led to promotion of a small range of preferred cultivars for farming applications and may ultimately act to reduce the diversity of crops traditionally cultivated by subsistence farmers.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Progress to date has been through participation in regional or international projects aiming to identify preferred cultivars and the range of diversity of economically valued species. Work with important root crops is being expanded upon through the Vanuatu Agrobiodiversity project.

The National Forestry Herbarium facilitates programmes to document the varieties of plant species and records information in their database. This normally includes names of the informants and vernacular names but does not extend to documentation of the full range of local knowledge.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Vanuatu has made some progress toward identifying the diversity of several important socio-economically valued plants. Incomplete documentation is available on the range of variants of taro, yam, canarium nuts, sandalwood and breadfruit. More comprehensive work has been undertaken on the diversity of *Piper methysticum* with an extensive varietal collection established on Santo.

VI) Constraints to achieving progress towards this target

- The concept of conservation of genetic diversity is complex and not well understood by community and national leaders. The high level of illiteracy and low participation in secondary education are factors that contribute to this situation in Vanuatu. Interest has been generated through recent initiatives to promote preferred varieties for commercial agriculture. It is a challenge to expand on this initial work to conserve the genetic diversity of the full range of cultivars and a wider range of species.
- Vanuatu lacks in-country scientific and taxonomic facilities to conduct research at a genetic level. The country is dependent on external independent research and collaborative regional research and development projects. As a result work often overlooks species of significant concern to Vanuatu – for example, no work has been done on the genetic diversity of *Pleiogynium timoriense*, *Intsia bijuga*, *Agathis silbai*, *Dysoxylum gaudichaudianum*, *Garuga floribunda* and *Pterocarpus indicus*.
- The distribution of cultivars by the Departments of Forestry, Agriculture and Rural Development and Fisheries Department is done without consideration for contamination or weakening of the local gene-pool.
- There are concerns that selection and promotion of planting material can focus on short term gains at the expense of long term perspectives. Promotion of dwarf coconut hybrids that while cropping heavily were short lived and found to have lower oil content was one example cited.

VII) Any other relevant information

Vanuatu has limited financial and technical resources. National priority is given to social development needs in areas of health, education and economic development. It is very hard to secure national resources for complex concerns such as conservation of the diversity of plant species that do not offer immediate tangible benefits. The work that has occurred toward this global target is the result of development assistance and has focused on commercial applications rather than conservation of species diversity.

Target 10. Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu's National Biodiversity Strategy and Action Plan (1999) emphasised development of legal and administrative mechanisms to enable alien species to be managed. The Draft National Biosecurity Policy further strengthens mechanisms to prevent introduction of alien species but has yet to be endorsed by the Council of Ministers.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Invasive species are recognized as a major threat to Vanuatu's biodiversity. They are targeted in the National Biodiversity Strategy and Action Plan (1999) and addressed in the Draft National Biosecurity Policy.

The Vanuatu Quarantine and inspection services now accepts environmental invasiveness is a grounds for denying entry to living organisms.

III) Current status (please indicate current status related to this target)

Following the work of the National Biodiversity Strategy Project and the Biosafety Project there is growing awareness and concern about the threat invasive alien species pose to Vanuatu's biodiversity, and recognition of Vanuatu Quarantine and Inspection Services as having authority over all imports of living organisms. There is also recognition that Vanuatu does not have the financial capacity to meet the costs of management and control of established invasive species. Consequently initial priority has been given to tightening border control provisions.

Greatest priority has been assigned to containment of *Wasmania auropunctata* to its present distribution in the Banks Group of Island. There is optimism that *Wasmania* may be targeted within a regional invasive species project.

Forestry Department is hoping to promote *Cordia* sp. as a quality timber species to reverse current perceptions that it is an invasive species.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

A database of invasive species has been compiled and community understanding and attitudes surveyed (Tapisuwe, 2002).

The Draft Biosafety Policy recognises that internal control of established invasive species is a secondary priority given the costs, constraints and issues that must be resolved. Priority is given to controlling entry.

The Vanuatu Quarantine and Inspection Services actively monitors several agricultural pests and environmental weeds: Bactrocera trilineola, Solanum torvum, Lantana camara and Sida rhombifolia. However, resources do not allow work beyond monitoring. Wasmania auropunctata is monitored, ships and planes moving between the infested areas and Luganville undergo quarantine inspection and a minor outbreak in Luganville has been eradicated.

Biological control of *Sida rhombifolia* and *Eichhornia crassipes* have been initiated through a regional intergovernmental agency, the Secretariat of the Pacific Community. Control insects have been introduced and are currently in containment.

Work on *Cordia alliodora* focuses on demonstrating its usefulness to encourage management and harvesting rather than neglect.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

There has been significant progress in building awareness of the threats to biodiversity and environmental functions posed by many invasive alien species. This has broadened the focus of biosecurity measures beyond a historical focus on economic pests.

Progress has been made towards the national goal of developing legal and administrative mechanisms to better address the threats posed by introduction of invasive alien species.

Technical and financial assistance through the Secretariat of the Pacific Community s is enabling contained field trials on biological control agents for *Sida rhombifolia* and *Eichhornia crassipes* is also seen as significance achievement.

VI) Constraints to achieving progress towards the target

National capacity limits the progress that can be made to manage and control invasive species.

- Control and eradication of environmental invasives is prohibitively costly and fails to receive political priority – even though the long term economic impacts can be severe. In-country work has focused on improving border control to reduce the risk of further introductions.
- Many species that have become environmental invasives also provide economic benefits if properly managed in agriculture, forest and fishery activities. Comparisons of their economic benefit with their environmental costs requires either detailed economic comparison or subjective assumptions. Only when environmentally invasive species are also pests within production systems is it easy to reach cross sectoral consensus on their management.
- Vanuatu has limited technical capacity and research funds to allow the ecological impact of invasive species to be documented and monitored.

VII) Any other relevant information

Box XXIII.

Target 11. No species of wild flora endangered by international trade.

I) Has your country established national target corresponding to the above global target?

a) Yes

X

b) No

Please specify

As a signatory to the Convention on the International Trade in Endangered Species Vanuatu has a clear goal of managing trade in endangered species. These provisions apply to a range of *Orchidaceae*, *Arecaceae* and other plant species.

As the formal status of many of Vanuatu's indigenous species is unknown, and few are listed on CITES. The Department of Forestry and the Environment Unit apply precautionary policies and only allow export of species believed endemic or rare for research purposes.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

Please specify

As a signatory to the Convention on the International Trade in Endangered Species Vanuatu applies standard permitting systems for the export of species listed on the CITES appendices including *Orchidaceae*, *Arecaceae* and other plant species.

Objective 2 of Vanuatu's National Biodiversity Strategy and Action Plan (1999) provides for policy, planning and legal mechanisms to control the export of plants that are endemic to Vanuatu or that may be locally or internationally rare. In response the Environment Management and Conservation Act (2003) enables the Minister responsible for Environment to issue regulations to control the taking or use of specified species including trade. Appropriate regulations are still to be developed. In the interim policy measures are applied to control the export of living endemic or threatened species.

Strict quotas and licensing provisions are applied to *Santalum austrocaledonicum*.

The Forestry Department encourages plantation and woodlot plantings of *Endospermum medullosum*, *Santalum austrocaledonicum*, *Agathis macrophylla*, *Canarium indicum* and *Terminalia catappa* to reduce the pressure from commercial harvesting of natural stands.

III) Current status (please indicate current status related to this target)

Vanuatu applies a standard CITES permitting system to exports of endangered species.

Vanuatu Quarantine and inspections services monitors exports at established ports of export to ensure compliance with permitting requirements.

The Environment Management and Conservation Act (2003) provides a mechanism for protection of species believed at risk but not listed on CITES, However, regulations and policies to control the taking or use of specified species have yet to be developed.

The Forestry Department applies strict quotas and licensing provisions to *Santalum austrocaledonicum*.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Objective 2 of the National Biodiversity Strategy and Action Plan (1999) provided for the introduction of policy, planning and legal mechanisms to control the export of plants and animals that are endemic to Vanuatu or that may be locally or internationally rare. In response the Environment Management and Conservation Act (2002) makes provision for the Minister responsible for Environment to issue regulations to control the taking or use of specified species including trade.

The Forestry Department encourages plantation and woodlot plantings of *Endospermum medullosum*, *Santalum austrocaledonicum*, *Agathis macrophylla*, *Canarium indicum* and *Terminalia catappa* to reduce the pressure from commercial harvesting of natural stands.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

To date none of Vanuatu's plant species are believed to be critically endangered by trade. Government agencies have been able to respond to perceived risk through regulations and management.

VI) Constraints to achieving progress towards the target

- There is inadequate biological and ecological information to inform management and regulation decisions about species of potential concern. For example the status within Vanuatu of wild species such as *Cyatheaceae spp*, which are exported as carved totems and statues are largely unknown.
- The status of wild plant species subject to trade is largely un-monitored.
- Several agencies hold authority to manage living resources including permitting the import and export of living resources. This at times has led to inconsistency in procedure or disagreement over which legal provision should take precedence. Reviews conducted by the National Biosafety Framework project recommended the need to align legislation to ensure a national rather than sectoral focus and to address procedural inconsistencies that may exist.
- Regulations to control the use and trade of rare and endemic species under the Environment Management and Conservation Act (2003) have yet to be developed. While it is recommended this gap needs to be addressed, the Environment Unit is under staffed and lacks adequate capacity.
- There have been suspicions about attempts to illegally export several rare species including *Erythrura cyaneovirens* and *Brachylophus fasciatus*. Unfortunately, Vanuatu authorities lack capacity to adequately pursue suspicions.

VII) Any other relevant information

While international trade is controlled there are also concerns about the impacts of internal trade on several species. A species of concern to the Forestry Department is *Endospermum medullosum* which has been harvested for the internal timber market. Enrichment and plantation plantings of this species is promoted, but only limited stands remain in lowland forests around the country

Target 12. Thirty percent of plant-based products derived from sources that are sustainably managed.

I) Has your country established national target corresponding to the above global target?

a) Yes	X
b) No	

Please specify

Vanuatu's National Priority and Action Agenda (*op. cit.*) places priority on ensuring **all** natural resources are sustainably used, including plant based products.

Vanuatu's National Biodiversity Strategy and Action Plan (1999), the National Forestry Plan (2001) and the Code of Logging Practice (1998) all emphasise sustainable use of plant resources.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes	X
b) No	

Please specify

Vanuatu's National Priority and Action Agenda (*op. cit.*) places priority on ensuring all natural resources are sustainably used, including plant based products. Vanuatu's National Biodiversity Strategy and Action Plan places emphasis on the sustainable use of biological resources as do the National Forestry Plan and the Code of Logging Practice (1998).

The work programme of the Department of Agriculture and Rural Development includes promotion of sustainable farming systems.

III) Current status (please indicate current status related to this target)

There is inadequate ecological information to accurately determine the extent to which Vanuatu's plant based products are derived from sources that are managed sustainably.

It is generally agreed that Vanuatu's biodiversity and subsistence farming methods have co-evolved ... so that traditional subsistence agriculture is sustainable. However, there have been significant changes to the land use and agricultural practices in recent decades with an expansion of small holder commercial agriculture and rapid conversion of lowland forest into agricultural land. There are concerns that these economic activities are not managed with a view to sustaining biological systems.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The Code of Logging Practice (1998) provides for sustainable harvesting of timber from Vanuatu's forests and is well adhered to. In addition the Department of Forestry has participated in a German funded regional project that has engaged communities in decisions on sustainable forest management.

The Environment Management and Conservation Act (2003) allows the Minister responsible for Environment to prescribe and promote standards, guidelines or codes of environmental practice.

Several projects implemented within the Agriculture Department have promoted site stable and sustainable agricultural systems. While there are no funded projects at present, agricultural field assistants continue to promote sustainable farming systems in localities where there are concerns about the sustainability of agricultural production.

The Code of Logging Practice (1998) provides for selective harvesting of timber from Vanuatu's forests, and forest resources are more sustainably used than in the past.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

There is inadequate ecological information to accurately determine the extent to which Vanuatu's plant based products are derived from sources that are managed sustainably.

Concerns have been expressed that current harvesting of *Endospermum medullosum* is unsustainable with only limited stands remaining in lowland forests around the country. In response the Department of Forestry promotes woodlot and replenishment plantings of this species.

Policies, regulations and procedures under the Environment Management and Conservation Act (2003) have yet to be developed.

There is a perceived need for greater and more structured cooperation between diverse institutions such as resource management departments, Trade departments, Provincial Administrations and the private sector to ensure plant resources are sustainably managed.

VI) Constraints to achieving progress towards the target

Vanuatu's progress towards this global target is constrained by:

- lack of information about national biodiversity, its conservation status and the use of plant based products from biodiversity that is necessary to inform and guide managers as to whether plant based products are derived from sustainably managed sources or not. For example traditional carvings made from the trunk of *Cyatheaceae spp* are exported. Without more detailed knowledge of Vanuatu's biodiversity it is not possible to determine whether usage levels are sustainable or not.
- The absence of guidelines or an enforceable code that can be applied to land clearing and conversion to agriculture is a weak point in addressing the , especially give the national economic emphasis on increasing commercial agricultural production.
- Landowners or communities are not adequately informed on strategies to be able to ensure their harvesting of plant based products are sustainably managed. This reflects not the lack of information, but the limited capacity of government agencies and NGOs to provide extension and information services to all rural areas. TV, radio and newspaper coverage of rural areas is slight, literacy levels are often low, and so information exchange options are limited.

VII) Any other relevant information

Box XXIV.

Target 13. The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

80% of Vanuatu's population live in rural areas and depend on local knowledge of terrestrial, aquatic and coastal marine resources for their livelihoods, local food security and health care.

Despite the obvious importance of this target to Vanuatu no equivalent target has been set at a national level.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

A range of Vanuatu agencies address components of this global target.

Vanuatu's Cultural Centre aims to maintaining, recording and preserve Vanuatu's indigenous knowledge, innovations and practices, including practices that use plant resources to support sustainable livelihoods, local food security and health care.

The Department of Forests Extension Officers work with subsistence communities to identify plant resources of cultural and use importance. Use information and indigenous knowledge about plant resources are recorded in the Herbarium database. Prior to permitting logging land owners are assisted to mark trees important for cultural, livelihood or food security purposes so they are reserved from logging.

The Agriculture Department encourages the use of traditional plants to control pests and diseases affecting food crops, and maintains food security programmes based on traditional foods.

The Environment Unit is collaborating with Culture Centre to record indigenous biodiversity knowledge and management practices on three islands of Gaua, Santo and Tanna.

III) Current status (please indicate current status related to this target)

While much is being done to maintain, record and preserve local knowledge of plant biodiversity and its uses, anecdotal information from rapid appraisals and participatory rural appraisals indicates that the experience at village level is that custom knowledge, respect for custom knowledge and the traditional natural resource base all continue to decline.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

A diverse range of activities within Vanuatu help to address this target.

Vanuatu's Environment Unit and Cultural Centre have developed a close working relationship. The Vanuatu Cultural Centre is represented on the National Biodiversity Advisory Committee, and is a participant in several conservation working groups. The two agencies consult on ethno-biological activities and are collaborating to integrate conservation of endemic plant species and traditional use and knowledge on Tanna and Gaua Islands.

To address the decline of local and traditional knowledge Vanuatu's Cultural Centre is leading in-country work to record and encourage the continued use of local ways of knowing, local languages and local environmental knowledge, and is advocating for the inclusion of traditional environmental knowledge in the school curriculum.

The database of the Vanuatu's National Herbarium includes information on local plant names, informants and the local uses of plants, and herbarium officers are progressively adding new entries.

The Forestry Department has conducted extension work to ensure communities understand the broad values of their forest resources, and uses the Code of Logging Practice (1998) to reduce the risk that forest harvesting activities affect resources that support traditional subsistence livelihoods. Trees identified by landholders to be significant for local use or cultural reasons are reserved from logging licenses.

Within its sustainable agriculture programme the Department of Agriculture and Rural Development encourages the use of traditional plants and technologies to manage pests and diseases that affect subsistence crops.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Key indicators of this target are the maintenance of local languages, ability to use local languages to express traditional knowledge about plant biodiversity and maintenance of the diversity of plant species.

While there has been progress towards this target, much work remains to be done.

VI) Constraints to achieving progress towards the target

Numerous constraints affect progress toward this target.

- Societal values are in transition. Through the modern media of education, information transfer, entertainment and religion ni-Vanuatu are continually exposed to non-traditional values, norms and expectations. For many young ni-Vanuatu this now exceeds their exposure to traditional forms of knowledge. This experience is contributing to rapid redefinition of Vanuatu social and cultural norms and is contributing to a perceived decline of indigenous knowledge of plant biodiversity. To reverse this trend it has been suggested that traditional culture and biodiversity knowledge needs to be included in the education curriculum. However to do so is challenging given the high level of linguistic and cultural diversity per head of population. Constraints include provision of teaching resources and trained teachers and making decisions on whether children learn the custom of their own nasara and clan or more generic content, especially where people from diverse cultural groups attend the one class.
- For most ni-Vanuatu land and associated natural resources are the means of maintaining subsistence livelihoods and earning income. Rural ni-Vanuatu are looking for ways to participate in the modern economy to earn income to meet the costs of modern education, health and other services. The most accessible and practical options they have are harvesting of timber resources and conversion to agriculture. If the decline of plant resources and associated indigenous and local knowledge is to be addressed, it is important to provide alternative economic strategies that meet rural livelihood needs. While the Departments of Agriculture and Forestry both promote a range of traditional non-forest crops and agro-forestry practices, the economic return from these options is often small for the work involved. There is a need for technical and marketing innovations to provide tangible benefits from the conservation of plant biodiversity and knowledge about those resources.
- While there is a strong national commitment to maintaining traditional knowledge and practices and a strong commitment to plant conservation this tends to occur as two separate bodies of work requiring different skills and approaches. Cross sectoral cooperation and holistic integrated approaches towards this global target remain weak.

VII) Any other relevant information

Target 14. The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes.

I) Has your country established national target corresponding to the above global target?

a) Yes

X

b) No

Please specify

Objective 5 of Vanuatu's National Biodiversity Strategy and Action Plan addresses raising awareness of biodiversity and its values. Specific initiatives to address this objective are addressed by Vanuatu's Environment Unit Information and Education programme, by Vanuatu's National Capacity Self Assessment and included in a GEF funded conservation project that commenced in late 2005.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

X

b) No

Please specify

Objective 5 of Vanuatu's National Biodiversity Strategy and Action Plan addresses raising awareness of biodiversity and its values. Priority is given to awareness and behaviour related to movements and management of invasive alien species; promoting awareness of natural resource laws and regulations; awareness of endemic and at risk species; and strengthening of national curriculum addressing aspects of biodiversity, including traditional knowledge and language relating to biodiversity.

Vanuatu's National Forest Policy (2000) places the focus of Forestry Extension Programme on sustainable forest management, tree planting and agroforestry, promoting the many values of maintaining forest and productive trees. Guidelines within the Code of Logging Practice (1998) address the need for conservation of plant diversity, maintenance of key ecosystem functions and maintenance of the resources available to subsistence communities.

Vanuatu's Department of Fisheries promotes awareness of the importance of sea grass and mangrove habitats for the management of marine resources.

III) Current status (please indicate current status related to this target)

Vanuatu's natural resource sector agencies recognise the importance of incorporating conservation information into community, education and public awareness programmes. This is achieved through in-community extension activities, use of theatre and use of mass media such as radio and print communications. However, financial and human resource constraints limit the achievements that have been made.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Vanuatu's National Year of Forest Regeneration (2003) gave considerable exposure to the value and importance of forest ecosystems and its emphasis on regeneration and planting continues in current community extension initiatives. Similarly, Vanuatu's National Year of Fisheries (2004) helped raise awareness of the need to manage marine resources sustainably at a local basis, but did not specifically target sea grasses and mangroves. Work that focuses on local management of coastal marine resources tends to emphasise coral reefs.

Vanuatu's Environment Unit continues to raise awareness of the importance of biodiversity and the needs for its conservation. The Unit has upgraded its library and information centre to improve the accessibility of information to students, individuals and organisations, and an environment awareness programme is broadcast on national radio fortnightly. A GEF funded Environment Unit project commencing late in 2005 will strengthen the capacity of the Environment Unit to provide effective information and extension services to rural communities.

Vanuatu's Forestry Extension Programme addresses sustainable forest management, tree planting and agroforestry, promoting the many values of maintaining forest and productive trees. Guidelines within the Code of Logging Practice (1998) address the need for conservation of plant diversity, maintenance of key ecosystem functions and maintenance of the resources available to subsistence communities. Through the work of the National Herbarium the Department of Forestry actively engages local communities in discussing the uses and traditional knowledge of plants, reinforcing recognition of their importance to landholders and their communities. The

Department has also conducted two important pilot projects on Santo. One project works with traditional landholders to develop capacity for sustainable forest management. The other works with landholders in areas of East Santo to promote regeneration and forest enrichment.

Vanuatu's Department of Forestry, the Environment Unit, UNELCO Ltd and the Department of Geology, Mines and Water Resources are collaborating to establish a botanical garden in the Tagabe River catchment. This provides an excellent opportunity for education and public awareness about plant biodiversity.

A project hosted by Vanuatu's Environment Unit is communicating the importance of mangrove systems as habitat for *Cardiosoma hiritipes*.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Over the last decade extension and communication activities have raised awareness of the importance of plant diversity and the importance of local plant conservation initiatives. Many communities now seek to establish their own locally managed protected areas or to reaffirm traditional tabus over selected sites. The Forestry Department has difficulty responding to all communities expressing interest to participate in planting and regeneration.

However, the body of work to date has not given communities capacity to adopt practical alternative economic and social strategies that meet their needs to participate in the modern economy while conserving plant diversity. Consequently conversion of natural systems to agricultural systems continues to effectively reduce plant diversity in many locations. More work is required to shift attitudes to more holistic ecosystem oriented conservation of plant diversity.

VI) Constraints to achieving progress towards the target

A particular constraint stems from Vanuatu's linguistic and cultural diversity. Over 100 languages are in use within a population of less than 200,000 people. The lingua franca Bislama, a form of Melanesian Pigin English, has limited capacity to communicate key environmental issues: one term might apply to a number of species, while many species do not have a Bislama name. Traditional languages are far richer in terms to describe environment and plant diversity, but it is not logistically feasible to take work to this level.

Vanuatu's population lives on scattered islands, with the largest having rugged and mountainous interiors. The costs of travel and communication are high. Many islands are not reached by modern mass media such as radio, television or newspapers. Many villages are not serviced by road transport. Effective communication is expensive and time-consuming, and government and non-government have limited capacity to out reach to all areas of the country.

The adequacy of public awareness programmes are also constrained by the limited information on the status and ecology of Vanuatu's plant biodiversity. Information is inadequate to inform resource management and conservation initiatives, and there is a particular lack of information on practical livelihood alternatives communities can adopt to meet their economic needs.

VII) Any other relevant information

Box XXV.

Target 15. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

I) Has your country established national target corresponding to the above global target?

a) Yes

b) No

X

Please specify

Vanuatu's National Biodiversity Strategy and Action Plan stresses the need to build capacity through technical and management training. However specific national targets for year 2015 have not been set.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?

a) Yes

b) No

X

Please specify

Vanuatu's National Biodiversity Strategy and Action Plan (1999) stresses the need to build capacity through technical and management training, including in-service training and participation in formal tertiary training courses. However, a specific human resource development plan has not been developed as yet.

Vanuatu's Fisheries Department has an active cooperation program with Japan International Cooperation Agency (JICA). One component of this enables ni-Vanuatu staff to be attached to an agency in Japan to receive training and experience in aspects of sustainable management of marine resources. The Department also provides training in marine resource management at a community level in association with the Vanuatu Maritime College and local Fisherman's Associations, and Extension Officers advise communities on locally managed marine areas.

Vanuatu's National Forestry Policy (2000) includes strategic goals for the provision of professional and technical forestry training to ensure there are adequate numbers of trained foresters to meet the need of sustainable forest management. Training has been provided to forest operators to facilitate compliance with the Code of Logging Practice (1998).

III) Current status (please indicate current status related to this target)

Vanuatu's Forestry Department has three staff within their Conservation Unit, two of whom primarily work on the National Herbarium collections. The Department's Director has formal qualifications in environmental management.

The Environment Unit has one professional officer devoted to information and extension activities. All natural resource agencies have vacant positions for professional staff. These remain vacant because of recurrent budget ceilings imposed. The number of people working to achieve plant conservation targets has not increased over the past five years.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Human resource development needs are identified and addressed at Departmental, national and regional level, and staff of government and non-government agencies have had wide opportunity to participate in training activities provided in county and by regional inter-governmental agencies.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Given budget restraints there has been limited recruitment into the public service in the past decade, and at best positions vacated have been filled. Consequently the number of people involved directly in plant conservation has been static over the past decade.

Similarly there has been limited opportunity to improve the facilities with which officers work. Particular concern has been failure to obtain funding to establish laboratory space, permanent accommodation for herbarium collections and to complete the planned flora and fauna database and GIS.

VI) Constraints to achieving progress towards the target

Vanuatu lacks appropriate facilities to address plant conservation goals. An immediate priority is for improved herbarium facilities and associated laboratory. However, government resources are preferentially directed toward basic health and education services and external donors have not expressed interest in supporting this need. There is also a need to establish ecological monitoring sites to provide information to enable plant conservation strategies to be set.

Vanuatu also has inadequate numbers of trained personnel working in plant conservation to meet national and global targets. However, the national budget does not allow further recruitment.

Staff of agencies have often benefited from opportunity to participate in a range of on the job and external training opportunities. However, experience has often been that agencies lack capacity and technical facilities for them to effectively apply the new skills that have been acquired (Liu, 2004).

VII) Any other relevant information

Often training appears to be conducted as a matter of course rather than to achieve particular strategic results. There is a need for regional bodies in particular to more systematically evaluate the impacts of their training and networking activities, to ensure the benefits are significant and sustainable, and the opportunity cost considered.

Box XXVI.

Target 16. Networks for plant conservation activities established or strengthened at national, regional and international levels.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
Vanuatu participates in a range of networks for plant conservation at national, regional and international levels. While these are beneficial no specific national targets have been set.	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
While networking for plant conservation is not emphasized in national plans and strategies it is integral to many work programmes as listed below.	
III) Current status (please indicate current status related to this target)	
<p>Officers of Vanuatu agencies participate in the following regional networks that address plant conservation targets:</p> <ul style="list-style-type: none"> • Regional Heads of Forestry Meeting • SPREP Meetings for technical staff and Ministers responsible for the Environment. • Secretariat of the Pacific Community facilitated Plant Protection networks. • Networks established through the SPRIG project and the GTZ Regional Forestry Project • ACIAR networks for assessment and production of Sandalwood • National Biodiversity Strategy and Action Plan Coordinators networks • SPREP IWP Project Coordinator's network • Pacific Regional Conservation Round Table • Regional Invasive Species Network • Locally Managed Marine Area Association <p>There are also a number of internal networks associated with particular work programmes and functions.</p> <ul style="list-style-type: none"> • National Biodiversity Advisory Committee • A number of project coordinating committees and technical advisory committees • Committees organising national environment week activities • Vanua Tai Environmental Monitors Network • Wantok Environment Centre • Tagabe Catchment Committee 	

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Regional intergovernmental organisations provide considerable assistance to develop and support networks within the Pacific Region. The Secretariat of the Pacific Community facilitates regional coordination and networking in agriculture, forestry, plant protection, population data and geographic information. It is also a central source of advice to the Department of Fisheries on risk assessment. The South Pacific Regional Environment Programme performs a similar role with respect to environmental conservation. The Vanuatu Government releases staff to participate in the activities of these networks.

In the past 5 years most government agencies have gained access to email and internet based communication systems. Internet based communications have allowed significant improvements in the capacity of staff of Vanuatu agencies to liaise in-country and with regional and international networks. The Regional Invasive Species Network is a typical example.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Vanuatu is represented in a wide range of both regional and in-country networks. Participation in many regional networks is supported by intergovernmental agencies.

Internet based communications facilitates regional and international networks.

VI) Constraints to achieving progress towards the target

- Effective networks need coordination and an element of leadership. Many of the networks in which Vanuatu participates are established as a result of regional project based activities which are of short term duration. Resources are not always available to sustain on-going communication links and information sharing.
- Networks and communication links in-country tend to be informal and developed through personal interaction with other staff. Limited access to electronic and telephone communications in rural areas means that there is limited opportunity for rural people to effectively participate in in-country and regional networks.
- There is a tendency for networks to be sectoral in focus, with information being inadequately shared across the range of people and agencies to encourage more holistic ecosystem approaches to plant conservation.
- Networking often appears to be encouraged as a matter of course rather than to achieve strategic results. As a consequence there are reservations about the quality of impact of many networks, and concerns about an excess of information that cannot be absorbed or used. There is a need to more systematically evaluate the impacts of networking activities, to ensure the benefits are sustainable; that the benefits actually address priority needs; and that the opportunity cost is minimal.

VII) Any other relevant information

Information exchange is important. But there is often a greater need for specific practical capacity that cannot be delivered through networks and information exchange: needs such as for a permanent facility to accommodate the collections and records of the National Herbarium records; for in-situ conservation sites and reserves; and for baseline ecological research on Vanuatu's plant communities.

Box XXVII.

Please elaborate below on the implementation of this strategy specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu has a strong commitment to sustainable management and conservation of plant biodiversity, but has limited resources and capacity to direct to this goal. The progress that has been made in the specific areas outlined above is hampered by inadequate infrastructure and an inadequate information base. Limited progress has been made toward realising key national priorities relating to collection of baseline information on plant biodiversity, management and use of herbarium records, implementing specific plant conservation strategies and updating the national forest inventory.

Ecosystem Approach

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. At its second meeting, the Conference of the Parties has affirmed that the ecosystem approach is the primary framework for action under the Convention (decision II/8). The Conference of the Parties, at its fifth meeting, endorsed the description of the ecosystem approach and operational guidance and recommended the application of the principles and other guidance on the ecosystem approach. The seventh meeting of the Conference of the Parties agreed that the priority at this time should be facilitating implementation of the ecosystem approach. Please provide relevant information by responding to the following questions.

3. ¹ Is your country applying the ecosystem approach, taking into account the principles and guidance contained in the annex to decision V/6? (decision V/6)

a) No	
b)	
c)	X
d)	

4. Is your country developing practical expressions of the ecosystem approach for national policies and legislation and for implementation activities, with adaptation to local, national, and regional conditions? (decision V/6)

a) No	
b)	
c) principles of the ecosystem approach	X
d) principles of the ecosystem approach	

5. Is your country strengthening capacities for the application of the ecosystem approach, and providing technical and financial support for capacity-building to apply the ecosystem approach?

¹ Please note that all the questions marked with have been previously covered in the second national reports and some thematic reports.

(decision V/6)	
a) No	
b)	X
c)	

6. ■ Has your country promoted regional cooperation in applying the ecosystem approach across national borders? (decision V/6)	
a) No	
b)	
c)	X
Further comments on regional cooperation in applying the ecosystem approach across national borders.	
<p>Vanuatu is a party to regional and international fishing agreements that promote, among other things, regional approaches to migratory fisheries management. Some principles of the ecosystem approach are apparent in aspects of this work.</p>	

7. Is your country facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach? (decisions VI/12 and VII/11)	
a) No	
b) No, some programmes are under development	
c) Yes, some programmes are being implemented (please provide details below)	X
d) Yes, comprehensive programmes are being implemented (please provide details below)	
Further comments on facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach.	
<p>Some principles of the ecosystem approach have been included in the exchange of experiences, capacity building, technology transfer and awareness raising that occurs within regional or bilateral development projects. While this has not as yet shifted Vanuatu to fully deploy an ecosystem approach the country has growing capacity in areas such as decentralisation of environment management to the community level; adoption of adaptive management practices; and integrating conservation into resource development and management activities.</p>	

8. Is your country creating an enabling environment for the implementation of the ecosystem approach, including through development of appropriate institutional frameworks? (decision VII/11)	
a) No	
b) No, but relevant policies and programmes are under development	
c) Yes, some policies and programmes are in place (please provide details below)	X
d) Yes, comprehensive policies and programmes are in place (please provide details below)	

Further comments on the creation of an enabling environment for the implementation of the ecosystem approach.

The area where policies and programmes most reflect the principles of the Ecosystem Approach are in initiatives for coastal fisheries management, that involve decentralized management of coastal marine resources and apply a balanced mix of modern and traditional management measures in a way that fosters integration of conservation and development

C. ARTICLES OF THE CONVENTION

Article 5 – Cooperation

9. ■ Is your country actively cooperating with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biological diversity?

a) No	
b) Yes, bilateral cooperation (please give details below)	
c) Yes, multilateral cooperation (please give details below)	X
d) Yes, regional and/or subregional cooperation (please give details below)	X
e) Yes, other forms of cooperation (please give details below)	

Further comments on cooperation with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biodiversity.

Vanuatu is an oceanic country and shares the international waters of the Pacific Ocean with other countries. There is extensive cooperation between Pacific nations for the sustainable use of highly migratory fish stocks. Vanuatu is also involved with regional debate and cooperation over establishment of a whale sanctuary in the South Pacific. Proposed amendments to the Fisheries Regulations include provision for Vanuatu's exclusive economic zone to be declared a whale sanctuary.

Vanuatu is also a flag of convenience for international ships. Vanuatu recognises obligations to ensure fishing vessels operating under the Vanuatu flag use fishing techniques that do not lead to undue by-catch of marine mammals, turtles or other marine species.

10. Is your country working with other Parties to develop regional, subregional or bioregional mechanisms and networks to support implementation of the Convention? (decision VI/27 A)

a) No	
b) No, but consultations are under way	
c) Yes, some mechanisms and networks have been established (please provide details below)	X
d) Yes, existing mechanisms have been strengthened (please provide details below)	X

Further comments on development of regional, subregional or bioregional mechanisms and networks to support implementation of the Convention.

Vanuatu is a member nation of the South Pacific Regional Environment Programme, the Pacific Community and the South Pacific Forum. These agencies facilitate regional and subregional collaboration to support implementation of the Convention.

Regional activities with which Vanuatu is involved that address aspects of the UN Convention on Biodiversity include:

- the UNDP/SPREP/ Forum Fisheries Agency/14 Pacific Island Country International Waters Project which is developing in-country capacity to address management of marine resources.
- the proposed UNDP/SPREP/ Invasive Species Network/Pacific Island Country Invasive species programme.
- regional forestry networks fostered through the activities of the AusAid funded SPRIG project.
- UNDP facilitated regional meetings of national Biodiversity Project Coordinators.
- the regional conservation round table meetings.
- the regional plant taxonomic initiative providing a centralised collection and training point in Fiji.

11. Is your country taking steps to harmonize national policies and programmes, with a view to optimizing policy coherence, synergies and efficiency in the implementation of various multilateral environment agreements (MEAs) and relevant regional initiatives at the national level? (decision VI/20)

a) No	
b)	X
c)	
d)	

Further comments on the harmonization of policies and programmes at the national level.

A National Capacity Self Assessment Process is underway. This provides a mechanism for debate about initiatives that will foster greater connectedness and consistency between sectoral policies and programmes and national commitments made as a party to multilateral environment agreements. Outcomes from this work will include recommendations for building capacity to optimise policy coherence and efficiency.

Box XXVIII.

Please elaborate below on the implementation of this strategy specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Given economic and resource constraints Vanuatu has limited capacity to address the full range of articles and decisions of the Convention on Biodiversity. Cooperation has been integral to the progress and achievements in the priority areas that have been described in this report. Ongoing cooperation will be essential to further Vanuatu's capacity to respond to responsibilities assumed as a signatory to the CBD.

Article 6 - General measures for conservation and sustainable use

12. Has your country put in place effective national strategies, plans and programmes to provide a national framework for implementing the three objectives of the Convention? (Goal 3.1 of the Strategic Plan)	
a) No	
b) No, but relevant strategies, plans and programmes are under development	
c) Yes, some strategies, plans and programmes are in place (please provide details below)	X
d) Yes, comprehensive strategies, plans and programmes are in place (please provide details below)	
Further comments on the strategies, plans and programmes for implementing the three objectives of the Convention.	
<p>While Vanuatu does not have a comprehensive national sustainable development plan there is a strong sectoral emphasis on sustainable use of natural resources that provides a guiding framework for implementing Article 6 of the Convention.</p> <p>Vanuatu's National Priority and Action Agenda (Government of the Republic of Vanuatu, undated) includes the goal of "ensuring the sustainable use of natural resources" .</p> <p>The mission statement and objectives of Vanuatu's National Biodiversity Strategy and Action Plan (1999) more specifically address the objectives of the Convention.</p> <p>The goal of Vanuatu's National Forest Policy (2000) is to ensure the sustainable management of Vanuatu's forests to achieve greater social and economic benefits for current and future generations. The Code of Logging Practice (1998) gives operational and legal effect to the goal of sustainable forest management. This is complemented by community level initiatives that transfer skills in sustainable forest management, management of regeneration and forest replenishment.</p> <p>Vanuatu's Fisheries Act (1987) provides the legal basis for sustainable management of the country's fisheries resources, establishment of marine protected areas and ensuring products derived from these resources are used in a sustainable manner. The Act is implemented through the Fisheries Regulations (1987) which provide for closed seasons (<i>Birgus latro</i>); limited harvesting (<i>Chelonidae spp.</i>) size limits (<i>Birgus latro</i>, <i>Charonia tritonis</i>, <i>Trochus niloticus</i>, <i>Turbo marmoratus</i>, <i>Panulirus spp.</i> <i>Paribus caledonicus</i>); catch limits and quotas (<i>Birgus latro</i>); licensing of operators(aquarium coral and reef fisheries); and controls on potentially unsustainable harvesting technologies (e.g. dynamite fishing). The Fisheries Department is also actively engaged in stock replenishment where concerns arise that resource use is depleting resource stocks.</p> <p>Vanuatu's Department of Agriculture and Rural Development has trialed and promoted site stable agriculture systems to maintain soil productivity, reduce pressure on land resources and ensure food security. At the Vanuatu Agricultural Research and Training Centre the Department has a number of <i>ex situ</i> varietal collections, including root crops, breadfruit, island cabbage, kava, coconut, coffee and cocoa. The high costs associated with maintenance of <i>ex situ</i> collections have prompted researchers at VARTC to also encourage <i>in situ</i> collections.</p> <p>Following debate about the effects of invasive species on biodiversity Vanuatu's Draft Biosecurity Policy expands the responsibility of the Vanuatu Quarantine and Inspection Services to address invasiveness and environment impact within pest risk assessments.</p>	

13. ■ Has your country set measurable targets within its national strategies and action plans? (decisions II/7 and III/9)	
a) No	
b) No, measurable targets are still in early stages of development	X
c)	
d)	

e) Yes, reports on implementation of relevant targets available (please provide details below)	
Further comments on targets set within national biodiversity strategies and action plans.	

14. Has your country identified priority actions in its national biodiversity strategy and action plan? (decision VI/27 A)

a) No	
b)	
c)	X

Vanuatu's National Biodiversity Strategy and Action Plan defines clear objectives and identifies priority actions for each of these objectives. Actions were prioritised following provincial and national consultations. Priority actions were set for

- a) Watershed management
- b) Management of introduced species
- c) Sustainable management of used resources
- d) Management of cultural heritage including traditional knowledge and uses of biodiversity
- e) Conservation of significant species and places
- f) Formalising a process of environmental impact assessment
- g) Financing biodiversity conservation
- h) Recognition of traditional intellectual property rights
- i) Controls on the import and export of species
- j) Establishing a scientific research council
- k) Developing and maintaining and in-country biodiversity data bank
- l) Developing systems for environmental monitoring to inform management decisions
- m) Encouraging research into priority species
- n) Improving access to technical resources necessary for biodiversity management
- o) Establishing a high level Environment Coordinating Council
- p) Building human resource capacity for environmental management through technical and management training
- q) Raising awareness and understanding of the value and importance of biodiversity, the risks of invasive species and their movement between islands and of environmental resource management regulations.

Since the National Biodiversity Strategy and Action Plan was prepared in 1999 there has been significant progress toward many of these priorities. Particular weaknesses remain in developing internal financing mechanisms, establishing information data banks, conducting monitoring and ensuring effective conservation of priority areas.

15. Has your country integrated the conservation and sustainable use of biodiversity as well as benefit sharing into relevant sectoral or cross-sectoral plans, programmes and policies? (decision VI/27 A)

a) No	
b) Yes, in some sectors (please provide details below)	
c) Yes, in major sectors (please provide details below)	X
d) Yes, in all sectors (please provide details below)	

Further information on integration of the conservation and sustainable use of biodiversity and

benefit-sharing into relevant sectoral or cross-sectoral plans, programmes and policies.

Conservation and sustainable use of biodiversity has been incorporated into the sectoral plans, programmes and policies of a range of agencies as listed in box 12 above.

However, most sectors have yet to fully incorporate the issue of sharing of benefits from the use of biodiversity with traditional owners of that biodiversity. It is normal practice in Vanuatu to recognise the legal rights of traditional landholders, and to provide compensation for use of their resources or land. However benefits from applications of their biodiversity have been less well recognised. As a consequence the owners of varieties of economic plants included in *in situ* and *ex situ* collections, or distributed for wider propagation, have in the past been inadequately recognised. At a national level sharing of benefits is being discussed in the context of the Draft Patents, Trademarks and Designs Bills and the Copyrights Act, and drafting of legislation for a National Scientific Research Council.

16. Are migratory species and their habitats addressed by your country's national biodiversity strategy or action plan (National Biodiversity Strategy and Action Plan)? (decision VI/20)

a) Yes	
b)	X
I) If YES, please briefly describe the extent to which it addresses	
a. Conservation, sustainable use and/or restoration of migratory species	
b. Conservation, sustainable use and/or restoration of migratory species' habitats, including protected areas	
(a) Minimizing or eliminating barriers or obstacles to migration	
(b) Research and monitoring for migratory species	
(c) Transboundary movement	
II) If NO, please briefly indicate below	
(a) The extent to which your country addresses migratory species at national level	<p>At a national level Vanuatu is primarily concerned with migratory fish species and is a party to multilateral agreements for the management of highly migratory fish stocks in the Pacific.</p> <p>Non-government support is received from Vanuatu's Game Fishing Association which has a tag and release program of Marlins and other sail fish.</p> <p>The Fisheries Regulations (1987) address conservation of marine turtles. A non-government organisation, Wan Smol Bag, coordinates volunteer community resource monitors in a turtle tag and release programme.</p> <p>Regulations to enable a whale sanctuary to be declared within Vanuatu's EEZ were drafted in 2005.</p>
(b) Cooperation with other Range States since 2000	

Biodiversity and Climate Change

17. Has your country implemented projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use? (decision VII/15)

a) No	
b) No, but some projects or programs are under development	
c) Yes, some projects have been implemented (please provide details below)	X

Further comments on the projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use.

Several projects aimed at mitigating and adapting to climate change have included elements that address sustainable resource use, one component of biodiversity conservation.

The Canadian funded regional project "Community Based Adaptation Management for Pacific Island Countries" is working with 3 pilot villages to trial community level approaches to vulnerability reduction. The pilot sites need to adapt to salt water intrusion into gardens, coconut plantations and village areas, coastal erosion, scarcity of freshwater resources and associated influences on food security.

Food Security and Farming System programmes managed by the Department of Agriculture and Rural Development enhance the capacity of villagers to withstand environment change including the use of traditional plants to manage plant pests and diseases; promotion of farming systems that reduce land degradation during cyclone and heavy rainfall events; and agroforestry options.

Vanuatu is undertaking a National Capacity Self Assessment process with the aim of strengthening the links between the work being undertaken on climate change, biodiversity conservation and land degradation.

18. Has your country facilitated coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification? (decision VII/15)

a) No	
b) No, but relevant mechanisms are under development	
c) Yes, relevant mechanisms are in place (please provide details below)	X

Further comments on the coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the UNFCCC and the UNCCD.

Vanuatu has participated in a range of projects to facilitate Climate Change mitigation and adaptation. This includes conducting Greenhouse Gas Inventories, reporting, development of a National Plan and work to reduce vulnerability. The National Advisory Committee on Climate Change (NACCC) has an overall advisory and coordination role. In addition, most external donor agencies make independent assessments to ensure the projects they assist are in accord with commitments made under the convention.

Vanuatu is undertaking a National Capacity Self Assessment process that provides a mechanism for strengthening links between sectoral policies and programmes and national commitments made by Vanuatu as a party to multilateral environment agreements. Outcomes from this work will include recommendations for building capacity so as to optimise policy coherence and efficiency.

Box XXIX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu, with assistance from the GEF enabling funds, completed a National Strategy and Action Plan for the conservation and sustainable use of biodiversity in 1999. Since then significant progress has been made to implement the national plan's recommendations. There is a need to review and revise the strategy and action plan to reflect the current situation. However, funds for this review have not been identified.

The national and sectoral focus of general measures is sustainable use of biological resources and this focus is incorporated into the strategic plans and work programmes of relevant agencies.

Work toward implementing the Convention on Biological Diversity has been partly integrated with work programmes on other multilateral environment agreements, most notably the Convention on Trade in Invasive Species and the Cartagena Protocol. The National Capacity Self Assessment exercise currently underway will identify opportunities to further strengthen integration.

As a small island nation Vanuatu has particular concerns about the threats posed by potential climate change and sea level rise. The initial priority of national climate change work has been capacity building for adaptation and vulnerability reduction, and managing risks to human and economic assets. Lower priority has been assigned to addressing the risks to biodiversity and incorporating biodiversity into adaptation measures.

An important constraint to implementation of work under this article is the limited data available to inform management of biological resources. Information is available for a small number of species of high economic use value, and both the Fisheries Department and Forestry Department monitor economic use of biological resources. Monitoring of a broader range of species and at ecosystem level is more limited. The Fisheries Department regularly monitors coral reefs at two locations off Efate Island to gain information on the general status of reefs, including information on coral bleaching, species diversity and population. The Forestry Department monitors forest regeneration at a similarly small number of locations.

Another important constraint is the difficulty securing financial assistance or budgetary inputs for many of the identified biodiversity conservation priorities. Government and donor policies give priority to provision of core social services in health and education, to strengthening governance and the development of the formal economy.

Article 7 - Identification and monitoring

19. ■ On Article 7(a), does your country have an ongoing programme to identify components of biological diversity at the genetic, species, ecosystem level?

a) No	
b) Yes, selected/partial programmes at the genetic, species and/or ecosystem level only (please specify and provide details below)	X
c) Yes, complete programmes at ecosystem level and selected/partial inventories at the genetic and/or species level (please specify and provide details below)	

Further comments on ongoing programmes to identify components of biodiversity at the genetic, species and ecosystem level.

Vanuatu has partly addressed goals for identification and monitoring of biodiversity at the species and genetic level, but the nation does not have a coordinated programme of work under this article.

The two staff of Vanuatu's National Herbarium have an on-going collection programme. The Herbarium collects and identifies Vanuatu's flora at species level, and facilitates botanical studies within Vanuatu.

The Department of Forestry's participation in the South Pacific Regional Initiative for Forest Genetic Diversity enabled staff to conduct provenance studies on four priority species documenting the range of variation within the species based upon fruit characteristics.

Vanuatu's Environment Unit facilitates the work of independent international researchers whose work increases knowledge about components of biodiversity at genetic, species and ecosystems level. Return of information to Vanuatu has become a specific requirement in the research approval process.

Vanuatu's Department of Agriculture in association with the Vanuatu Agricultural Research and Training Centre have ongoing programmes to document and collect varieties of taro, yam, kava, breadfruit and other significant agricultural species.

The Government is facilitating a French led research expedition in the second half of 2006 which will conduct a biodiversity assessment of Santo Island including marine, mountain, karst and freshwater environments. It will take some years before full results of this work become available.

20. On Article 7(b), which components of biological diversity identified in accordance with Annex I of the Convention, have ongoing, systematic monitoring programmes?

a) area covered)	Coastal reefs <1% Lowland rainforest <1%
b) taxonomic group and percentage of total known number of species in each group)	<i>Turbo marmoratus</i> <i>Trochus niloticus</i> <i>Birgus latro</i> <i>Santalum austrocaledonicum</i> <i>Cardiosoma hirtipes</i> <i>Wasmannia sp.</i> Fruit fly - <i>Bactrocera trilineola</i>
c) monitoring programmes)	0

Further comments on ongoing monitoring programmes at the genetic, species and ecosystem level.

Vanuatu lacks technical and financial resources to conduct comprehensive and systematic monitoring of biodiversity at ecosystem, species and genetic level. Short term development projects have helped initiate monitoring activities, but it is rare that the costs and work can be fully absorbed by relevant agencies on the end of development assistance. Consequently the monitoring that occurs tends to be time bound and focused on specific themes or species. There is no comprehensive environmental monitoring programme in place.

The monitoring that occurs is commonly to inform management decisions on the sustainable use of key resources such as *Turbo marmoratus* and *Trochus niloticus*. Vanuatu's demonstration project under the regional International Waters Project is putting in place monitoring of *Cardiosoma hirtipes* in the Crab Bay area of Malekula.

Forest monitoring plots were set up on Efate under the Vanuatu Sustainable Use Project to provide data on forest regeneration. Initial assessments showed good regeneration where there was active site management. Financial constraints have led to a cessation of active work and inconsistent monitoring visits.

Regular reef monitoring is conducted by Vanuatu's Department of Fisheries at two sites off Efate

Island. Occasional assessments take place at other locations in association with stock replenishment and local reef closures. A volunteer Reef Watch programme has been initiated, but data is not yet available.

21. ■ On Article 7(c), does your country have ongoing, systematic monitoring programmes on any of the following key threats to biodiversity?

a) No	
b) Yes, invasive alien species (please provide details below)	X
c) Yes, climate change (please provide details below)	X
d) Yes, pollution/eutrophication (please provide details below)	X
e) Yes, land use change/land degradation (please provide details below)	
f) Yes, overexploitation or unsustainable use (please provide details below)	X

Further comments on monitoring programmes on key threats to biodiversity.

Invasive Species

The Vanuatu Quarantine and Inspection Services systematically monitors transboundary movements of biodiversity to intercept invasive species, pests and diseases. The Department regularly monitors a small range of primarily agricultural pests including Fruit fly (*Bactrocera trilineola*), Pico (*Solanum torvum*), Lantana (*Lantana camara*), Fire Ant (*Wasmania auropunctata*), and Broom Weed (*Sida rhombifolia*).

Climate Change

Vanuatu's Department of Meteorology collects climate data from nine locations around Vanuatu. Data collected is maintained by the climatology section of the Department and is fed into climate change models. The CBDAMPIC Project within the Department of Meteorology monitored environmental change in association with three villages and assessing adaptation strategies to address community problems caused by sea level rise and salt water intrusion. Climate monitoring does not extend to monitoring of general biodiversity.

Pollution/eutrophication

There has been periodic monitoring of Port Vila harbour and lagoons for fifteen years but no systematic monitoring at other locations. The Department of Forests inspects timber treatment plants and operational points to ensure proper handling of chemicals and wastes, and advises appropriate authorities where further monitoring may be required.

Use of natural resources

The Department of Forests monitors timber harvesting operations to ensure timber harvesting is in accord with license agreements and the Code of Logging Practice (1998), and informally monitors regeneration and replanting areas. The Department of Fisheries monitors stock numbers of key commercial resources including *Turbo marmoratus*, *Trochus niloticus*, Beche de Mer, and *Birgus latro* and facilitates a coral reef monitoring programme funded by the Canadian Government through the University of the South Pacific.

22. ■ On Article 7 (d), does your country have a mechanism to maintain and organize data derived from inventories and monitoring programmes and coordinate information collection and management at the national level?

a) No	
b) No, but some mechanisms or systems are being considered	
c) Yes, some mechanisms or systems are being established	X
d) Yes, some mechanisms or systems are in place (please provide details below)	
e) Yes, a relatively complete system is in place (please provide details below)	

Further information on the coordination of data and information collection and management.

Vanuatu agencies have a number of distinct mechanisms to maintain and organise data derived from inventories and monitoring programmes. These include:

1. A national inventory of forest resources was completed in 1992, and incorporated into a computer based geographic information system. This information is now out of date and inadequate to inform forest management. The National Forest Sector Plan requires the inventory be updated but the Department has neither the financial nor human resources to update the inventory.
2. Data on flora and fauna was initially recorded in simple databases. Bilateral assistance was accepted to fully integrate this information into a national flora and fauna database and geographical information system. Work is incomplete. Separate databases are maintained and information is partially accessible to researchers and conservation programmes.
3. Vanuatu Quarantine and Inspection Services maintains an insect collection and works in collaboration with the Pacific Community to maintain and access data on alien species and pests of agricultural importance. Where there is need for management, programmes are developed and executed.
4. The Fisheries Department maintains data from marine monitoring programs and commercial fishing. A full time Fisheries Statistician is in-charge of this activity. Data from other project orientated monitoring programs are coordinated by regional institutions such as the Secretariat of the Pacific Community. These include fisheries data from Vanuatu which is available on request.

Vanuatu's agencies have limited capacity to coordinate and integrate environmental information collection and management at the national level, and so information primarily addresses sectoral priorities. Agencies lack capacity to continually revise and update the base data sets that inform geographic information systems.

23. ■ Does your country use indicators for national-level monitoring of biodiversity? (decision III/10)

a) No	
b) No, but identification of potential indicators is under way (please describe)	
c) Yes, some indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented)	X
d) Yes, a relatively complete set of indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented)	

Further comments on the indicators identified and in use.

Vanuatu agencies use indicators for monitoring purposes on a case by case basis, and at specific localities rather than nationally. For example in 2004 the marine sector used biological indicators to monitor the impact of the aquarium trade on biodiversity at various collection sites off Efate. Indicators were also used to assess the feasibility for developing a live reef fish export trade from Vanuatu. Findings from this work are still under analysis.

Indicators have been identified for assessing disturbances to coastal marine environments such as damage following passage of a cyclone or in event of an oil spill.

An attempt was made to apply macrobiotic indicators of freshwater quality. However, typical indicators applied in neighbouring countries such as Australia and New Caledonia proved inappropriate, and there was limited technical ability to develop a separate set of indicators for Vanuatu streams.

Box XXX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Staff of sectoral agencies recognise that monitoring and information systems are necessary for effective management of the use of biodiversity and to enable conservation of biodiversity. However, limited national resources are available to support long term monitoring. The monitoring that occurs is for the most part specific to sectoral resource management priorities and conducted with external financial assistance.

Vanuatu's limited progress towards implementing this article is compounded by the limited technical and scientific facilities and equipment in country, the lack of capacity to update base geographic data sets, and limited capacity to respond to problems that are identified. While Vanuatu's National Forest Policy (2000) and National Biodiversity Strategy and Action Plan (1999) both give priority to appropriate housing of taxonomic collections, biodiversity information and establishment of appropriate research facilities no progress has been made.

Decisions on Taxonomy

24. ■ Has your country developed a plan to implement the suggested actions as annexed to decision IV/1? (decision IV/1)

a) No	X
b) No, but a plan is under development	
c) Yes, a plan is in place (please provide details below)	
d) Yes, reports on implementation available (please provide details below)	

Further information on a plan to implement the suggested actions as annexed to decision IV/1.

Several priorities within Vanuatu's National Biodiversity Strategy and Action Plan (1999) address components of the actions annexed to decision iv/1. However limited progress has been made

towards these goals.

One priority is to establish a national biodiversity data bank, including a permanent and secure repository for flora and fauna collections, reference material and research reports and maintenance of electronic data. To strengthen any such initiative the National Biodiversity Strategy and Action Plan recommends agreements with regional museums for technical support, repatriation of information and collections held overseas, and research to better document the distribution, abundance and ecology of species occurring in Vanuatu.

The Biodiversity Strategy and Action Plan also emphasized the need for technical assistance to enable further in-country biodiversity inventory and taxonomic work. Focus was placed on needs for laboratory equipment and resources and on-the-job technical training.

The two officers of the National Herbarium have benefited from taxonomic training during attachments to the Fiji Herbarium, and staff of the Herbarium and the Environment Unit have participated in discussions over a regional taxonomic initiative. Staff of all natural resource agencies have benefited from informal taxonomic training provided by visiting scientists.

25. ■ Is your country investing on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections? (decision IV/1)

a) No	X
b)	

Further information on investment on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections.

Vanuatu's National Biodiversity Strategy and Action Plan (1999) placed high priority on development of infrastructure to accommodate the national taxonomic collections. However at a National level priority has been given to social and economic development. It has not been possible to commit financial resources to meeting the biodiversity priority of establishing appropriate infrastructure for taxonomic collections.

26. ■ Does your country provide training programmes in taxonomy and work to increase its capacity of taxonomic research? (decision IV/1)

a) No	X
b)	

Further information on training programmes in taxonomy and efforts to increase the capacity of taxonomic research.

Vanuatu has benefited from staff participation in regional training programmes under the taxonomic initiative and specific projects such as the South Pacific Regional Initiative for Forest Genetic Resources project. However in-country capacity to provide taxonomic training to others is limited.

27. ■ Has your country taken steps to ensure that institutions responsible for biological diversity inventories and taxonomic activities are financially and administratively stable? (decision IV/1)

a) No	
b)	
c)	X
d)	

28.*² Is your country collaborating with the existing regional, subregional and global initiatives, partnerships and institutions in carrying out the programme of work, including assessing regional taxonomic needs and identifying regional-level priorities? (decision VI/8)

a) No	
b) No, but collaborative programmes are under development	
c) Yes, some collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessments)	X
d) Yes, comprehensive collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessment and priority identification)	

Further information on the collaboration your country is carrying out to implement the programme of work for the GTI, including regional needs assessment and priority identification.

Vanuatu has participated in regional taxonomic initiatives coordinated by the University of the South Pacific, the Fiji Herbarium and the South Pacific Regional Environment Programme. These have included discussion toward a regional taxonomic initiative, training in herbarium curating and inventory, and participation in the Pacific and Asia Biodiversity Transect.

Given the limited scientific capacity in-country Vanuatu has also facilitated independent collaborative work by independent international researchers to improve taxonomic information on Vanuatu's biodiversity. In recent years work has been carried out, among others, by researchers from the Australian museum, the Museum of South Australia (ants, feather stars), National Museum (aquatic biodiversity), University of California (sponges), and the University of Dakota (reptiles).

29. * Has your country made an assessment of taxonomic needs and capacities at the national level for the implementation of the Convention? (annex to decision VI/8)

a) No	
b) Yes, basic assessment made (please provide below a list of needs and capacities identified)	X
c) Yes, thorough assessment made (please provide below a list of needs and capacities identified)	

Further comments on national assessment of taxonomic needs and capacities.

A formal assessment of Vanuatu's taxonomic needs and capacities has not been conducted. However, in-country taxonomic capacity is modest and Vanuatu's National Biodiversity Strategy and Action Plan noted priority taxonomic needs.

There are no professionally trained taxonomists within Vanuatu. Two staff attached to the national Herbarium have specialist knowledge of Vanuatu's flora. Small collections of insects (Vanuatu Quarantine and Inspection Services), marine fauna and aquatic fauna (Fisheries Department) exist, but are not actively curated.

The prioritised needs are

a) to establish a national biodiversity data bank, including a permanent and secure repository for

² The questions marked with * in this section on Taxonomy are similar to some questions contained in the format for a report on the implementation of the programme of work on the Global Taxonomy Initiative. Those countries that have submitted such a report do not need to answer these questions unless they have updated information to provide.

flora and fauna collections, reference material, research reports and maintenance of electronic data. Activities proposed in the National Biodiversity Strategy and Action Plan that complement such an initiative are agreements with regional museums for technical support, repatriation of information and collections held overseas and additional research to better document the distribution, abundance and ecology of species occurring in Vanuatu.

b) technical capacity building to enable in-country biodiversity inventory and taxonomic work, with a focus on laboratory equipment and resources and training of personnel.

30. * Is your country working on regional or global capacity building to support access to, and generation of, taxonomic information in collaboration with other Parties? (annex to decision VI/8)

a) No	
b) Yes, relevant programmes are under development	
c) Yes, some activities are being undertaken for this purpose (please provide details below)	X
d) Yes, many activities are being undertaken for this purpose (please provide details below)	

Further comments on regional or global capacity-building to support access to, and generation of, taxonomic information in collaboration with other Parties.

Vanuatu has participated in regional taxonomic initiatives coordinated by the University of the South Pacific, the Fiji Herbarium and the South Pacific Regional Environment Programme. However Vanuatu lacks capacity to provide capacity building support to other parties of the Convention.

31. * Has your country developed taxonomic support for the implementation of the programmes of work under the Convention as called upon in decision VI/8? (annex to decision VI/8)

a) No	X
b) Yes, for forest biodiversity (please provide details below)	
c) Yes, for marine and coastal biodiversity (please provide details below)	
d) Yes, for dry and sub-humid lands (please provide details below)	
e) Yes, for inland waters biodiversity (please provide details below)	
f) Yes, for mountain biodiversity (please provide details below)	
g) Yes, for protected areas (please provide details below)	
h) Yes, for agricultural biodiversity (please provide details below)	
i) Yes, for island biodiversity (please provide details below)	

Further comments on the development of taxonomic support for the implementation of the programmes of work under the Convention.

Vanuatu has limited taxonomic capacity. There are no professionally trained taxonomists within Vanuatu. Two staff attached to the National Herbarium have specialist knowledge of Vanuatu's flora. Small collections of insects (Vanuatu Quarantine and Inspection Services), marine fauna and aquatic fauna (Fisheries Department) exist, but are not actively curated.

The prioritised needs are

a) to establish a national biodiversity data bank, including a permanent and secure repository for flora and fauna collections, reference material, research reports and maintenance of electronic data. To gain maximum benefit from such a facility the National Biodiversity Strategy and Action Plan (1999) recommends agreements with regional museums for technical support, repatriation of information and collections held overseas, and additional research to better document the distribution, abundance and ecology of species occurring in Vanuatu.

b) technical capacity building to enable in-country biodiversity inventory and taxonomic work, with a focus on laboratory equipment and resources, and training of personnel.

However, there has been no progress towards these objectives. The only allocations in the national budget towards taxonomy are directed to curating of the National Herbarium.

32. * Has your country developed taxonomic support for the implementation of the cross-cutting issues under the Convention as called upon in decision VI/8?

a) No	X
b) Yes, for access and benefit-sharing (please provide details below)	
c) Yes, for Article 8(j) (please provide details below)	
d) Yes, for the ecosystem approach (please provide details below)	
e) Yes, for impact assessment, monitoring and indicators (please provide details below)	
f) Yes, for invasive alien species (please provide details below)	
g) Yes, for others (please provide details below)	

Further comments on the development of taxonomic support for the implementation of the cross-cutting issues under the Convention.

Vanuatu has several priority initiatives that address these cross-cutting issues, but these priorities do not relate to provision of taxonomic support.

**Article 8 - *In-situ* conservation
[excluding paragraphs (a) to (e), (h) and (j)]**

33. ■ On Article 8(i), has your country endeavored to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components?

a) No	
b)	
c)	
d) below)	X

Further comments on the measures taken to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components.

Sustainable use is directly addressed within the priorities set out in Vanuatu's National Development Priorities and Action Agenda (*op. cit.*) that guide the work planning and development programmes of sectoral agencies.

Sustainable use is embodied in the Mission statement and objectives of the National Biodiversity Strategy and Action Plan (1999), which includes specific goals and actions to promote wise of biodiversity for present and future benefit, actions to provide an enabling administrative and to provide a legal context for sustainable management of biodiversity. There has been good progress towards these goals.

The goal of the National Forest Policy (2000) is to ensure the sustainable management of Vanuatu's forests to achieve greater social and economic benefits for current and future generations. This goal is addressed in all strategies and work plans of the Forestry Department, including the work of the National Herbarium to document biodiversity throughout the country; the work of the forest utilisation section; and the forestry extension officers throughout the country. The Code of Logging Practice (198) and the Forestry Act (2001) provide the operational and legal context through which sustainable forest management goals are realised. Logging operations are also required to adhere to the provisions of the Water Resources Act (2003) to protect and maintain water catchments and associated environmental processes. Enrichment planting and reforestation are actively encouraged to minimise negative impacts on forest systems during timber harvesting.

The guiding policy for the fisheries sector is the fisheries section of the National Priorities and Action Agenda (*op. cit.*), which has a clear focus on management and commercialisation of coastal and reef fisheries. The Fisheries Act (1987) provides the legal basis for sustainable management of the country's inshore resources and ensuring products derived from these resources are managed and used in a sustainable manner. The Act is implemented through the Fisheries Regulations (1987) which provide for closed seasons (*Birgus latro*); limited harvesting (*Chelonidae spp.*), size limits (*Birgus latro*, *Charonia tritonis*, *Trochus niloticus*, *Turbo marmoratus*, *Panulirus spp. Paribus caledonicus*); catch limits and quotas (*Birgus latro*); *licensing of operators* (aquarium coral and reef fisheries); and controls on potentially unsustainable harvesting technologies (e.g. dynamite fishing). The Fisheries Department is actively engaged in a programme of stock replenishment where concerns arise that resource use practices may reduce resource stocks.

Work of the Department of Agriculture and the Farm Support Association over the last decade has included trials of site stable agriculture (as distinct from the traditional shifting agriculture) to promote sustainable use of land resources. There has been some uptake of these strategies by subsistence farmers in areas where land resources are limited and soils at risk of depletion, and where erosion and soil depletion of sloping land has been a problem.

34. ■ On Article 8(k), has your country developed or maintained the necessary legislation and/or other regulatory provisions for the protection of threatened species and populations?

a) No	
b)	
c) below)	X

Further information on the legislation and/or regulations for the protection of threatened species and populations.

Vanuatu's Environment Management and Conservation Act (2003) provides a legal regime for protection of threatened species and populations. The Act enables the Minister responsible for Environment to make regulations for, among other things, controlling the taking or use of specified species. However, the Environment Unit has not yet been allocated staff and budgets to allow the Act to be fully implemented. Regulations under the Act have yet to developed.

Additional measures for protection of threatened species are provided by the Forestry Act (1998) and

the Fisheries Regulations (1987). Proposed amendments to the Fisheries Regulations will fully protect *Turbo marmoratus* for a period of 15 years, fully protect Leather Back Turtles and designate Vanuatu's Exclusive Economic Zone as a whale sanctuary. The Forestry Act (2001) provides for designation of protected forests to protect biodiversity of national or international significance.

35. ■ On Article 8(l), does your country regulate or manage processes and categories of activities identified under Article 7 as having significant adverse effects on biological diversity?

a) No	
b)	
c)	X
d)	

Further comments on the regulation or management of the processes and categories of activities identified by Article 7 as having significant adverse effects on biodiversity.

Three activities that have high potential to impact on Vanuatu's biodiversity are harvesting of timber resources, harvesting of coastal marine resources and conversion of forests to agriculture. Vanuatu has sectoral legislation that manages the first two of these: the Forestry Act (2001), the Code of Logging Practice (1998), the Fisheries Act (1987) and associated Fisheries Regulations (1987). There are no regulations in place that manage or contain biological impacts associated with conversion of forests to agriculture.

Three localised activities that have potential to exert significant impact on biodiversity at island or local level are water harvesting for irrigation purposes, and hunting of some bird and Pteropus species, and economic development activities. These activities are regulated under the Water Resources Act (2003), the Environment Management and Conservation Act (2003) and the Wild Birds Protection Act (1961).

Box XXXI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation

Article 8 "In situ conservation" covers a very wide range of issues.

Articles 8(f) relates to restoration of degraded ecosystems and recovery of threatened species. A small number of targeted initiatives address national priorities relating to this article. Soil stabilisation and revegetation works have been undertaken in an attempt to arrest soil erosion on Aneityum Island. The Fisheries Department is replenishing *Trochus niloticus* stocks and strengthening regulations on the commercial use of *Turbo marmoratus* including a proposed 15 year ban on commercial harvesting from 2006. The Forestry Department is promoting replenishment plantings of the heavily harvested *Endospermum medullosum*. However, national resources are inadequate to undertake more specific or comprehensive work to restore biodiversity loss.

Article 8(g) relates to the control and use of living modified organisms. Vanuatu has benefited from GEF Enabling Activity funding and after a period of information gathering, consultation and discussion has drafted a National Biosafety Framework. The policy has yet to go before the Council of Ministers for endorsement.

Article 8(i) relates to measures to foster sustainable use of biological resources and compatibility between present uses and conservation of biodiversity at all levels. Sustainable use of forests, coastal

marine resources and agricultural ecosystems is a priority of Vanuatu's National Priorities and Action Agenda (undated), the focus of the National Biodiversity Strategy and Action Plan (1999), the National Forest Policy (2000) and the Fisheries Act (1987). Work to date has focused on commercial biological resources that are at greatest risk from over harvesting. In some cases initial resource management measures fell short of expectations or failed to adequately respond to emerging threats. A major challenge is to integrate the concept of sustainable resource use into the more general resource management practices of rural and urban people. The NCSA Enabling Activity includes an assessment of people's knowledge, attitudes and practices and will inform agencies on information, education and capacity building requirements. The Environment Unit commenced a project late in 2005 that will attempt to integrate sustainable resource use and conservation issues on three islands.

Article 8(k) relates to regulatory provisions for the protection of threatened species and populations. The Environment Management and Conservation Act (2003) made legal provision for the Minister responsible for Environment to regulate to control the taking or use of specified species. However, there has been limited support from government for implementation of this Act, with the Environment Unit neither upgraded to departmental level nor allocated staff and budgets to allow the Act to be fully implemented. Sectoral measures also exist. The Fisheries Department has proposed a 15 year ban on *Turbo marmoratus* to reduce the decline in stocks throughout Vanuatu waters. The Forestry Department has set annual harvest limits for species such as *Santalum austrocaledonicum* that are perceived at risk of over harvesting.

Article 8 (l) refers to measures to regulate or manage processes and activities that have adverse effects on biological diversity. The Environment Management and Conservation Act (2003) regulates a range of activities that may adversely affect biodiversity through:

- a) provision for Environment Impact Assessment of developments, works and programmes;
- b) provision for regulations to establish standards, guidelines or codes of environmental practice;
- c) provision for regulations on the importation and transportation of hazardous substances;
- d) provision for regulations on waste management and air and water pollution.
- e) controls on the import, export and movement of organisms.

However, there has been weak support from government on implementation of this Act with the Environment Unit not yet upgraded to departmental level nor allocated staff and budgets to allow the Act to be fully implemented. The Code of Logging Practice (1998) and the Forestry Act (2001) manages timber harvesting activities that might otherwise have adverse effects on biodiversity. The Fisheries Act (1987) and Regulations under the act provide for licensing of fishing activities and controls on the use of fishing technologies that might adversely affect marine diversity.

Article 8 (m) relates to measures for financing in situ conservation initiatives. Financing initiatives were recommended within the National Biodiversity Strategy and Action Plan. However, government financial policy has not enabled the recommendations to be implemented. In 2005 government allocations to the Environment Unit, the main government body responsible for biodiversity conservation remained less than USD\$50,000 per year. Work to meet commitments under the UN Convention of Biodiversity remains highly reliant on external support and funding.

Programme of Work on Protected Areas (Article 8 (a) to (e))

36. Has your country established suitable time bound and measurable national-level protected areas targets and indicators? (decision VII/28)

a) No (please specify reasons)	X
b) No, but relevant work is under way	
c) Yes, some targets and indicators established (please provide details below)	
d) Yes, comprehensive targets and indicators established (please provide details below)	

Further comments on targets and indicators for protected areas.

Legal provision for a system of national-level protected areas is provided by the National Parks and Wildlife Act (1992). This Act has never been applied. The Environment Management and Conservation Act (2003) provides for registration of locally managed conservation areas that are of national importance. One Conservation Area has been registered. The Fisheries Act (1987) provides for declaration of marine protected areas. One area, a WWII historical site has been protected under the Act. The Forestry Act (2001) also provides for designation of significant forest and tree resources within conservation areas.

There are a number of significant barriers that prevent Vanuatu from usefully establishing targets for national-level protected areas. Vanuatu's system of inalienable traditional tenure of land, coastal marine areas and associated resources means that protected areas can only be established with the agreement of landowners. Such agreements are often temporal or fixed term. An initiative to lease land to establish the Erromango Kauri Protected Area, lapsed because of failure to secure the funds to meet lease payments. The Government lacks capacity and financial resources to provide direct compensation for use of land for conservation purposes or to actively manage a network of protected areas.

Informal Protected Areas are frequently established at local landholder level and are under landholder, community or custom management. A GEF funded project being implemented by the Environment Unit commenced late in 2005 and will, among other things, help identify the extent to which these informal and often temporal protected areas help meet national biodiversity goals.

37. Has your country taken action to establish or expand protected areas in any large or relatively unfragmented natural area or areas under high threat, including securing threatened species? (decision VII/28)

a) No	
b) No, but relevant programmes are under development	
c) Yes, limited actions taken (please provide details below)	X
d) Yes, significant actions taken (please provide details below)	

Further comments on actions taken to establish or expand protected areas.

Vanuatu has two formally protected areas, that protect representative environments. The government facilitated establishment of Vathe Conservation Area in lowland forests of Santo, and this site is registered under the Environment Management and Conservation Act (2003). Million Dollar Point and the wreck of the President Coolidge are designated under the Fisheries Act (1987).

The Government had initiated the Erromango Kauri Protected Area, but was unable to maintain lease payments and the lease was allowed to lapse.

Plans to expand the network of protected areas in Vanuatu include designation of Vanuatu's EEZ as a whale sanctuary; protection of the Tagabe River Catchment; and designation of a marine and terrestrial heritage area at Hat Island. Concepts have been developed for conservation of lowland rainforest areas on Santo and forests on Efate: but these require further work.

Vanuatu also has a large number of small (usually < 10 ha) locally managed marine and terrestrial protected areas. These are undocumented and informal, often of fixed term duration and manage locally valued resources and cultural sites rather than address international or national biodiversity conservation priorities.

38. Has your country taken any action to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas? (decision VII/28)

a) No	
b) Not applicable	
c) No, but relevant actions are being considered	X
d) Yes, limited actions taken (please provide details below)	
e) Yes, significant actions taken (please provide details below)	

Further comments on actions taken to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas.

39. Has your country identified and implemented practical steps for improving the integration of protected areas into broader land and seascapes, including policy, planning and other measures? (decision VII/28)

a) No	X
b) No, but some programmes are under development	
c) Yes, some steps identified and implemented (please provide details below)	
d) Yes, many steps identified and implemented (please provide details below)	

Further comments on practical steps for improving integration of protected areas into broader land and seascapes, including policy, planning and other measures.

40. Is your country applying environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas? (decision VII/28)

a) No	
b) No, but relevant EIA guidelines are under development	
c) Yes, EIA guidelines are applied to some projects or plans (please provide details below)	
d) Yes, EIA guidelines are applied to all relevant projects or plans (please provide details below)	X

Further comments on application of environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas.

Environmental Impact Assessment provisions of the Environment Management and Conservation Act (2003) are mandatory for all projects, proposals or development activities that are likely to cause significant environmental, social or custom impact, including activities that affect protected or proposed protected areas.

41. Has your country identified legislative and institutional gaps and barriers that impede effective establishment and management of protected areas? (decision VII/28)

a) No	
b) No, but relevant work is under way	
c) Yes, some gaps and barriers identified (please provide details below))	X
d) Yes, many gaps and barriers identified (please provide details below)	

Further comments on identification of legislative and institutional gaps and barriers that impede effective establishment and management of protected areas.

The gaps and barriers that impede Vanuatu's effective declaration and management of a more extensive national network of protected areas are relatively well understood. They include:

- Vanuatu's Constitutional provision for inalienable traditional tenure of land and resources. Protected areas can only be designated with the agreement of landholders.
- The government faces financial constraints and gives priority to funding social services such as health and education. Extremely limited funds are allocated for management of protected areas, including both providing for staff and biodiversity management activities.
- Community initiated conservation activities are often based on the "tabu" concept which effectively prohibits use of designated resources for a fixed term. They usually do not incorporate biodiversity management measures (control of pests and invasive species; vegetation management; soil management etc.) that would be necessary if larger areas were reserved permanently for biodiversity conservation purposes.
- Disputes between claimants to traditional rights, or between landholders and other resource users, have adversely affected a number of protected areas initiated at local level. Disputes over land and associated resources are a major barrier to designation of national level protected areas.
- Communities establish protected areas for a range of custom, resource management, economic and political reasons. The areas are usually small and temporal in nature. A major shift in attitude and expectation is required if protected areas are to address national and global priorities in addition to local priorities.
- On small islands with very limited resource bases, communities may not have economic alternatives that enable them to protect large areas for biodiversity conservation purposes. The areas may be needed for gardening, fishing, water supply or other use and so conservation concepts based on sustainable use are more applicable.

Given these constraints Vanuatu agencies are interested to explore alternative models that include a mosaic of smaller, often temporal protected areas supplemented by longer term initiatives where feasible.

42. Has your country undertaken national protected-area capacity needs assessments and established capacity building programmes? (decision VII/28)

a) No	
b) No, but assessments are under way	
c) Yes, a basic assessment undertaken and some programmes established (please provide details below)	X
d) Yes, a thorough assessment undertaken and comprehensive programmes established (please provide details below)	

Further comments on protected-area capacity needs assessment and establishment of capacity building programmes.

The Vanuatu Environment Unit has conducted a participatory assessment of the capacity of landholders, communities and their partners in government and non-government organisations to introduce and manage conservation activities including protected areas (Tapisuwe et al, 2002). Capacity weaknesses identified will be addressed within a four year GEF funded MSP project that started in late 2005: "Facilitating and strengthening local resource management initiatives of traditional landholders & their communities to achieve biodiversity conservation objectives."

Work by the Foundation of the Peoples of the South Pacific Vanuatu (FSPV), several Peace Corp Cooperants and the Wan Smol Bag Theatre Vanua Tai Resource Monitor Programme are also seeking to build the capacity of communities to manage locally established terrestrial and marine protected areas.

43. Is your country implementing country-level sustainable financing plans that support national systems of protected areas? (decision VII/28)

a) No	X
b) No, but relevant plan is under development	
c) Yes, relevant plan is in place (please provide details below)	
d) Yes, relevant plan is being implemented (please provide details below)	

Further comments on implementation of country-level sustainable financing plans that support national systems of protected areas.

44. Is your country implementing appropriate methods, criteria and indicators for evaluating the effectiveness of protected areas management and governance? (decision VII/28)

a) No	X
b) No, but relevant methods, standards, criteria and indicators are under development	
c) Yes, some national methods, standards, criteria and indicators developed and in use (please provide details below)	
d) Yes, some national methods, standards, criteria and indicators developed and in use and some international methods, standards, criteria and indicators in use (please provide details below)	

Further comments on methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance.

Efforts to document the effectiveness of protected areas management and governance have occurred e.g. Whyte et al 1998; Tapisuwe et al 2002. However, capacity constraints have meant that work has not progressed to agreement on standard indicators and criteria for effectiveness of protected areas management and governance.

Box XLV

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Articles 8(a) to (e) address establishment of a system of protected areas and associated initiatives to protect ecosystems, habitats and populations. Vanuatu has made limited progress in this area. Due to Vanuatu's system of indigenous land ownership conservation areas tend to locally established and managed and often informal, small, and temporal. Land disputes and lack of capacity at every level constrain efforts to establish a national level network of protected areas.

Progress towards implementation of these decisions is limited but nationally significant. Plans to expand the network of protected areas in Vanuatu include designation of Vanuatu's EEZ as a whale sanctuary; protection of the Tagabe River Catchment; and designation of a marine and terrestrial heritage area around Hat Island.

These national level initiatives are complemented by work to build the capacity of local communities to manage locally designated conservation activities. Monitoring activities within a project started by the Environment Unit in 2005 will help provide information on the adequacy and relevance of this temporal mosaic to national and global biodiversity conservation objectives.

Article 8(h) - Alien species

45. Has your country identified alien species introduced into its territory and established a system for tracking the introduction of alien species?

a) No	
b) established	
c)	X
d) place	

46. Has your country assessed the risks posed to ecosystems, habitats or species by the introduction of these alien species?

a) No	
b) below)	X
c)	

Further information on the assessment of the risks posed to ecosystems, habitats or species by the introduction of these alien species.

The Vanuatu Quarantine and Inspection Services (Vanuatu Quarantine and Inspection Services) and the Department of Agriculture and Rural Development (Department of Agriculture and Rural Development) conduct pre-import risk assessment of alien species under the Animal Importation Act (1988) and the Plant Protection Act (1997). Both Acts focus on risks to agriculture, animal and human health and do not specifically provide for assessment of risks to the environment. The Environment Management and Conservation Act (2003) requires environmental impact assessment prior to the introduction of alien species. For efficiency this requirement will normally be integrated

into the pre-import risk assessment.

Policy recommendations flowing from the National Biodiversity Strategy and Action Plan include recommendations to incorporate environmental risks into pre-import risk assessments. Recommended measures for assessment of risks to ecosystems, habitats and species during a pre-import risk assessment have been incorporated into a Draft Biosecurity Policy, but have yet to go before the Council of Ministers late in 2005.

In the interim the Vanuatu Quarantine and Inspection Services and Department of Agriculture and Rural Development consider environmental threats in their pre-import risk assessment procedures. Organisms imported without pre-import risk assessment have been eradicated.

47. ■ Has your country undertaken measures to prevent the introduction of, control or eradicate, those alien species which threaten ecosystems, habitats or species?

a) No	
b)	
c)	X
d) below)	

Further information on the measures to prevent the introduction of, control or eradicate those alien species that threaten ecosystems, habitats or species.

The Vanuatu Quarantine and Inspection Services (Vanuatu Quarantine and Inspection Services) and the Department of Agriculture and Rural Development (Department of Agriculture and Rural Development) conduct pre-import risk assessment of alien species under the Animal Importation Act (1988) and the Plant Protection Act (1997). Both Acts focus on risks to agriculture, animal and human health. However, a draft National Biosafety Framework significantly extends these provisions to include assessment of risks to the environment. The Environment Management and Conservation Act (2003) requires environmental impact assessment of introduction of alien species. For efficiency this requirement will normally be integrated into the pre-import risk assessment.

Vanuatu agencies have undertaken a number of measures to control invasive species that threaten ecosystems, habitats or species. These include:

- The importation of *Bracon sp* in 1988 to control *Agonoxena argaula*. No monitoring post introduction.
- Importation of *Euglandina rosea* in 1987 to control *Achatina fulica*. No monitoring post introduction but suspected of impacting on native snail fauna.
- *Macromeriella marginella* was introduced in 1984 to control Rose Beetle.
- *Teleonemia scrupulosa* and *Uroplata girandii* were introduced in 1984 to control *Lantana camara*. *Uroplata girandii* was observed to be effective in controlling Lantana.
- Contained field trials of *Calligrapha pantherinea* are underway with a view to controlling *Sida acenta*, *S. rhombiafalia* and *S. refusa*. Preliminary results are encouraging.
- Contained field trials of *Neochetina eichhorneae* are underway to control *Eichhornia crassipes*. Preliminary results are encouraging.
- Surveillance of aircraft and ship arrivals in Luganville from Banks Islands to control the spread of *Wasamania auropunctata*

Initiatives to prevent the introduction of, control or eradication of alien species are typically led by Vanuatu Quarantine and Inspection Services in collaboration with the Environment Unit, Department of Agriculture and Rural Development, Fisheries or Forestry Department and regional partners.

National Priority is to manage importation of living organisms so as to minimise risks, and where possible, to contain in-country populations. Eradication is generally beyond the resource capacity of Vanuatu agencies.

48. ■ In dealing with the issue of invasive species, has your country developed, or involved itself in, mechanisms for international cooperation, including the exchange of best practices? (decision V/8)

a) No	
b)	
c)	X
d)	

49. ■ Is your country using the ecosystem approach and precautionary and bio-geographical approaches as appropriate in its work on alien invasive species? (decision V/8)

a) No	X
b) Yes (please provide details below)	

Further comments on the use of the ecosystem approach and precautionary and bio-geographical approaches in work on alien invasive species.

Vanuatu actively applies the precautionary principal in its work on invasive species. The precautionary principle is explicitly recognised within the Draft National Biosafety Framework.

50. Has your country identified national needs and priorities for the implementation of the Guiding Principles? (decision VI/23)

a) No	X
b)	
c) below a list of needs and priorities identified)	

Further comments on the identification of national needs and priorities for the implementation of the Guiding Principles.

Capacity building priorities are included in the Draft Biosafety Framework, but these address national priorities rather than the global priorities listed in the Guiding Principles. Consistency with the Guiding Principles annexed to decision VI/23 is primarily in application of the precautionary approach, border control and quarantine measures.

51. Has your country created mechanisms to coordinate national programmes for applying the Guiding Principles? (decision VI/23)

a) No	
b) No, but mechanisms are under development	X
c) Yes, mechanisms are in place (please provide details below)	

Further comments on the mechanisms created to coordinate national programmes for implementing the Guiding Principles.

Vanuatu's Draft National Biosafety Policy provides for Vanuatu Quarantine and Inspection Services to coordinate national activities to prevent, manage and contain invasive alien species in collaboration with the Environment Unit and other relevant agencies. The policy and regulatory recommendations of the Draft Policy are consistent with the Guiding Principles annexed to decision VI/23. The Draft

Policy applies the precautionary principle and addresses issues such as border control and quarantine measures, education and awareness, containment or other restrictions on imported organisms, in-country and regional collaboration for information exchange.

52. Has your country reviewed relevant policies, legislation and institutions in the light of the Guiding Principles, and adjusted or developed policies, legislation and institutions? (decision VI/23)

a) No	
b) No, but review under way	
c) Yes, review completed and adjustment proposed (please provide details below)	X
d) Yes, adjustment and development ongoing	
e) Yes, some adjustments and development completed (please provide details below)	

in light of the Guiding Principles.

A Biosafety Enabling Project reviewed Vanuatu's legislation relating to biosafety issues. The Environment Unit has also reviewed Vanuatu's legislation relating to introduction of organisms. The results of both reviews have been incorporated into the Draft National Biosafety Policy. The Draft Biosafety Policy provides recommendations for legislative amendment relating to consideration of environmental invasiveness and application of the precautionary principle, and includes recommended measures for capacity building, cooperation and awareness raising.

53. Is your country enhancing cooperation between various sectors in order to improve prevention, early detection, eradication and/or control of invasive alien species? (decision VI/23)

a) No	
b) No, but potential coordination mechanisms are under consideration	X
c) Yes, mechanisms are in place (please provide details below)	

Further comments on cooperation between various sectors.

Over the past two years there has been significant improvement in cooperation between departments with respect to import of alien species and prevention of the introduction of potentially invasive alien species. In the past Departments tended to follow *ad hoc* sectoral arrangements with respect to permitting imports of living organisms. Following initiatives to strengthen and build the capacity of Vanuatu Quarantine and Inspection Services there is now acceptance of the Department's legal and coordinating role in conducting pre-import risk assessment and permitting inward movements of living organisms. This role is explicitly stated in Vanuatu's Draft Biosafety Policy.

Vanuatu Quarantine and Inspection Services is currently working with other government departments and non government organisations, as well as other countries in the region to improve prevention, early detection, eradication an/or control of invasive species that are of economic importance.

Under the Environment Management and Conservation Act (2003) introduction of alien species is subject to environmental impact assessment including assessment of risks to biodiversity and ecosystem functioning. This requirement will normally be incorporated into the pre-entry risk assessment coordinated by the Vanuatu Quarantine and Inspection Services.

54. Is your country collaborating with trading partners and neighboring countries to address threats of invasive alien species to biodiversity in ecosystems that cross international boundaries? (decision VI/23)

a) No	X
b) Yes, relevant collaborative programmes are under development	
c) Yes, relevant programmes are in place (please specify below the measures taken for this purpose)	

Further comments on collaboration with trading partners and neighboring countries.

Vanuatu Quarantine and Inspections Services participates in regional activities coordinated by the Secretariat of the Pacific Community to foster consistent and effective measures to manage the transboundary movements of living organisms. Both Vanuatu Quarantine and Inspection Services and the Environment Unit also liaise with the regional Invasive Species Network and anticipate Vanuatu's participation in a region wide pilot project to address priority invasive species threats.

Despite Vanuatu sharing marine ecosystems are with other nations little work has been done to date on marine invasive species. The only control measures in place are restrictions on the discharge of ballast and waste water from ships.

55. Is your country developing capacity to use risk assessment to address threats of invasive alien species to biodiversity and incorporate such methodologies in environmental impact assessment (EIA) and strategic environmental assessment (SEA)? (decision VI/23)

a) No	
b) No, but programmes for this purpose are under development	
c) Yes, some activities for developing capacity in this field are being undertaken (please provide details below)	X
d) Yes, comprehensive activities are being undertaken (please provide details below)	

Further information on capacity development to address threats of invasive alien species.

Over the past five years Vanuatu Quarantine and Inspection Services (VQIS) has benefited from bilateral and multilateral capacity building support. As a consequence there has been significant improvement in Vanuatu's capacity to conduct pre-entry risk assessment including assessment of threats posed by alien species to biodiversity. In addition electronic communication (emails and internet) and international professional networks enable VQIS staff to more quickly and effectively access information held in other countries.

The Secretariat of the Pacific Community (SPC) is the main intergovernmental organisation assisting the Vanuatu Quarantine and Inspection Services and sectoral departments to conduct pre-entry risk assessments and to assist with monitoring and control of alien species of economic importance.

In addition, given growing awareness of the threats of invasive alien species, sectoral departments are developing their own protocols consistent with the national framework coordinated by Vanuatu Quarantine and Inspection Services. The Fisheries Department has requested assistance from SPC to develop a risk assessment protocol, and the Forestry Department no longer introduces alien species, giving precedence to the use of local forest species.

56. Has your country developed financial measures and other policies and tools to promote activities to reduce the threats of invasive species? (decision VI/23)

a) No	
b) No, but relevant measures and policies are under development	
c) Yes, some measures, policies and tools are in place (please provide details below)	X
d) Yes, comprehensive measures and tools are in place (please provide details below)	

Further comments on the development of financial measures and other policies and tools for the promotion of activities to reduce the threats of invasive species.

Vanuatu has limited financial capacity to address the costs of controlling or eradicating invasive species. National resources are primarily devoted to prevention through pre-entry risk assessment and surveillance at entry ports. Limited in-country resources are directed to monitoring pests of particular importance to the agriculture sector (e.g. Fruit Flies) and surveillance of *Wasamania auropunctata*.

Regional assistance through the Secretariat of the Pacific Community has helped Vanuatu to introduce and trial biological control agents for *Sida spp.* (Broomstick Weed) and *Eichhornia crassipes* (Water Hyacinth).

Vanuatu Quarantine and Inspection Services' work plans include promotion of activities that reduce the threats of invasive alien species of agricultural importance. Awareness and advisory information is given in the Banks Group of Islands with respect to *Wasamania auropunctata* and national wide with respect to fruit flies.

The growing focus on the commercial prospects of native species also helps to reduce the threats of alien species becoming invasive. The Forestry Department now only promotes indigenous species in planting, woodlots and regeneration activities. The Fisheries Department is trialing the aquaculture of *Macrobrachium lar* (Freshwater prawn) as an alternative to introduced prawn species and the Department of Agriculture in association with the Vanuatu Chamber of Commerce is promoting commercial cultivation of yams, taro and kumala, and the cultivation of kava. To progress this work greater financial resources need to be allocated to progress this work and there is a need for trained technicians in agronomy, ecology and marketing.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Article 8(h) relates to management and control of alien species. This is a national priority that received considerable emphasis within Vanuatu's National Biodiversity Strategy and Action Plan. Vanuatu has established regulatory mechanisms to manage transboundary movements of living organisms, and the Draft Biosafety Framework recognizes that these mechanisms need to be strengthened to address risks to biodiversity, to give a basis for application of the precautionary principle and ensure fully informed consent.

Regional assistance is facilitating introduction of biological control agents for *Eichhornia crassipes* and *Sida spp.*

Populations of *Wasamania auropunctata* are a priority concern because of their threat to natural ecosystems, agricultural activity and human health. Containment measures are in place, but there are concerns that further spread of this species is inevitable. Vanuatu lacks capacity and financial resources

to consider control or eradication and to address inter-island movements of invasive species once established in country.

Article 8(j) - Traditional knowledge and related provisions

GURTS

57. Has your country created and developed capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities, and other relevant stakeholders to effectively participate in decision-making processes related to genetic use restriction technologies?

a) No	X
b) No, but some programmes are under development	
c) Yes, some programmes are in place (please provide details below)	
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities and other relevant stakeholders to effectively participate in decision-making processes related to GURTs.

Preliminary awareness of genetic issues has taken place under the auspices of planning to address Vanuatu's responsibilities under the Cartagena Protocol. However, many of the concepts involved are scientific and complex. The Draft Biosafety Framework calls for the Secondary School curriculum to address these issues.

Status and Trends

58. Has your country supported indigenous and local communities in undertaking field studies to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities? (decision VII/16)

a) No	
b) No, but support to relevant studies is being considered	
c) Yes (please provide information on the studies undertaken)	X

Further information on the studies undertaken to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities, and priority actions identified.

The Department of Finance and Economic Management, the Ministry of Quarantine, Agriculture, Forests and Fisheries and the French International Research Centre for Agriculture and Development (CIRAD) are conducting a 5 year study which, among other things, is investigating the socio-economic behavior of farmers and consumers with respect to agricultural genetic resources represented in ten different species of root crops. Understanding these behaviors will assist researchers to develop strategies to conserve traditional knowledge, innovations and practices.

A study conducted by the University of the South Pacific has demonstrated a decline in the traditional knowledge of the use of forest and plants by indigenous people in the Pacific including Vanuatu. This trend was evident when names of trees and uses were asked in rural workshops conducted by Department of Forestry, and with work conducted for the Crab Bay conservation project. A small number of older people may retain significant knowledge, however the majority of the youth have limited knowledge and capacity to use traditional practices.

Akwé:Kon Guidelines

59. Has your country initiated a legal and institutional review of matters related to cultural, environmental and social impact assessment, with a view to incorporating the Akwé:Kon Guidelines into national legislation, policies, and procedures?

a) No	X
b) No, but review is under way	
c) Yes, a review undertaken (please provide details on the review)	

Further information on the review.

Custom law is legally recognised in Vanuatu's constitution and Vanuatu has in place strict guidelines and policies for the protection of cultural sites and traditionally significant land and marine areas. These are enforced through the Vanuatu Cultural Centre's programme to register Historical and Cultural Sites, and which aims to ensure no registered sites are threatened by development. The Environment Impact Assessment provisions of the Environment Management and Conservation Act (2003) include specific reference to assessment of impacts on custom resources.

However, Vanuatu has yet to review these provisions to ensure they fully incorporate the Akwé:Kon Guidelines.

60. Has your country used the Akwé:Kon Guidelines in any project proposed to take place on sacred sites and/or land and waters traditionally occupied by indigenous and local communities? (decision VII/16)

a) No	
b) No, but a review of the Akwé: Kon guidelines is under way	
c) Yes, to some extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	

Further information on the projects where the Akwé:Kon Guidelines are applied.

Custom law is legally recognised in Vanuatu's constitution and Vanuatu has in place strict guidelines and policies for the protection of cultural sites and traditionally significant land and marine areas. These are enforced through the Vanuatu Cultural Centre's programme to register Historical and Cultural Sites, and which aims to ensure no registered sites are threatened by development.

The Environment Impact Assessment provisions of the Environment Management and Conservation Act (2003) include provision for assessment of any impacts on custom resources, enabling cultural, environmental and social impact assessments as a single process. Vanuatu's EIA process is similar in scope and intent to that set out in the Akwé:Kon Guidelines.

Capacity Building and Participation of Indigenous and Local Communities

61. Has your country undertaken any measures to enhance and strengthen the capacity of indigenous and local communities to be effectively involved in decision-making related to the use of their traditional knowledge, innovations and practices relevant to the conservation and sustainable use of biodiversity? (decision V/16)

a) No	
b) No, but some programmes being developed	
c) Yes, some measures taken (please provide details below)	X
d) Yes, comprehensive measures taken (please provide details below)	

Further information on the measures to enhance and strengthen the capacity of indigenous and local communities.

The Sustainable Agriculture Program, Food Security Program and Farming Systems, programmes of the Department of Agriculture and Rural Development share a common purpose of conserving and reviving traditional farming systems and integrating traditional practices of cultivation, control of pests and diseases and related activities into improved farming systems. This work with local communities helps to reinforce and strengthen local capacity to recognise and preserve traditional knowledge and to use available environmental resources in a sustainable manner.

The Fisheries Department actively encourages the use of traditional fisheries knowledge and practices within community level coastal fisheries management. Vanuatu's Cultural Centre in collaboration with the Fisheries Department has documented traditional knowledge relating to the use of coastal marine resources throughout Vanuatu, specifically addressing the different bodies of traditional knowledge held by both men and women. This has been disseminated through a range of print and video publications and is now maintained within the collections of the Cultural Centre.

Language capacity is often essential for the on-going transmission and application of traditional knowledge. The Cultural Centre has been active with the Department of Education to trial introduction of indigenous languages and traditional knowledge into the primary school curriculum.

The Forestry Act (2001) and the Code of Logging Practice (1998) require Vanuatu's Forestry Department to ensure local landholders agree to timber harvesting, and have indicated sites and trees that have local use or cultural significance and should be excluded from harvesting operations.

62. Has your country developed appropriate mechanisms, guidelines, legislation or other initiatives to foster and promote the effective participation of indigenous and local communities in decision making, policy planning and development and implementation of the conservation and sustainable use of biodiversity at international, regional, subregional, national and local levels? (decision V/16)

a) No	
b) No, but relevant mechanisms, guidelines and legislation are under development	
c) Yes, some mechanisms, guidelines and legislation are in place (please provide details below)	X

Further information on the mechanisms, guidelines and legislation developed.

Vanuatu's Constitution established inalienable traditional title to all land and associated resources including coastal marine areas. As a consequence initiatives that address land use, conservation and sustainable resource use can only proceed with the agreement of the traditional landholders.

Most conservation areas in Vanuatu are locally initiated and managed with minimal involvement of external agencies. The Environment Unit has assessed the capacity of local communities and landholders to establish and manage conservation activities. In late 2005 the Environment Unit commenced a four year programme to build community conservation capacity on three islands.

Vanuatu's Forestry Department facilitates the process through which local landholders and forestry operators agree to timber harvesting. The Department assists local landholders reserve from harvesting trees that have local use or custom values. Forestry Department projects on Santo have built local capacity to both plan and monitor sustainable timber harvesting and to regenerate forest after timber harvesting.

The Foundation of the Peoples of the South Pacific (Vanuatu), Wan Smol Bag Theatre and the Fisheries Department are active in building local community capacity to manage in-shore marine resources and locally managed marine protected areas.

63. Has your country developed mechanisms for promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and effective participation of women in all elements of the programme of work? (decision V/16, annex)

a) No	
b) No, but relevant mechanisms are being developed	
c) Yes, mechanisms are in place (please provide details below)	

indigenous and local communities in all elements of the programme of work.

Traditional landownership systems, social rules and gender relationships vary throughout the Vanuatu archipelago. In some islands women share ownership rights of land and associated resources with their extended family or clan and may attend family or clan meetings. In other islands women are only allowed to use land that belongs to their husband or father and are excluded from village meetings.

While there is greater acceptance of gender equity issues in Vanuatu than a decade ago, women's engagement in resource management and biodiversity conservation at village level is in general subsidiary to that of men. Barriers to the full involvement of women in biodiversity initiatives are complex. They include prevailing culture, low levels of literacy, and women's burden of work with respect to domestic care, subsistence cultivation and income generation. Women with young children have difficulty leaving family duties to participate in meetings in distant communities. Young women usually move to their husband's village on marriage and it may be many years before they acquire a good understanding of their new environment and knowledge about that environment.

Women's engagement in resource management and biodiversity conservation at village level is also affected by the extension and information services they receive. Professional extension services provided by the Departments of Forestry, Fisheries and Agriculture have historically targeted men. This reflects an under-representation of women among the professional and extension staff of relevant government and NGO agencies and the gender division manifest in traditional society that encourages separation of roles and responsibilities.

However, it is recognized that NGO and government organisations currently make considerable effort to ensure women participate in local conservation and sustainable resource use activities.

Support to implementation

64. Has your country established national, subregional and/or regional indigenous and local community biodiversity advisory committees?

a) No	
b) No, but relevant work is under way	
c) Yes	X
Vanuatu has a National Biodiversity Advisory Committee, all members of which represent relevant national bodies, and all of whom are indigenous. A wide range of local committees support specific conservation projects, and are predominantly if not wholly composed of indigenous ni-Vanuatu.	

65. Has your country assisted indigenous and local community organizations to hold regional meetings to discuss the outcomes of the decisions of the Conference of the Parties and to prepare for meetings under the Convention?

a) No	X
b) Yes (please provide details about the outcome of meetings)	

Further information on the outcome of regional meetings.

66. Has your country supported, financially and otherwise, indigenous and local communities in formulating their own community development and biodiversity conservation plans that will enable such communities to adopt a culturally appropriate strategic, integrated and phased approach to their development needs in line with community goals and objectives?

a) No	
b) Yes, to some extent (please provide details below)	
c) Yes, to a significant extent (please provide details below)	X

Further information on the support provided.

As a result of Vanuatu's traditional land ownership laws local and indigenous communities are usually fully involved in local conservation and resource management decisions.

All natural resource sectoral agencies and a number of development NGOs are involved in capacity building activities and facilitation to support local formation of resource management and conservation plans. The Forestry Department has hosted demonstration projects at Butmas and the Shark Bay area that have strengthened local capacity to engage in sustainable forest management and regeneration work. The Fisheries Department actively encourages local and traditional management of coastal marine resources. The Conservation Unit of the Department of Forestry provides advice and training to enable communities to develop locally appropriate resource management and conservation plans. Wantok Environment Centre, Wan Smol Bag and the Foundation of the Peoples of the South Pacific (FSP) have all worked to support indigenous and local communities to formulate conservation and development plans.

Box XXXII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Ni-Vanuatu institutions and their staff place considerable importance on respecting indigenous land and resource ownership rights and working in accord with local custom. This national focus on traditional tenure of land and associated resources dominates resource management and conservation activities.

Vanuatu's National Biodiversity Strategy and Action Plan (1999) gives priority to initiatives that will put in place legal and administrative procedures to more fully protect traditional values, knowledge and innovations, and ensure access to benefit sharing and prior informed consent. Emphasis is also placed on building better links between indigenous knowledge systems and modern global knowledge systems, so that both forms of knowing are effectively used to manage environmental resources.

Article 9 - *Ex-situ* conservation

67. ■ On Article 9(a) and (b), has your country adopted measures for the *ex-situ* conservation of components of biological diversity native to your country and originating outside your country?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

biodiversity native to your country and originating outside your country.

The Vanuatu Agricultural Research and Training Centre hosts *ex situ* varietal collections of a number of agriculture crops including Taro(ca. 260 but being reduced), Manioc (26), Kumala (52), Yam(ca. 300), Kava (60), Breadfruit, Coconut (60), Coffee (ca. 100), Pepper (12) and Cocoa (85). There is also an *ex situ* collection of island cabbage on Efate, Santo and Malekula. Whilst the collections are for conservation of genetic diversity, they are also used for breeding and distribution to farmers. Samples from these collections are also held in France.

Carpoxylon macrospermum has been informally planted in Vila.

The regional Tarogen project has included Vanuatu varieties of taro in *ex situ* genetic collections in Fiji.

68. ■ On Article 9(c), has your country adopted measures for the reintroduction of threatened species into their natural habitats under appropriate conditions?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for the reintroduction of threatened species into their natural habitats under appropriate conditions.

The Fisheries Department has replenished stocks of *Trochus niloticus* in areas where over harvesting had depleted stocks beneath levels believed to be sustainable. There is also some interest in re-establishing *Tridacna gigas*, which is the only species believed to have become extinct in Vanuatu in recent decades.

Given concerns at the declining population of *Endospermum medullosum* the Forestry Department has encouraged enrichment plantings and woodlots.

Awareness of the vulnerable status of *Carpoxylon macrospermum* have been conducted on Tanna to encourage landholders to plant the species into locations where it's population has declined.

69. ■ On Article 9(d), has your country taken measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species?

a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species.

A decade ago measures were put in place to protect natural stands of *Carpoxyton macrospermum* in Tafea by requiring that seeds for export were from cultivated palm trees on other islands. However enforcement of this decision has lapsed and the source of origin of seeds for carving and cultivation is no longer recorded.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Ex situ collection of a number of agricultural root and tree crop varieties of economic importance at the Vanuatu Agricultural Research and Training Centre has helped maintain and prevent the varieties from being lost. However, it has proved expensive. Funds are not available to fully maintain collections. As a consequence greater emphasis is now placed on *in situ* conservation measures.

Article 10 - Sustainable use of components of biological diversity

70. ■ On Article 10(a), has your country integrated consideration of the conservation and sustainable use of biological resources into national decision-making?

a) No	
b) No, but steps are being taken	
c) Yes, in some relevant sectors (please provide details below)	
d) Yes, in most relevant sectors (please provide details below)	X

Further information on integrating consideration of conservation and sustainable use of biological resources into national decision-making.

Sustainable use is explicit within the priorities of Vanuatu's National Development Priorities and Action Agenda (undated) and addressed within the sectoral priorities of the natural resource sector - "maintain sustainability standards". Specific actions and projects towards this priority are identified within sectoral policies and work plans.

Sustainable use is embodied in the Mission statement and objectives of the National Biodiversity

Strategy and Action Plan (1999), which includes specific goals and actions to promote wise use of biodiversity for present and future benefit, and encourages actions to provide an enabling administrative and legal context for sustainable management of biodiversity. There has been good progress towards these goals.

However, while sustainable use has become inherent to the work of natural resource sectors, it has yet to be integrated into national decision making and planning at political and economic levels. There is no sustainable development strategy, and provisions for neither strategic environmental assessment nor natural resource accounting.

71. ■ On Article 10(b), has your country adopted measures relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

minimize adverse impacts on biological diversity.

The Environment Management and Conservation Act (2003) provides for mandatory environmental impact assessment of development activities that have potential to affect biodiversity or sites of cultural importance. This provision enables Vanuatu to act to minimise adverse impacts from the use of biological resources.

The goal of Vanuatu's National Forest Policy (2000) is the sustainable management of Vanuatu's forests to achieve greater social and economic benefits for current and future generations. This goal is addressed in all strategies and work plans of the Forestry Department, including the work of the National Herbarium to document biodiversity throughout the country; the work of the forest utilisation section; and the forestry extension officers throughout the country. The operational focus for realising sustainable forest management has been the Code of Logging Practice (1998) and licensing provisions of the Forestry Act (2001). Logging operations also adhere to the provisions of the Water Resources Act (2003) to protect and maintain water catchments and associated environmental processes. Enrichment planting and reforestation are actively encouraged to minimise negative impacts on forest systems following logging.

The guiding policy for the fisheries sector is Vanuatu's fisheries section of the Priority Action Agenda, which has a clear focus on management and commercialisation of coastal and reef fisheries. The Fisheries Act (1987) provides the legal basis for sustainable management of the country's inshore resources and ensuring products derived from these resources are used sustainably. The Act is implemented through the Fisheries Regulations which provide for closed seasons (*Birgus latro*); limited harvesting (*Chelonidae spp.*) size limits (*Birgus latro*, *Charonia tritonis*, *Trochus niloticus*, *Turbo marmoratus*, *Panulirus spp*, *Paribus caledonicus*); catch limits and quotas (*Birgus latro*); licensing of operators (aquarium coral and reef fisheries); and controls on potentially unsustainable harvesting technologies (e.g. dynamite fishing). The Fisheries Department replenishes *Trochus niloticus* stock where stocks have been depleted below a level believed sustainable.

The Department of Agriculture and the Farm Support Association promote strategies for sustainable farming. Work over the last decade has included research and trials of site stable agriculture (as distinct from the traditional shifting agriculture) to promote sustainable use of land resources. There has been some uptake of these strategies by subsistence farmers in areas where land resources are limited and soils at risk of depletion, and where erosion and soil depletion of sloping land has been a problem.

72. ■ On Article 10(c), has your country put in place measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements.

Vanuatu's Constitution provides for inalienable traditional title to land and associated resources including coastal marine areas. Sectoral laws and policies recognise traditional resource ownership, management and use, and work within the framework they provide.

Measures to encourage and support sustainable use of biodiversity by landholders take place within the work of all natural resource sectors. They include:

- Awareness, training and extension activities to build capacity for sustainable resource use at community level.
- Technical advice to communities and landholders on *in situ* conservation activities such as the Erromango Kauri Protected Area, Vatthe Conservation Area, Loru Protected Area, and locally managed marine & terrestrial protected areas.
- Incentives for communities to shift toward sustainable use regimes; for example communities are required to have a locally managed marine "tabu" area as a pre-requisite for participation in *Trochus niloticus* restocking programmes.
- Participation in local biodiversity assessment and survey work to build awareness of global and national perspectives toward local biodiversity.

73. ■ On Article 10(d), has your country put in place measures that help local populations develop and implement remedial action in degraded areas where biological diversity has been reduced?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

action in degraded areas where biodiversity has been reduced.

Vanuatu's Forestry and Fisheries agencies both have programmes that help local populations arrest depletion of biodiversity. Extension Officers from both departments provide awareness, training and technical advice to build capacity for sustainable resource use at community level. Vanuatu's Fisheries Department facilitates stock replenishment where commercial activities have selectively reduced the populations of key resources. The Department of Forestry encourages stock enhancement plantings of *Endospermum medullosum*.

In localities where soil productivity has declined or land is limited Vanuatu's Department of Agriculture and Rural Development provides advice to communities on site stable agricultural techniques including intercropping, agroforestry, use of leguminous plants, rotation and techniques suitable for sloping land .

Officers attached to the Environment Unit have worked with 11 coastal communities at Crab Bay, Malekula, to identify and implement strategies for management of *Cardiosoma hiritipes*. They are

also working with communities on Gaua, Santo and Tanna Islands to strengthen capacity for local management of environmental resources.

The Forestry Department and then a local development NGO encouraged planting programmes to arrest serious land erosion on Aneityum Island. The erosion remains unchecked in part because the local people do not recognise the seriousness of the problem and did not engage as owners of the initiative.

74. ■ Has your country identified indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity? (decision V/24)

a) No	X
b) No, but assessment of potential indicators and incentive measures is under way	
c) Yes, indicators and incentive measures identified (please describe below)	

Further comments on the identification of indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity.

Stock assessments of targeted species commonly inform resource management decisions. The agencies concerned lack financial and human capacity to conduct more sophisticated ecosystem monitoring programmes.

Only one specific incentive measure has been identified. Traditional landholders must have established a locally managed marine "tabu" area as a nursery site prior to participation in fisheries Trochus restocking programmes.

75. ■ Has your country implemented sustainable use practices, programmes and policies for the sustainable use of biological diversity, especially in pursuit of poverty alleviation? (decision V/24)

a) No	
b) No, but potential practices, programmes and policies are under review	
c) Yes, some policies and programmes are in place (please provide details below)	
d) Yes, comprehensive policies and programmes are in place (please provide details below)	X

Further information on sustainable use programmes and policies.

Sustainable use of natural resources is the only conservation precept explicitly within the National Priorities of Vanuatu's Priorities and Action Agenda (undated) and is espoused in the mission statement of the National Biodiversity Strategy and Action Plan and addressed within sectoral policies and work plans. The underlying assumption is that sustainable management of Vanuatu's environmental resources will achieve greatest social and economic benefits for current and future generations.

This policy goal is addressed in the strategies and work plans of the Departments of Forestry, and Fisheries. The Department Agriculture and Rural Development and the Farm Support Association promote sustainable farming strategies within programmes strengthening food security and food garden productivity.

76. ■ Has your country developed or explored mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity? (decision V/24)

a) No	
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please describe below)	

Further comments on the development of mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity.

Vanuatu's private sector is little developed and dominated by small home-based owner operated or micro businesses. Sustainable resource use mechanisms are mainly directed through local landholders, especially in areas of sustainable agriculture systems and forest management.

The involvement of larger enterprises is limited. The Forestry Department targets both small and large scale operators under the Code of Logging Practice (1998) which sets mandatory standards for timber harvesting operations, and the Department has provided private sector operators training in its application. The Fisheries Department consults with commercial fishers and processors on measures under the Fisheries Regulations. The water utility company UNELCO is involved in initiatives to protect the Tagabe River Catchment.

77. Has your country initiated a process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)

a) No	X
b) No, but the principles and guidelines are under review	
c) Yes, a process is being planned	
d) Yes, a process has been initiated (please provide detailed information)	

Further information on the process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.

78. Has your country taken any initiative or action to develop and transfer technologies and provide financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)

a) No	X
b) No, but relevant programmes are under development	
c) Yes, some technologies developed and transferred and limited financial resources provided (please provide details below)	
d) Yes, many technologies developed and transferred and significant financial resources provided (please provide details below)	

Further comments on the development and transfer of technologies and provision of financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.

Biodiversity and Tourism

79. ■ Has your country established mechanisms to assess, monitor and measure the impact of tourism on biodiversity?

a) No	X
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please specify below)	
d) Yes, existing mechanisms are under review	

Further comments on the establishment of mechanisms to assess, monitor and measure the impact of tourism on biodiversity.

80. ■ Has your country provided educational and training programmes to the tourism operators so as to increase their awareness of the impacts of tourism on biodiversity and upgrade the technical capacity at the local level to minimize the impacts? (decision V/25)

a) No	
b) No, but programmes are under development	X
c) Yes, programmes are in place (please describe below)	

Further comments on educational and training programmes provided to tourism operators.

Training to increase the capacity of local tourism operators to minimise the impacts of tourism on biodiversity has been a component of work to establish the Vathe Conservation Area (1995 – 2000), the FSPI “profitable environment protection” project activities on Ambrym (1994 – 1995), work by a local NGO “Beneficial Environment and Sustainable Tourism” (BEST) and activities by the Peace Corp. In general this work was once-off in the context of development activities and was neither expanded to reach the wider tourism industry nor continued once development initiatives or projects closed.

Several of the major hotels and resorts are affiliated to international chains that recognise the impacts on the environment is an important issue to their clients and employ in-house policies to minimise impacts on environment. New hotel and resort developments now undergo environmental impact assessment.

The Vanuatu Institute of Technical Education is currently developing a tourism training programme and it is anticipated new courses will include the impacts of tourism on the environment, and the importance to the tourism sector of maintaining Vanuatu’s biodiversity.

81. Does your country provide indigenous and local communities with capacity-building and financial resources to support their participation in tourism policy-making, development planning, product development and management? (decision VII/14)

a) No	
b) No, but relevant programmes are being considered	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments in the capacity-building and financial resources provided to indigenous and local communities to support their participation in tourism policy-making, development planning, product development and management.

The Vanuatu Island Bungalows Association represents small village based accommodation providers and provides a forum for hospitality training and capacity building for village based tourism interests. It also services as an umbrella group voicing local community considerations in tourism policy-making, planning and product development.

In separate initiatives the Vanuatu Chamber of Commerce and Industry and the Vanuatu Tourism Office provides capacity building services to operators of local tourism businesses.

The financial resources that support the work of the Small Bungalows Association and the Vanuatu Chamber of Commerce come from membership contributions and donor assistance. The Vanuatu Tourism Office is resourced from the national budget and donor agencies.

82. Has your country integrated the Guidelines on Biodiversity and Tourism Development in the development or review of national strategies and plans for tourism development, national biodiversity strategies and actions plans, and other related sectoral strategies? (decision VII/14)

a) No, but the guidelines are under review	X
b) No, but a plan is under consideration to integrate some principles of the guidelines into relevant strategies	
c) Yes, a few principles of the guidelines are integrated into some sectoral plans and National Biodiversity Strategy and Action Plans (please specify which principle and sector)	
d) Yes, many principles of the guidelines are integrated into some sectoral plans and National Biodiversity Strategy and Action Plans (please specify which principle and sector)	

Further information on the sectors where the principles of the Guidelines on Biodiversity and Tourism Development are integrated.

Box XXXIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu has given priority to sustainable use rather than protection of biodiversity because of Vanuatu's context of inalienable traditional land and resource ownership, small islands and subsistence livelihoods.

In-country resource management policies and initiatives attempt to promote sustainable uses of biological resources, and replenishment of biological resources that have been depleted. A range of specific sectoral targets exist, and are guided by regulatory provisions such as size limits, quotas, closed seasons and application of traditional taboo restrictions.

The concept of sustainable use of biological resources is also addressed through the local resource management initiatives of traditional landholders and users throughout the archipelago.

There has been good progress towards the national sustainable use priorities established in the National Biodiversity Strategy and Action Plan (1999), however concerns remain about unsustainable levels of forest clearing for agriculture, the impacts of land clearing practices on biological systems, and depletion of lowland rainforest habitats.

There is a need to broaden economic opportunities so that local communities have more sustainable livelihood strategies than just the continued conversion of forest to agriculture. There is also a role for clearing guidelines and agroforestry options that enable both farming and biodiversity to coexist.

Article 11 - Incentive measures

83. ■ Has your country established programmes to identify and adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity?

a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on the programmes to identify and adopt incentives for the conservation and sustainable use of biodiversity.

Over the past decade work has been undertaken to better understand the motives behind community based conservation and resource management decisions. Important incentives for local conservation and sustainable use of components of biodiversity include:

- Practice, maintenance and respect for custom sites and traditional practices
- Replenishing and enhancing stocks of used resources
- Eligibility to participate in sectoral programmes such as the Fisheries Department's *Trochus niloticus* reseedling programme
- Fostering opportunities for tourism operations and
- Anticipated material or commercial benefits.

While sectoral programmes of the Environment Unit, Forestry Department, Fisheries Department and several NGOs recognise and apply these incentives, there is limited capacity to expand upon this work.

84. ■ Has your country developed the mechanisms or approaches to ensure adequate incorporation of both market and non-market values of biological diversity into relevant plans, policies and programmes and other relevant areas? (decisions III/18 and IV/10)

a) No	X
b) No, but relevant mechanisms are under development	
c) Yes, mechanisms are in place (please provide details below)	
d) Yes, review of impact of mechanisms available (please provide details below)	

biodiversity into relevant plans, policies and programmes.

85. ■ Has your country developed training and capacity-building programmes to implement incentive measures and promote private-sector initiatives? (decision III/18)

a) No	X
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place	
d) Yes, many programmes are in place	

86. Does your country take into consideration the proposals for the design and implementation of incentive measures as contained in Annex I to decision VI/15 when designing and implementing incentive measures for the conservation and sustainable use of biodiversity? (decision VI/15)

a) No	X
b) Yes (please provide details below)	

Further information on the proposals considered when designing and implementing the incentive measures for the conservation and sustainable use of biodiversity.

87. Has your country made any progress in removing or mitigating policies or practices that generate perverse incentives for the conservation and sustainable use of biological diversity? (decision VII/18)

a) No	X
b) No, but identification of such policies and practices is under way	
c) Yes, relevant policies and practices identified but not entirely removed or mitigated (please provide details below)	
d) Yes, relevant policies and practices identified and removed or mitigated (please provide details below)	

Further information on perverse incentives identified and/or removed or mitigated.

Box XXXIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Most of Vanuatu's biodiversity conservation decisions are taken by local landholders for diverse reasons relating to practice and maintenance of custom; assertion of traditional rights to land, resources and coastal waters; the need to build resource stocks; or eligibility to participate in sectoral programmes. These incentives are usually sufficient motivation for local resource management initiatives to be in place.

However there is a need for a transition so that there is also local motivation to address national and global biodiversity priorities as well as local resource management needs. It has been recognised that where conservation activities go beyond local priorities to address primarily national or international interests appropriate incentives or material benefits may need to be considered. This was initially addressed with the lease of land for the Erromango Kauri Reserve, however budgets could not absorb recurrent lease payments and the lease has lapsed. There have also been efforts to raise community interest in eco-tourism as a benefit that can follow conservation. However, a number of small bungalow and associated eco-tourism ventures have been unsuccessful, in part because of inadequate marketing and business management, in part because of poor location and inadequate infrastructure. Agencies are becoming wary of entering into agreements that offer material incentives that cannot be delivered in the long term.

Further work is required to develop locally appropriate and cost effective strategies that will motivate local landholders and communities to enter into conservation and sustainable use activities that go beyond their own resource management priorities. There has been some initial success with Wan Smol Bag's social marketing of marine turtle conservation and creation of a network of turtle monitors. The Environment Unit commenced in late 2005 a four year project to work with landholders on the islands of Gaua, Santo and Tanna to strengthen local capacity to help realise national and international biodiversity conservation goals.

Article 12 - Research and training

88. ■ On Article 12(a), has your country established programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components?

a) No	
b) No, but programmes are under development	
c) Yes, programmes are in place (please provide details below)	X

Further information on the programmes for scientific and technical education and training in the measures for identification, conservation and sustainable use of biodiversity.

Vanuatu has limited in-country facilities to provide formal scientific and biological education beyond pre-University level. Rather people interested in a scientific education seek scholarships to Universities and Technical Institutes in neighboring countries. Several undergraduate and post graduate students each year receive scholarships to study in areas related to environment management and conservation.

The Government has facilitated participation of individuals in short courses and placements to gain skills in identification, conservation and sustainable use of biological diversity. These have included

- Regional training initiatives facilitated by inter-government regional organisations, including SPREP and the Secretariat of the Pacific Community.
- On the job training provided by a range of project activities, short term technical assistance and other measures.
- Informal capacity building through collaborative activities with visiting researchers and experts.

In addition Vanuatu is conducting a National Capacity Self Assessment (NCSA) which will inform and guide on-going capacity building activities.

89. ■ On Article 12(b), does your country promote and encourage research which contributes to the conservation and sustainable use of biological diversity?

a) No	
b) Yes (please provide details below)	X

Further information on the research which contributes to the conservation and sustainable use of biodiversity.

Vanuatu has facilitated research by regional intergovernmental agencies, multilateral agencies and independent researchers. This work has increased national capacity to sustainably manage the use of biological resources.

Research work has included a small number of intense applied research programmes such as the Australian Centre for Agricultural Research funded studies into *Trochus niloticus* and *Birgus latro* fisheries and stock management; the Australian Government funded forest inventory and sustainable utilization projects and SPRIG programmes; and FAO and CIRAD funded studies of site stable agricultural systems.

The Environment Unit actively facilitates short term biological studies by visiting academics that have added to the knowledge of the distribution, variation and population ecology of species present in Vanuatu. Legislation to develop a Scientific Research Council is being drafted to more fully assume this role and responsibility.

90. ■ On Article 12(c), does your country promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources?

a) No

b) Yes (please provide details below)

X

Further information on the use of scientific advances in biodiversity research in developing methods for conservation and sustainable use of biodiversity.

Vanuatu has limited in-country scientific and technical facilities to advance biodiversity research, and lacks financial capacity to fund such research. Consequently, research usually takes place in collaboration with regional and international institutions.

Research conducted in the context of development projects tends to be applied in nature. Research based projects have informed Vanuatu agencies on management of *Trochus niloticus*, *Birgus latro*, and *Santalum austrocaledonicum* and informed the development of Vanuatu's Code of Logging Practice.

Ecological and taxonomic studies are more commonly conducted by visiting researchers from independent academic institutions. Information generated helps Vanuatu agencies to develop the information base that is needed to allow more sustainable management of natural resources.

Please elaborate below on the implementation of this article specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Research work conducted in Vanuatu has helped build Vanuatu's capacity to address its commitments as a signatory to the Convention, to recognise biodiversity conservation priorities and to manage used resources sustainably.

National research priorities identified in the National Biodiversity Strategy and Action Plan (1999) included acquiring baseline information about Vanuatu's biodiversity, establishing biodiversity monitoring programmes, forming a Scientific Research Council and building in-country scientific facilities and taxonomic collections. Limited progress has been made toward these priorities. National budgets have limited capacity to extend to scientific research, and donor assistance has been directed toward applied research with greater potential for immediate economic benefit.

Article 13 - Public education and awareness

91. Is your country implementing a communication, education and public awareness strategy and promoting public participation in support of the Convention? (Goal 4.1 of the Strategic Plan)

a) No	X
b) No, but a CEPA strategy is under development	
c) Yes, a CEPA strategy developed and public participation promoted to a limited extent (please provide details below)	
d) Yes, a CEPA strategy developed and public participation promoted to a significant extent (please provide details below)	

Further comments on the implementation of a CEPA strategy and the promotion of public participation in support of the Convention.

While Vanuatu has not developed a communication education and public awareness strategy as defined in the Strategic Plan, objective 5 of Vanuatu's National Biodiversity Strategy and Action Plan focused on environmental education, awareness and information sharing. Achievements towards this objective include:

- Sectoral activities such as the National Year of Reforestation and National Year of Fisheries have provided a means for education about forest management, planting and revegetation and management of coastal fisheries resources respectively. Many of the initiatives started through these two programmes have had excellent impact and proved sustainable.
- Collaboration between Vanuatu Quarantine and Inspection Services and the Education Department to develop a high school curriculum that addresses biosecurity issues including pests and invasive species.
- Extensive use of drama to facilitate awareness of environmental issues affecting rural communities.
- Work in collaboration with UNESCO to facilitate the introduction of local and indigenous environmental content into the school curriculum.
- Work of specific projects such as the Sustainable Forest Utilisation Programme to promote awareness of and build capacity for sustainable forest management.
- Work of the Biosafety Enabling Activity to introduce biodiversity concepts and issues such as genetically modified organisms to the general population.

92. Is your country undertaking any activities to facilitate the implementation of the programme of work on Communication, Education and Public Awareness as contained in the annex to decision VI/19? (decision VI/19)

a) No	
b) No, but some programmes are under development	
c) Yes, some activities are being undertaken (please provide details below)	X
d) Yes, many activities are being undertaken (please provide details below)	

Further comments on the activities to facilitate the implementation of the programme of work on CEPA.

Vanuatu has used GEF Enabling Funds to create a web site that provides the basis for international communication and information exchange about Vanuatu's biodiversity and biodiversity work in progress in Vanuatu. Vanuatu has also participated in a project led by the South Pacific Regional

Environment Programme (SPREP) to strengthen the management of reference information and exchange of information within and between the Pacific Island Countries.

93. Is your country strongly and effectively promoting biodiversity-related issues through the press, the various media and public relations and communications networks at national level? (decision VI/19)

a) No	
b) No, but some programmes are under development	
c) Yes, to a limited extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	

media and public relations and communications networks at national level.

Vanuatu's Government has formed cross sectoral advisory committees that oversee work on key programmes related to the multilateral environment treaties. These provide a conduit for information exchange and debate at national level. National level debate is also encouraged through strategic planning workshops and forums.

There is a fortnightly radio programme that promotes awareness of biodiversity and other national environmental issues.

Wan Smol Bag has developed feature films that are circulated in DVD and video formats nationally to promote discussion on biodiversity related issues.

94. Does your country promote the communication, education and public awareness of biodiversity at the local level? (decision VI/19)

a) No	
b) Yes (please provide details below)	X

Further information on the efforts to promote the communication, education and public awareness of biodiversity at the local level.

Vanuatu's natural resource sectoral agencies have all produced awareness materials aimed at community level including pamphlets, brochures, fliers, radio talk shows, workshops and videos. Newspapers are used on an occasional and opportunistic basis, in part because they have limited reach beyond the urban area. Radio communication has widest coverage although it does not reach all locations. There is a fortnightly environmental programme that is used to promote awareness of the multi-lateral environmental agreements and national environment priorities.

The Vanuatu Chamber of Commerce has produced a range of information materials on tree planting as one component of their activities under the National Year of Reforestation.

Wantok Environment Centre has fostered networks between conservation minded individuals and communities that are effectively promoting biodiversity related issues.

The Environment Unit is using a four year conservation project to promote biodiversity issues specific to the three islands of Gaua, Santo and Tanna.

95. Is your country supporting national, regional and international activities prioritised by the Global Initiative on Education and Public Awareness? (decision VI/19)

a) No	
b) No, but some programmes are under development	
c) Yes, some activities supported (please provide details below)	X
d) Yes, many activities supported (please provide details below)	

Further comments on the support of national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness.

Vanuatu has used GEF Enabling Funds to establish a web site that provides the basis for international communication and information exchange about Vanuatu's biodiversity and biodiversity work in progress in Vanuatu. Vanuatu has also participated in a project led by the South Pacific Regional Environment Programme (SPREP) to strengthen the management of reference information and exchange of information within the Pacific Island Countries.

96. Has your country developed adequate capacity to deliver initiatives on communication, education and public awareness?

a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes are being implemented (please provide details below)	
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on the development of adequate capacity to deliver initiatives on communication, education and public awareness.

Vanuatu has limited financial capacity and personnel to deliver adequate communication, education and public awareness (CEPA) initiatives. The diverse work that has occurred is often piece-meal and short term in nature, and undertaken within the context of specific development project activities. Agencies often have limited capacity to absorb the costs of information and education programmes after projects have closed.

The Fisheries Department has recently restructured and now includes a management, policy and information division which is primarily devoted to communication, education and public awareness. The Department will recruit a full time Information Officer in 2006.

On the other hand, restructuring and reprioritizing of activities by the Department of Forestry has led to the Information Officer Position remaining vacant, and the Department's newsletter "Bus Nius" being sidelined.

The Department of Agriculture and Rural Development has the best developed information and extension service, employing field staff on most islands Vanuatu. However the Department's efforts are primarily focused on developing small holder capacity for subsistence food security and commercial production. Engagement in biodiversity conservation is limited to work on site stable agriculture in vulnerable locations.

97. Does your country promote cooperation and exchange programmes for biodiversity education and awareness at the national, regional and international levels? (decisions IV /10 and VI/19)

a) No	
b) Yes (please provide details below)	X

Further comments on the promotion of cooperation and exchange programmes for biodiversity education and awareness, at the national, regional and international levels.

Vanuatu benefits from participation in a range of cooperative programmes for biodiversity education that have been facilitated by Secretariat of the Pacific Community, South Pacific Regional Environmental Programme, Food and Agricultural Organisations and institutions from other countries. Recent initiatives include

- The Forest Department has collaborated with the South Pacific Regional Initiative for Forest Genetic Resources (SPRIG) which documented and developed conservation management plans for *Agathis sp*, *Endospermum medullosum*, *Canarium indicum*, and *Terminalia spp*.
- The Forest Department has collaborated with an Australian Centre for International Agricultural Research led study of *Santalum austrocaledonicum* diversity, use and conservation.
- The Department of Agriculture and Rural Development has collaborated with the Secretariat of the Pacific Community (SPC) and the Food and Agricultural Organisational in a regional sustainable farming system initiative.
- Vanuatu Quarantine and Inspection Services works closely with the SPC for the protection of agro-biodiversity from both endemic and introduced species that impact adversely on agriculture and prevention of introduction of new alien species into Vanuatu.
- Vanuatu's Department of Fisheries has maintained close collaboration with the SPC in developing awareness materials for its use at the national level, and the Forum Fisheries Agency in management of migratory fish species. This includes production of pamphlets and posters.

98. Is your country undertaking some CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention?

a) No (please specify reasons below)	
b) Yes, some activities undertaken for some issues and thematic areas (please provide details below)	X
c) Yes, many activities undertaken for most issues and thematic areas (please provide details below)	
d) Yes, comprehensive activities undertaken for all issues and thematic areas (please provide details below)	

Further comments on the CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention.

Vanuatu Quarantine and Inspection Services implements some communication, education and public awareness activities, including work to raise awareness of biosafety issues addressed in the Cartagena Protocol to the Convention on Biological Diversity.

Vanuatu's National Capacity Self Assessment process includes communication, education and public awareness activities to raise awareness of cross cutting issues to build capacity for effective involvement in capacity assessments.

99. ■ Does your country support initiatives by major groups, key actors and stakeholders that integrate biological diversity conservation matters in their practice and education programmes as well as into their relevant sectoral and cross-sectoral plans, programmes and policies? (decision IV/10 and Goal 4.4 of the Strategic Plan)

a) No

b) Yes (please provide details below)

Further comments on the initiatives by major groups, key actors and stakeholders that integrate biodiversity conservation in their practice and education programmes as well as their relevant sectoral and cross-sectoral plans, programmes and policies.

A range of locally based organisations are active in providing community education on biodiversity matters including the Chamber of Commerce and Industry (varietal work with root crops, promotion of tree crops and agroforestry), community theatre groups of which "Wan Smol Bag" is the best known, Volunteer agencies such as Peace Corp, CUSO and JOCV and development NGOs such as FSP Vanuatu.

There is a gradual trend towards greater inter-agency cooperation in programme delivery and joint programme delivery as seen with the Coral Gardens Project implemented by the Foundation of the Peoples of the South Pacific (Vanuatu), the Fisheries Department and "Wan Smol Bag" theatre; or agro-forestry projects implemented by the Chamber of Commerce with inputs from the Agriculture and Forestry Departments. There is also a trend towards greater recognition of the capacity and roles of non-government organisations in extending the work that can be achieved by government agencies.

100. Is your country communicating the various elements of the 2010 biodiversity target and establishing appropriate linkages to the Decade on Education for Sustainable Development in the implementation of your national CEPA programmes and activities? (decision VII/24)

a) No

b) No, but some programmes are under development

c) Yes, some programmes developed and activities undertaken for this purpose (please provide details below)

d) Yes, comprehensive programmes developed and many activities undertaken for this purpose (please provide details below)

X

Further comments on the communication of the various elements of the 2010 biodiversity target and the establishment of linkages to the Decade on Education for Sustainable Development.

Most communication, education and public awareness activities provide for general awareness of biodiversity conservation or relate to practical resource management outcomes that are relevant to the lives of rural ni-Vanuatu. Work has not specifically addressed the 2010 biodiversity targets and the Decade on Education for Sustainable Development.

Box XXXV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu's agencies place particular importance on CEPA activities to raise the capacity of local communities and landholders to sustainably manage their environmental resources and to maximise the economic benefit provided to present and future generations.

However, the logistics of effective communication in a small island nation with limited communication and transport facilities, over 100 languages and low levels of functional adult literacy, pose a constant challenge. While progress toward the global 2010 targets has been limited, CEPA activities have effectively supported national priorities as established in the National Biodiversity Strategy and Action Plan (1999), the National Forestry Plan (2000) and the National Priorities and Action Agenda (undated).

Article 14 - Impact assessment and minimizing adverse impacts

101. ■ On Article 14.1(a), has your country developed legislation requiring an environmental impact assessment of proposed projects likely to have adverse effects on biological diversity?

a) No	
b) No, legislation is still in early stages of development	
c) No, but legislation is in advanced stages of development	
d) Yes, legislation is in place (please provide details below)	X
e) Yes, review of implementation available (please provide details below)	

Further information on the legislation requiring EIA of proposed projects likely to have adverse effects on biodiversity.

Vanuatu's Environment Management and Conservation Act (2003) introduced mandatory environment impact (EIA) assessment for all projects, proposals or development activities that are likely to:

- cause significant environmental, social and/or custom impacts; or
- affect coastal dynamics or result in coastal erosion;
- result in the pollution of water resources;
- affect any protected, rare, threatened or endangered species, its habitat or nesting grounds;
- result in the contamination of land;
- endanger public health;
- affect important custom resources;
- affect protected or proposed protected areas;
- affect air quality;
- result in the unsustainable use of renewable resources;
- result in the introduction of foreign organisms and species;
- any other activity specified by the Minister by regulations.

Since the introduction of this act EIA provisions are widely applied and there has been good adherence with the EIA requirements from the private sector and government.

102. ■ On Article 14.1(b), has your country developed mechanisms to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biological diversity?

a) No	X
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	

environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biodiversity.

At present Vanuatu's environment impact assessment requirements only apply to projects, proposals or development activities and are not imposed on national programmes or policies. However, the Environment Unit and natural resource sector agencies normally have opportunity to comment on national programmes and policies during their development and flag any environmental concerns that may exist.

103. ■ On Article 14.1(c), is your country implementing bilateral, regional and/or multilateral agreements on activities likely to significantly affect biological diversity outside your country's jurisdiction?

a) No	
b) No, but assessment of options is in progress	
c) Yes, some completed, others in progress (please provide details below)	X
d) Yes (please provide details below)	

Further information on the bilateral, regional and/or multilateral agreements on activities likely to significantly affect biodiversity outside your country's jurisdiction.

Vanuatu has implemented a regional agreement with respect to transboundary movements of hazardous wastes. Under this agreement Australia helped remove stockpiles of persistent organic pesticides from Vanuatu for destruction.

Vanuatu Maritime Services maintains an international maritime register open to the international shipping industry. Following international concerns about impacts of fishing on marine biodiversity, Vanuatu Maritime Authority has required all fishing vessels operating under the Vanuatu flag to comply with internationally accepted provisions of Fisheries Commission Agencies designed to safeguard marine mammals, turtles and sea birds from accidental catch and prevent undue impacts on marine biodiversity.

104. ■ On Article 14.1(d), has your country put mechanisms in place to prevent or minimize danger or damage originating in your territory to biological diversity in the territory of other Parties or in areas beyond the limits of national jurisdiction?

a) No	X
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place based on current scientific knowledge	

105. On Article 14.1(e), has your country established national mechanisms for emergency response to activities or events which present a grave and imminent danger to biological diversity?

a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	X

Further information on national mechanisms for emergency response to the activities or events which present a grave and imminent danger to biodiversity.

A number of specific emergency response mechanisms are in place.

Vanuatu Quarantine and Inspections Services has border controls in place to manage introduction of living organisms and prevent introduction of organisms and pathogens that present an environmental risk, or a risk to agriculture, livestock or human health. Items considered of quarantine risk are subjected to appropriate treatment prior to release. Non permitted imports are destroyed. In addition regular monthly quarantine checks are carried out in areas where high risk activities are in place. Emergency response measures were deployed when a single nest of *Wasmania auropunctata* was identified in Luganville, with rapid containment and eradication. A standard set of response procedures guide the Department in the event of introduction of quarantine risks.

The Ports and Harbour Department and the Vanuatu Maritime Authority have provisional guidelines for event of marine oil spill. These have not been deployed.

106. Is your country applying the Guidelines for Incorporating Biodiversity-related Issues into Environment-Impact-Assessment Legislation or Processes and in Strategic Impact Assessment as contained in the annex to decision VI/7 in the context of the implementation of paragraph 1 of Article 14? (decision VI/7)

a) No	
b) No, but application of the guidelines under consideration	
c) Yes, some aspects being applied (please specify below)	X
d) Yes, major aspects being applied (please specify below)	

Further comments on application of the guidelines.

The Environmental Impact Assessment requirements of Vanuatu's Environment Management and Conservation Act (2003) correspond to the guidelines contained in the annex to decision VI/7. However, Vanuatu's EIA provisions only apply to projects, proposals or development activities. There is as yet no formal provision for Strategic Impact Assessment of national policies, plans and other strategic documents. However, inputs from natural resource sectoral agencies including the Environment Unit would normally be requested and taken into consideration as strategic documents are prepared.

107. On Article 14 (2), has your country put in place national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity? (decision VI/11)

a) No	
b) Yes (please specify the measures)	X

Further comments on national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity.

Vanuatu's Plant Protection Act (1997) includes a section on liability which states that the importer of an introduced organism is responsible for the cost of eradicating the organism if it is found to pose a

risk to biodiversity.

Vanuatu's draft Biosecurity Policy also addresses the issue of liability and redress for damage to biological diversity.

108. Has your country put in place any measures to prevent damage to biological diversity?

a) No	
b) No, but some measures are being developed	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures in place to prevent damage to biological diversity.

The Environment Impact Assessment provisions of the Environment Management and Conservation Act (2003) are one measure intended to prevent damage to biological diversity and other aspects of the natural and social environment. To prevent damage to the environment including biodiversity, the Environment management and Conservation Act (2003) also provides for national policies and subsidiary legislation. These provisions have not yet been applied.

Vanuatu Quarantine and Inspection Services has in place border surveillance and control mechanisms and also monitoring systems where there is risk to agro-biodiversity. Where species of concern are present, samples of pest organisms, especially *Euocima fullonia* and *Bactrocera trilineola* are taken at regular intervals to monitor their population. Work is also done on *Papuana uninodis*, *Eichorniae crassipes*, *Pistia stratiotes* and *Sida rhombifolia* to identify economic control or eradication options.

The Draft Biosafety Policy extends these measures to introduce control measures aimed at preventing damage to the environment from imported organisms including genetically modified organisms, their products and derivatives.

The Fisheries Regulations (1987) are designed to prevent adverse impacts on wild populations of marine organisms from harvesting activities.

The Code of Logging Practice (1988) is implemented to prevent adverse impacts on forests and components of the forest environments, including downstream rivers and marine areas, from timber harvesting activities.

109. Is your country cooperating with other Parties to strengthen capacities at the national level for the prevention of damage to biodiversity, establishment and implementation of national legislative regimes, policy and administrative measures on liability and redress? (decision VI/11)

a) No	
b) No, but cooperation is under consideration	
c) No, but cooperative programmes are under development	
d) Yes, some cooperative activities being undertaken (please provide details below)	X
e) Yes, comprehensive cooperative activities being undertaken (please provide details below)	

Further comments on cooperation with other Parties to strengthen capacities for the prevention of damage to biodiversity.

Vanuatu is involved in a wide range of multilateral and regional initiatives to strengthen capacities for the prevention of damage to biodiversity. These include

1. Vanuatu Quarantine and Inspection Services (Vanuatu Quarantine and Inspection Services) works in collaboration with the Secretariat of the Pacific Community (SPC) to maintain and

access data on alien species and pests of agricultural importance. Where there is need for management, programmes are developed and executed.

2. Vanuatu's Fisheries Department received Australian technical assistance to establish a database system to support monitoring programs. Assistance with data management is also received from regional institutions such as the SPC.
3. Vanuatu Quarantine and Inspection Services (VQIS) collaborates with other countries in the region through the SPC to foster consistent and effective measures to manage the transboundary movements of living organisms.
4. Both VQIS and the Environment Unit liaise with the regional Invasive Species Network and anticipate Vanuatu's participation in region wide pilot projects facilitated by the Network and the South Pacific Environment Programme (SPREP) to address priority invasive species threats.
5. FAO and CIRAD funded studies of site stable agricultural systems have increased the capacity of the Department of Agriculture and Rural Development to reduce impacts of agriculture in small islands and sloping lands.

Vanuatu also participates in bilateral programmes that strengthen in-country capacity to prevent damage to biodiversity. These include:

- a. Applied research programmes of the Australian Centre for Agricultural Research investigating *Trochus niloticus* and *Birgus latro* fisheries and stock management;
- b. Technical assistance and training from Japan to the Fisheries Department;
- c. The Australian Government funded Vanuatu Forest Resource Inventory System (VANRIS) and the subsequent Sustainable Forestry Utilisation Project, the Sandalwood Project and the South Pacific Regional Initiative on Forest Genetic Resources that have all helped build the capacity of the Department of Forests to manage forest resources.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu has made considerable progress since the last CBD COP in legislating for and implementing mechanisms for Environmental Impact Assessment that include assessment of impacts on biodiversity, and assessment of cultural and social impacts from development activities. The mechanisms in place are partly devolved to other agencies broadening and mainstreaming responsibility for environmental screening of projects. However, the Environment Unit lacks financial and human resource capacity to adequately implement the act. The single position designated responsibility for coordination of EIA activities throughout the country remains vacant.

In general the private and public sectors have both responded positively to the introduction of EIA provisions. However, a test case has shown the Environment Management and Conservation Act (2003) does not adequately provide for entry to property to allow monitoring and enforcement of EIA provisions. As a result the Environment Unit has not been able to intervene or stop work that has potential to impact adversely on the environment. An amendment to the Act is being drafted to overcome this inadequacy.

Collaborative approaches to building in-country capacity to prevent adverse impacts on biodiversity have been positive. However, many key areas have yet to be addressed including mangroves, sea grasses, and bird fauna.

Article 15 - Access to genetic resources

110. ■ Has your country endeavored to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms, in accordance with paragraphs 2, 4 and 5 of Article 15?

a) No	
b) Yes (please provide details below)	X

Further information on the efforts taken by your country to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms.

The Environment Management and Conservation Act (2003) facilitates access to genetic resources by permitting bioprospecting activities. The permitting system requires that prior informed consent is obtained from any traditional owners and that terms for taking of the sample, especially where for potential commercial applications, are recognised and agreed with traditional owners in advance.

Over a two year period from 2003 to 2005 a Draft Biosafety Framework was developed. This policy provides a mechanism for risk assessment, prior informed consent and set terms for importing genetic resources for environmentally sound uses. The Biosafety Framework has yet to progress to the Council of Ministers for endorsement.

111. ■ Has your country taken measures to ensure that any scientific research based on genetic resources provided by other Parties is developed and carried out with the full participation of such Parties, in accordance with Article 15(6)?

a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to ensure that any scientific research based on genetic resources provided by other Contracting Parties is developed and carried out with the full participation of such Contracting Parties.

Vanuatu's Plant Protection Act (1997) and Animal Importation Act (1997) apply to the importation of living organisms, and risk assessments are coordinated by Vanuatu Quarantine and Inspection Services prior to any import.

The Draft Biosafety Framework which is has yet to be considered by the Council of Ministers, strengthens these measures to provide a more rigorous mechanism for risk assessment, prior informed consent and set terms for access to genetic resources for environmentally sound uses.

In addition the Environment Management and Conservation Act (2003) provides for regulation of bioprospecting activities. It is an offence for anyone to import any sample collected for research or bioprospecting purposes or associated applications without a permit from the Environment Unit.

112. ■ Has your country taken measures to ensure the fair and equitable sharing of the results of research and development and of the benefits arising from the commercial and other use of genetic resources with any Contracting Party providing such resources, in accordance with Article 15(7)?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive legislation is in place (please provide details below)	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place (please provide details below)	
f) Yes, comprehensive policy and administrative measures are in place (please provide details below)	

The Bioprospecting sections of the Environment Management and Conservation Act (2003) provide an initial process for recording owners and providers of genetic resources for research and development uses. This is further developed in a decision of the Council of Ministers to establish a Scientific Research Council. This Council will have broader responsibilities for facilitating and coordinating research work, ensuring full prior informed consent is obtained, ensuring indigenous rights are recognised and ensuring that provisions are made for fair and equitable sharing of the benefits of research and development activities. Legislation is being drafted for this purpose. In the interim the Council of Ministers has placed responsibility with the Environment Unit for fulfilling this role.

In addition recommendations have progressed to Ministerial level for amendments to strengthen the draft Patents, Trademarks and Designs Bills and the draft Copyrights Act to more fully protect intellectual property rights with respect to knowledge and use of biodiversity. The recommendations provide for perpetual ownership of traditional biodiversity knowledge and place responsibility for registration of traditional biodiversity knowledge with the proposed Scientific Research Council.

These measures have been developed to protect ni-Vanuatu rights to equitable benefit sharing from biodiversity research and development activities, as there is limited research capacity within-country.

113. ■ In developing national measures to address access to genetic resources and benefit-sharing, has your country taken into account the multilateral system of access and benefit-sharing set out in the International Treaty on Plant Genetic Resources for Food and Agriculture?

a) No	
b) Yes (please provide details below)	X

Further information on national measures taken which consider the multilateral system of access and benefit-sharing as set out in the International Treaty on Plant Genetic Resources for Food and Agriculture.

Legal advisors assisting with the development of initiatives to address access to genetic resources and benefit-sharing took into consideration the International Treaty on Plant Genetic Resources for Food and Agriculture, and noted annex 2 to the Treaty (C5/89) which stated that farmers have a *priori* rights to the materials their ancestors have developed since time immemorial and must be rewarded for their activities and conservation of genetic resources.

114. Is your country using the Bonn Guidelines when developing and drafting legislative, administrative or policy measures on access and benefit-sharing and/or when negotiating contracts and other arrangements under mutually agreed terms for access and benefit-sharing? (decision VII/19A)

a) No	
b) No, but steps being taken to do so (please provide details below)	X
c) Yes (please provide details below)	

Please provide details and specify successes and constraints in the implementation of the Bonn Guidelines.

The Bonn Guidelines will be taken into consideration when legislation is drafted to give force to Ministerial decisions with respect to formation of a Scientific Research Council and amendments to the draft Patents, Trademarks and Designs Bills and the draft Copyrights Act.

115. Has your country adopted national policies or measures, including legislation, which address the role of intellectual property rights in access and benefit-sharing arrangements (i.e. the issue of disclosure of origin/source/legal provenance of genetic resources in applications for intellectual property rights where the subject matter of the application concerns, or makes use of, genetic resources in its development)?

a) No	
b) No, but potential policies or measures have been identified (please specify below)	
c) No, but relevant policies or measures are under development (please specify below)	X
d) Yes, some policies or measures are in place (please specify below)	
e) Yes, comprehensive policies or measures adopted (please specify below)	

Further information on policies or measures that address the role of IPR in access and benefit-sharing arrangements.

The Bioprospecting Sections of Vanuatu's Environment Management and Conservation Act (2003) provide an initial process for recording owners and providers of genetic resources for research and development uses.

This is further developed in a decision by Vanuatu's Council of Ministers to establish a Scientific Research Council. The Council will have broad responsibilities for facilitating and coordinating research work including setting a framework for full prior informed consent, recognition of indigenous rights and fair and ensuring equitable sharing of the benefits from research and development activities. Legislation is being drafted for this purpose. In the interim the Council of Ministers has placed responsibility with the Environment Unit for fulfilling this role.

In addition Ministerial recommendations call for amendments to the draft Patents, Trademarks and Designs Bills and the draft Copyrights Act to more fully protect intellectual property rights with respect to knowledge and use of biodiversity. The recommendations provide for perpetual ownership of traditional biodiversity knowledge and place responsibility for registration of traditional biodiversity knowledge with the proposed Scientific Research Council.

116. Has your country been involved in capacity-building activities related to access and benefit-sharing?

a) Yes (please provide details below)

X

b) No

Please provide further information on capacity-building activities (your involvement as donor or recipient, key actors involved, target audience, time period, goals and objectives of the capacity-building activities, main capacity-building areas covered, nature of activities). Please also specify whether these activities took into account the Action Plan on capacity-building for access and benefit-sharing adopted at COP VII and available in annex to decision VII/19F.

Representatives of Vanuatu have participated in a number of forums that have improved awareness and understanding of access and benefit sharing provisions. These include

- Representatives of Vanuatu participated in a Symposium on the Protection of Traditional Knowledge and Expressions of Indigenous Cultures in the Pacific Islands, Noumea 15-19 February, 1999, the Secretariat of the Pacific Community, New Caledonia.
- Two representatives of the State Law Office participated in an SPC/PIFS/UNESCO Workshop for Legal Experts on the Protection of Traditional Knowledge and Expressions of Culture, Noumea, 26-28 February, 2001.
- There was cross sectoral participation in a national workshop on Access to Genetic Resources and Benefit Sharing facilitated by FIELD/SPREP/WWF in the Hotel Melanesian, April 2001.
- Representatives also participated in discussions over a Draft Model Law for the Protection of Traditional Knowledge and Expression of Culture, SPC/PIFS/UNESCO Group of Legal Experts, New Caledonia, 26-28 June, 2002.

Box XXXVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu has made progress toward developing policy mechanisms to recognise indigenous property rights and benefit sharing where access to genetic resources is requested for research and commercial purposes. Work to develop legislation to implement these policy decisions has been delayed by the limited legal drafting capacity of the State Law Office.

Consultation conducted to prepare this report indicated a need for work to foster wider understanding and recognition of the principals inherent to this article and to fully institutionalise these measures within the operations of sectoral agencies. With delays, budget restrictions, staff change-overs and heavy work-loads many of those involved in initial discussions and deliberations no longer hold relevant positions.

It is a matter of concern that regional programmes such as the South Pacific Regional Initiative for Forest Genetic Resources and the TaroGen project that fostered regional collection of root and tree crops have encouraged sharing of genetic resources without actively promoting best practice to ensure Indigenous Farmers Rights are protected and provision made for fair sharing of any future benefits.

Article 16 - Access to and transfer of technology

117. ■ On Article 16(1), has your country taken measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment?

a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biodiversity or make use of genetic resources and do not cause significant damage to the environment.

The GTZ funded Pacific German Regional Forestry Project (PGRFP) helped Vanuatu's Forestry Department define and adopt sustainable forest management prescriptions for the Butmas model area. The Australian funded Vanuatu Forest Resource Inventory Project, Vanuatu Sustainable Forest Utilisation Project and South Pacific Regional Initiative for Forest Genetic Resources have built the capacity of the Department of Forestry to apply modern forest management techniques to ensure the conservation and sustainable use of forest resources.

The Australian funded *Birgus latro* and *Trochus niloticus* projects and Japanese technical cooperation have similarly built the capacity of the Department of Fisheries to apply modern fisheries management techniques to ensure the conservation and sustainable use of marine resources.

Multilateral programmes of the Secretariat of the Pacific Community (SPC) have been instrumental in providing access to technology and information that have strengthened the capacity of the Departments of Quarantine and Inspection Services, Agriculture and Rural Development and Fisheries. Regional networks through the SPC facilitate information access, exchange and transfer. Advice from the SPC is assisting with import, containment and trialing of a biological control agent for two invasive species *Sida rhombifolia* and *Eichhornia crassipes*. The SPC is assisting Vanuatu's Fisheries Department to develop a five year National Aquaculture Development Plan and in developing an import risk assessment protocol for aquatic species of interest to aquaculture. It is also working with the Lands Department to develop modern data sets for hazard and risk management.

118. ■ On Article 16(3), has your country taken measures so that Parties which provide genetic resources are provided access to and transfer of technology which make use of those resources, on mutually agreed terms?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive legislation is in place	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative arrangements are in place	
g) Not applicable	

119. ■ On Article 16(4), has your country taken measures so that the private sector facilitates access to joint development and transfer of relevant technology for the benefit of Government institutions and the private sector of developing countries?

a) No	X
b) No, but potential measures are under review	
c) Yes, some policies and measures are in place (please provide details below)	
d) Yes, comprehensive policies and measures are in place (please provide details below)	
e) Not applicable	

Further information on the measures taken.

Box XXXVII.

Please elaborate below on the implementation of this article specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Regional and bilateral assistance has been significant in transferring technical capacity to ni-Vanuatu agencies to conserve and sustainably manage use of biological diversity.

However, many of the national priority areas for technical transfer as established by the National Biodiversity Strategy and Action Plan remain un-met. The Forestry Department's priority for updating of the Forest Resource Inventory and mangrove management similarly remain unmet. The need to establish basic facilities for technical and scientific work including maintenance of taxonomic collections similarly remain unmet. Until adequate facilities are in place in country optimum use of the technical transfers that are occurring cannot take place.

Programme of Work on transfer of technology and technology cooperation

120. Has your country provided financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation? (decision VII/29)

a) No	X
b) No, but relevant programmes are under development	
c) Yes, some programmes being implemented (please provide details below)	
d) Yes, comprehensive programmes being implemented (please provide details below)	

Further comments on the provision of financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation.

Vanuatu is a recipient of financial and technical support and training to assist in implementation of the programme of work. It has not as yet provided support to other parties.

121. Is your country taking any measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation? (decision VII/29)

a) No	X
b) No, but some measures being considered	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation.

Vanuatu lacks the financial resources to make significant funding contributions to multi-country initiatives.

122. Has your country made any technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building? (annex to decision VII/29)

a) No	
b) No, but assessments are under way	X
c) Yes, basic assessments undertaken (please provide details below)	
d) Yes, thorough assessments undertaken (please provide details below)	

barriers in relevant sectors as well as related needs in capacity building.

Assessments of Vanuatu's technical and scientific capacity are included in the work programme of the GEF funded National Capacity Self Assessment.

123. Has your country made any assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies? (annex to decision VII/29)

a) No	X
b) No, but assessments are under way	
c) Yes, some assessments undertaken (please provide details below)	
d) Yes, comprehensive assessments undertaken (please provide details below)	

Further comments on the assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies.

124. Has your country identified and implemented any measures to develop or strengthen appropriate information systems for technology transfer and cooperation, including assessing capacity building needs? (annex to decision VII/29)

a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes are in place and being implemented (please provide details below)	
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on measures to develop or strengthen appropriate information systems for technology transfer and cooperation.

Assessments of technical and scientific capacity are included in the work programme of the GEF funded National Capacity Self Assessment.

125. Has your country taken any of the measures specified under Target 3.2 of the programme of work as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention? (annex to decision VII/29)

a) No	
b) No, but a few measures being considered	X
c) Yes, some measures taken (please specify below)	
d) Yes, many measures taken (please specify below)	

Further comments on the measures taken as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention.

Identification of stakeholders, and consultation in the conduct of an assessment of technical and scientific capacity are included in the work programme of the GEF funded National Capacity Self Assessment. Relevant measures are also addressed within the work to develop a National Scientific Research Council. Financial and technical constraints impede progress beyond the capacity review stage, as evidenced by difficulties in resourcing the proposed Scientific Research Council.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

The transfer of technology and technological cooperation are important in building Vanuatu's capacity to implement provisions of the CBD. However, to realize the maximum benefit from the transfers that are occurring there needs to be attention to building in-country access to scientific facilities and equipment and a more coordinated or strategic approach to assistance.

Article 17 - Exchange of information

126. ■ On Article 17(1), has your country taken measures to facilitate the exchange of information from publicly available sources with a view to assist with the implementation of the Convention and promote technical and scientific cooperation?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive measures are in place	

The following question (127) is for DEVELOPED COUNTRIES

127. ■ On Article 17(1), do these measures take into account the special needs of developing countries and include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on?

a) No	
b) Yes, but they do not include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	
c) Yes, and they include categories of information listed in Article 17 (2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

The GEF funded CBD Enabling Projects allowed a web site to be established that provided links for access to information on Vanuatu's biodiversity; a biodiversity collection of published and unpublished works has been established in the Environment Unit; and a national collection of published information on Vanuatu is now accommodated under the auspices of the Vanuatu Cultural Centre.

However these initiatives are fairly limited and already need to be updated.

The Environment Unit has experienced difficulties in repatriating information (such as lists of biodiversity collections) held internationally, including being asked to sign intellectual property agreements such limit Vanuatu's right to use information on its own biodiversity. Information drawn from sectoral projects and activities of different departments is often inadequately catalogued or stored and hence is difficult to retrieve and access. A fire which destroyed the Department of Forestry Office in Luganville in 2005 destroyed a significant collection of information from projects and field trials as duplicates were not held elsewhere.

Article 18 - Technical and scientific cooperation

128. ■ On Article 18(1), has your country taken measures to promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to promote international technical and scientific cooperation.

Vanuatu facilitates international technical and scientific cooperation assistance involving bilateral, multilateral and independent institutions. Applied scientific and technical cooperation has included

- Australian funded assistance for *Birgus latro* monitoring and management;
- Australian funded assistance for *Trochus niloticus* monitoring and management;
- Recently completed SPC coordinated ProcFish/C project assisting inshore fishery resource management;
- A 3 year JICA funded coastal resource management program targeting mass production of Trochus, Green Snail, Sea Cucumber and Giant Clams for stock enhancement and subsistence aquaculture developments;
- The GTZ funded Pacific German Regional Forestry Project (PGRFP) that is helping Vanuatu's Forestry Department define and adopt sustainable forest management prescriptions for the Butmas model area;
- The EU funded Landholder Forest Regeneration Naturally Project promoting appropriate technology for landholder engagement in forest regeneration;
- Australian funded Vanuatu Sustainable Forest Utilisation Project and South Pacific Regional Initiative for Forest Genetic Resources;
- Multilateral programmes of the Pacific Community (SPC) that have been instrumental in increasing in-country access to technology and information that have strengthened the capacity of the Departments of Quarantine and Inspection Services, Agriculture and Rural Development and Fisheries;
- Regional networks resulting from SPC facilitated scientific and technical cooperation.

Given the limited scientific capacity in-country Vanuatu has also facilitated collaborative or independent work by international academic researchers to gain additional taxonomic information. In the past decade work has been carried out by researchers from the Australian museum, the Museum of South Australia (ants, feather stars), University of California (sponges), University of Dakota (reptiles).

129. ■ On Article 18(4), has your country encouraged and developed methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention?

a) No	
b) No, but relevant methods are under development	
c) Yes, methods are in place	X

130. ■ On Article 18(5), has your country promoted the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention?

a) No	
b) Yes (please provide some examples below)	X

Examples for the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention.

On small scale project basis there has been collaboration in developing techniques for mass production of *Trochus niloticus* in a hatchery coupled with community based Trochus broodstock enhancement in reefs. Publication of such findings has been disseminated to member countries that have an interest in developing a Trochus fishery. This activity has been funded by the ACIAR.

There has been similar collaboration on developing techniques for cultivation of *Santalum austrocaledonicum*. Publication of such findings has been disseminated to member countries that have an interest in developing a Sandalwood industry. This activity has been funded by the ACIAR.

131. Has your country established links to non-governmental organizations, private sector and other institutions holding important databases or undertaking significant work on biological diversity through the CHM? (decision V/14)

a) No	
b) No, but coordination with relevant NGOs, private sector and other institutions under way	
c) Yes, links established with relevant NGOs, private sector and institutions	X

The following question (132) is for DEVELOPED COUNTRIES

132. Has your country further developed the CHM to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation? (decision V/14)

a) No	
b) Yes, by using funding opportunities	
c) Yes, by means of access to, and transfer of technology	
d) Yes, by using research cooperation facilities	
e) Yes, by using repatriation of information	
f) Yes, by using training opportunities	
g) Yes, by using promotion of contacts with relevant institutions, organizations and the private sector	
h) Yes, by using other means (please specify below)	

Further comments on CHM developments to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation.

133. Has your country used CHM to make information available more useful for researchers and decision-makers? (decision V/14)

a) No	
b) No, but relevant initiatives under consideration	
c) Yes (please provide details below)	X

Further comments on development of relevant initiatives.

There is limited information on biodiversity held in-country, and so biodiversity related web sites are an important source of information for staff of natural resource management agencies and the Environment Unit in Vanuatu. GEF Enabling Assistance has given the Vanuatu Environment Unit access to the internet and allowed Vanuatu to establish its own web site providing researchers and decision-makers links to access information about Vanuatu.

134. Has your country developed, provided and shared services and tools to enhance and facilitate the implementation of the CHM and further improve synergies among biodiversity-related Conventions? (decision V/14)

a) No	X
b) Yes (please specify services and tools below)	
Further comments on services and tools to enhance and facilitate the implementation of CHM and further improve synergies among biodiversity-related Conventions.	

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Technical and scientific collaboration has been important to building Vanuatu's capacity to conserve and manage sustainably the use of biodiversity. It has provided the information base that has informed a range of resource management decisions and increased the capacity of individuals to assess biodiversity resources and formulate management responses.

There remains a continuing need to build adequate in-country facilities so that the benefits from collaboration can be maximised and built into on-going work programmes of government and non-government agencies.

Access to internet based information has been an asset to the Environment Unit and other agencies promoting sustainable management of resources in Vanuatu. However, financial considerations have limited the size and scope of Vanuatu's biodiversity web site, and the frequency with which it is updated.

Article 19 - Handling of biotechnology and distribution of its benefits

135. On Article 19(1), has your country taken measures to provide for the effective participation in biotechnological research activities by those Contracting Parties which provide the genetic resources for such research?

a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place	
d) Yes, comprehensive legislation are in place	
e) Yes, comprehensive statutory policy and subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative measures are in place	

136. ■ On Article 19(2), has your country taken all practicable measures to promote and advance priority access by Parties, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Parties?

a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place	
d) Yes, comprehensive measures are in place	

Box XXXVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Little biotechnological research has taken place in Vanuatu. Research that has been conducted has been in association with aid related development projects in agriculture, forestry and fisheries.

Measures to address engagement in biotechnological research and applications and to ensure equitable access and benefit sharing are addressed in the Draft Biosafety Policy and the Council of Ministers decision to form a Scientific Research Council.

Article 20 – Financial resources

Box XXXIX.

Please describe for each of the following items the quantity of financial resources, both internal and external, that have been utilized, received or provided, as applicable, to implement the Convention on Biological Diversity, on an annual basis, since your country became a Party to the Convention.

a) Budgetary allocations by national and local Governments as well as different sectoral ministries	In 2005 approximately USD\$100,000 was devoted directly to implementation of the CBD including management of the Herbarium.
b) Extra-budgetary resources (identified by donor agencies)	NIL
c) Bilateral channels (identified by donor agencies)	In 2005 approximately USD\$10,000 was devoted directly to implementation of the CBD although there is variation in the amount from year to year. Donors include various High Commissions and small donor schemes to which Vanuatu has access.
d) Regional channels (identified by donor agencies)	Most regional programmes draw upon funds from bilateral and multilateral agencies and are considered within e) below.

e) Multilateral channels (identified by donor agencies)	Most funding for implementation of the CBD has come from GEF and is either managed by UNDP or UNEP. The amount available has increased and in 2005 approximately USD \$200,000 was received.
f) Private sources (identified by donor agencies)	NIL
g) Resources generated through financial instruments, such as charges for use of biodiversity	NIL

Box XL.

Please describe in detail below any major financing programmes, such as biodiversity trust funds or specific programmes that have been established in your country.

GEF enabling activities and regional medium and full scale projects have been the main source of financing through which Vanuatu has directly addressed responsibilities under the CBD. It is envisaged this situation will continue, as national and bilateral funding focus on economic and social development, with biodiversity conservation an important but secondary outcome.

The National Biodiversity Strategy and Action Plan recommended generating income from visitor charges and management of a trust fund. While approved in principle within the National Biodiversity Strategy and Action Plan there has been no progress in implementing the recommendation due to Department of Finance policy on revenue management.

137. ■ On Article 20(1), has your country provided financial support and incentives to those national activities that are intended to achieve the objectives of the Convention?

a) No	
b) Yes, incentives only (please provide a list of such incentives below)	
c) Yes, financial support only	X
d) Yes, financial support and incentives (please provide details below)	

Further comments on financial support and incentives provided.

There are modest allocations in the national budget towards human resources and some operational costs associated with sectoral biodiversity conservation activities. These allocations have not increased significantly over the past five years.

Most financial support for activities that achieve the objectives of the convention comes from development support provided by bilateral or multilateral partners.

Incentives that exist are indirect: seedlings and planting bags handed out during the National Year of Regeneration were more to encourage an increase in productive tree plantings rather than conservation of biodiversity *per se*. Similarly incentives such as distribution of *Trochus niloticus* is directed at increasing the productivity of fisheries resources rather than conservation of biodiversity.

The next question (138) is for DEVELOPED COUNTRIES

138. ■ On Article 20(2), has your country provided new and additional financial resources to enable developing country Parties to meet the agreed incremental costs to them of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes (please indicate the amount, on an annual basis, of new and additional financial resources your country has provided)	
Further comments on new and additional financial resources provided.	

The next question (139) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

139. ■ On Article 20(2), has your country received new and additional financial resources to enable it to meet the agreed full incremental costs of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes	X

140. ■ Has your country established a process to monitor financial support to biodiversity, including support provided by the private sector? (decision V/11)	
a) No	X
b) No, but procedures being established	
c) Yes (please provide details below)	
Further comments on processes to monitor financial support to biodiversity, including support provided by the private sector.	

141. ■ Has your country considered any measures like tax exemptions in national taxation systems to encourage financial support to biodiversity? (decision V/11)	
a) No	X
b) No, but exemptions are under development (please provide details below)	
c) Yes, exemptions are in place (please provide details below)	
Further comments on tax exemptions for biodiversity-related donations.	

142. Has your country reviewed national budgets and monetary policies, including the effectiveness of official development assistance allocated to biodiversity, with particular attention paid to positive incentives and their performance as well as perverse incentives and ways and means for their removal or mitigation? (decision VI/16)

a) No	X
b) No, but review is under way	
c) Yes (please provide results of review below)	
Further comments on review of national budgets and monetary policies, including the effectiveness of official development assistance.	

143. Is your country taking concrete actions to review and further integrate biodiversity considerations in the development and implementation of major international development initiatives, as well as in national sustainable development plans and relevant sectoral policies and plans? (decisions VI/16 and VII/21)

a) No	
b) No, but review is under way	X
c) Yes, in some initiatives and plans (please provide details below)	
d) Yes, in major initiatives and plans (please provide details below)	
Further comments on review and integration of biodiversity considerations in relevant initiatives, policies and plans.	
<p>The GEF funded NCSA provides a mechanism for reviewing opportunities for lateral and vertical integration of issues addressed by the multilateral environment agreements, including the CBD, into major national planning and development activities. However, no concrete actions have been implemented as yet.</p>	

144. Is your country enhancing the integration of biological diversity into the sectoral development and assistance programmes? (decision VII/21)

a) No	
b) No, but relevant programmes are under development	
c) Yes, into some sectoral development and assistance programmes (please provide details below)	X
d) Yes, into major sectoral development and assistance programmes (please provide details below)	
Further comments on the integration of biodiversity into sectoral development and assistance programmes	
<p>The Environment Impact Assessment provisions of Vanuatu's Environment Management and Conservation Act (2003) require sectoral agencies to conduct a preliminary environment assessment. This role helps mainstream assessment of biological diversity within their work programmes.</p> <p>A recently completed Biosafety Enabling project was placed with Vanuatu Quarantine and Inspection Services to encourage consideration of biological diversity issues within their work programmes. Similarly work to document and apply traditional knowledge of biodiversity is being subcontracted to the Vanuatu Cultural Centre to increase their capacity with respect to integration of biodiversity into cultural programmes.</p>	

The next question (145) is for DEVELOPED COUNTRIES

145. Please indicate with an "X" in the table below in which area your country has provided financial support to developing countries and/or countries with economies in transition. Please elaborate in the space below if necessary.

A r e a s	Support provided
a) Undertaking national or regional assessments within the framework of MEA (decision VI/8)	
b) <i>In-situ</i> conservation (decision V/16)	
c) Enhance national capacity to establish and maintain the mechanisms to protect traditional knowledge (decision VI/10)	
d) <i>Ex-situ</i> conservation (decision V/26)	
e) Implementation of the Global Strategy for Plant Conservation (decision VI/9)	
f) Implementation of the Bonn Guidelines (decision VI/24)	
g) Implementation of programme of work on agricultural biodiversity (decision V/5)	
h) Preparation of first report on the State of World's Animal Genetic Resources (decision VI/17)	
i) Support to work of existing regional coordination mechanisms and development of regional and sub regional networks or processes (decision VI/27)	
j) Development of partnerships and other means to provide the necessary support for the implementation of the programme of work on dry and subhumid lands biological diversity (decision VII/2)	
k) Financial support for the operations of the Coordination Mechanism of the Global Taxonomy Initiative (decision VII/9)	
l) Support to the implementation of the Action Plan on Capacity Building as contained in the annex to decision VII/19 (decision VII/19)	
m) Support to the implementation of the programme of work on mountain biological diversity (decision VII/27)	
n) Support to the implementation of the programme of work on protected areas (decision VII/28)	
o) Support to the development of national indicators (decision VII/30)	
p) Others (please specify)	
Further information on financial support provided to developing countries and countries with economies in transition.	

The next question (146) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

146. Please indicate with an "X" in the table below in which areas your country has applied for funds from the Global Environment Facility (GEF), from developed countries and/or from other sources. The same area may have more than one source of financial support. Please elaborate in the space below if necessary.

Areas	Applied for funds from		
	GEF	Bilateral	Other
a) Preparation of national biodiversity strategies or action plans	X		
b) National capacity self-assessment for implementation of Convention (decision VI/27)	X		
c) Priority actions to implement the Global Taxonomy Initiative (decision V/9)			
d) <i>In-situ</i> conservation (decision V/16)	X		
e) Development of national strategies or action plans to deal with alien species (decision VI/23)	X		
f) <i>Ex-situ</i> conservation, establishment and maintenance of <i>Ex-situ</i> conservation facilities (decision V/26)			X
g) Projects that promote measures for implementing Article 13 (Education and Public Awareness) (decision VI/19)	X	X	X
h) Preparation of national reports (decisions III/9, V/19 and VI/25)	X		
i) Projects for conservation and sustainable use of inland water biological diversity (decision IV/4)			X
j) Activities for conservation and sustainable use of agricultural biological diversity (decision V/5)			X
k) Implementation of the Cartagena Protocol on Biosafety (decision VI/26)	X		
l) Implementation of the Global Taxonomy Initiative			
m) Implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity			
n) Others (please specify)			
Further information on application for financial support.			

Box XLI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

Vanuatu lacks financial capacity to meet all its commitments as a signatory to the UN CBD. As a least developed country Vanuatu has benefited significantly from assistance through GEF and bilateral mechanisms that has allowed the country to address some global biodiversity priorities.

D. THEMATIC AREAS

147. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the thematic programmes of work of the Convention (marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, inland waters biodiversity, dry and sub-humid lands and mountain biodiversity).

3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Programme of Work					
	Agricultural	Forest	Marine and coastal	water ecosystem	Dry and subhumid lands	Mountain
a. Lack of political will and support	3	2	2	3	N/A	2
b. Limited public participation and stakeholder involvement	2	2	2	3	N/A	1
(a) Lack of mainstreaming and integration of biodiversity issues into other sectors	3	3	2	3	N/A	1
(b) Lack of precautionary and proactive measures	3	2	2	3	N/A	2
(c) Inadequate capacity to act, caused by institutional weakness	3	1	2	3	N/A	2
(d) Lack of transfer of technology and expertise	2	2	2	2	N/A	1
(e) Loss of traditional knowledge	2	1	2	2	N/A	1
(f) Lack of adequate scientific research capacities to support all the objectives	2	2	2	3	N/A	1
(g) Lack of accessible knowledge and information	1	1	2	2	N/A	1
(h) Lack of public education and awareness at all levels	2	2	2	3	N/A	1
(i) Existing scientific and traditional knowledge not fully utilized	2	2	2	3	N/A	2
(j) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	3	N/A	n/a	n/a	N/A	1

(k) Lack of financial, human, technical resources	3	3	3	3	N/A	3
(l) Lack of economic incentive measures	3	3	2	3	N/A	3
(m) Lack of benefit-sharing	2	2	2	2	N/A	1
(n) Lack of synergies at national and international levels	1	2	2	3	N/A	1
(o) Lack of horizontal cooperation among stakeholders	2	2	2	3	N/A	1
(p) Lack of effective partnerships	2	2	2	2	N/A	1
(q) Lack of engagement of scientific community	1	1	1	2	N/A	1
(r) Lack of appropriate policies and laws	3	2	2	3	N/A	1
(s) Poverty	3	1	1	1	N/A	3
(t) Population pressure	3	2	2	2	N/A	1
(u) Unsustainable consumption and production patterns	2	2	2	1	N/A	1
(v) Lack of capacities for local communities	3	3	3	3	N/A	3
(w) Lack of knowledge and practice of ecosystem-based approaches to management	3	2	2	2	N/A	3
(x) Weak law enforcement capacity	1	2	3	3	N/A	1
(y) Natural disasters and environmental change	2	3	3	3	N/A	1
(z) Others (please specify)						

Inland water ecosystems

148. Has your country incorporated the objectives and relevant activities of the programme of work into the following and implemented them? (decision VII/4)

Strategies, policies, plans and activities	No	Yes, partially, integrated but not implemented	and implemented	N/A
a) Your biodiversity strategies and action plans		X		
b) Wetland policies and strategies	X			
c) Integrated water resources management and water efficiency plans being developed in line with paragraph 25 of the Plan of Implementation of the World Summit on Sustainable Development	X			
d) Enhanced coordination and cooperation between national actors responsible for inland water ecosystems and biological diversity		X		

Further comments on incorporation of the objectives and activities of the programme of work

Vanuatu's National Biodiversity Strategy and Action Plan placed high priority on watershed management to achieve biodiversity protection and conservation. Initial achievements have been

- improved documentation of Vanuatu's aquatic biodiversity, and greater scientific interest in freshwater biodiversity;
- passage of the Water Resource Management Act (2003);
- plans to manage the Tagabe River Catchment. One benefit of this initial watershed management exercise, has been closer collaboration between the Department of Geology, Mines and Water Resources, the National Herbarium, the Environment Unit, SHEFA Province and the water supply company UNELCO.
- Work plans to promote conservation of the biodiversity associated with Lake Letas, Gaua Island.

However there has been limited progress in other areas of this programme of work. Vanuatu has neither specific wetland policies and strategies nor integrated water resource management and efficiency plans. National interest in development of a national mangrove management plan remains unresourced, and assessments of coastal marine wetlands on Malekula as a potential RAMSAR site have not moved beyond preliminary work.

149. Has your country identified priorities for each activity in the programme of work, including timescales, in relation to outcome oriented targets? (decision VII/4)

a) No	X
b) Outcome oriented targets developed but priority activities not developed	
c) Priority activities developed but not outcome oriented targets	
d) Yes, comprehensive outcome oriented targets and priority activities developed	

Further comments on the adoption of outcome oriented targets and priorities for activities, including providing a list of targets (if developed).

150. Is your country promoting synergies between this programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level? (decision VII/4)

a) Not applicable (not Party to Ramsar Convention)	X
b) No	
c) No, but potential measures were identified for synergy and joint implementation	
d) Yes, some measures taken for joint implementation (please specify below)	
e) Yes, comprehensive measures taken for joint implementation (please specify below)	

activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level.

151. Has your country taken steps to improve national data on: (decision VII/4)

Issues	Yes	No	is under way
1. Goods and services provided by inland water ecosystems?			Recent developments in inland aquaculture receive a lot of interest from rural communities.
2. The uses and related socioeconomic variables of such goods and services?		X	
3. Basic hydrological aspects of water supply as they relate to maintaining ecosystem function?		X	
4. Species and all taxonomic levels?	X		
5. On threats to which inland water ecosystems are subjected?	X		

Further comments on the development of data sets, in particular a list of data sets developed in case you have replied "YES" above.

Species

The Environment Unit has facilitated biodiversity assessments of aquatic systems, including rapid biodiversity assessments and specialist work by independent aquatic researchers. It is now known that Vanuatu has a rich and complex freshwater biodiversity including a number of cryptic species and species and genera new to science. However, much more work is needed to move this from the species level to gain a better understanding of inland water ecosystems and their socio-economic function.

This work will be furthered progressed by a global biodiversity expedition to the island of Santo in

2006.

French researchers are collaborating to produce a guide to the freshwater biodiversity of Vanuatu.

Threats

Work led by the Environment Unit on aquatic ecosystems identified a range of threats to inland water ecosystems including

- Clearing and agricultural activity (including subsistence agriculture) on the banks, flood plains and critical components of watersheds.
- High levels of water diversion and extraction on several islands for irrigated agriculture and small scale traditional aquaculture.
- Invasive species e.g. Water Hyacinth, *Tilapia mozambicus*, *Gambusia sp.*
- Attitudes towards traditional ownership of resources that are a barrier to holistic ecosystem approaches to catchment management.

152. Has your country promoted the application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems? (decision VII/4)

a) No, the guidelines have not been reviewed	X
b) No, the guidelines have been reviewed and found inappropriate	
c) Yes, the guidelines have been reviewed and application/promotion is pending	
d) Yes, the guidelines promoted and applied	

Further comments on the promotion and application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems.

Box XLII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

For many years Vanuatu's aquatic biodiversity was poorly known. While it provides important subsistence resources it had attracted neither scientific assessment nor economic interest. In the last 5 years this has situation has changed.

It is now known that Vanuatu's freshwater biodiversity is high and significant including several cryptic species and species new to science. At the same time as scientific interest has been roused there is growing interest in aquaculture of both indigenous and introduced species. As a consequence Vanuatu faces an immediate challenge to find balance between conservation and sustainable use of freshwater biodiversity, poverty alleviation and food security. There is a pressing need for ecosystem approaches to integrate land, forest and freshwater management, especially in the area of agriculture which is presently unregulated.

Marine and coastal biological diversity

General

153. Do your country's strategies and action plans include the following? Please use an "X" to indicate your response. (decisions II/10 and IV/15)

a) Developing new marine and coastal protected areas	X
b) Improving the management of existing marine and coastal protected areas	X
c) Building capacity within the country for management of marine and coastal resources, including through educational programmes and targeted research initiatives (if yes, please elaborate on types of initiatives in the box below)	X
d) Instituting improved integrated marine and coastal area management (including catchments management) in order to reduce sediment and nutrient loads into the marine environment	
e) Protection of areas important for reproduction, such as spawning and nursery areas	
f) Improving sewage and other waste treatment	
g) Controlling excessive fishing and destructive fishing practices	X
h) Developing a comprehensive oceans policy (if yes, please indicate current stage of development in the box below)	
i) Incorporation of local and traditional knowledge into management of marine and coastal resources (if yes, please elaborate on types of management arrangements in the box below)	X
j) Others (please specify below)	
k) Not applicable	

Please elaborate on the above activities and list any other priority actions relating to conservation and sustainable use of marine and coastal biodiversity.

A). Vanuatu has a focus on informal community based marine and coastal protected areas in which traditional land holders are supported by government and non-government agencies e.g. Fisheries Department, Foundation of the Peoples of the South Pacific

B). Where requested and according to budget availability, the Fisheries Department assists communities to assess the resources in their local marine "tabu" areas and provides advice on the status of resources present. This may lead to Departmental advice on appropriate management plans. To boost community initiative, the Department may give the community hatchery reared *Trochus niloticus* juveniles. Several development NGOs are also active to foster locally managed tabu areas and other resource conservation activities, including FSP, Wan Smol Bag and Peace Corp.

C) Capacity is typically built within the context of national and regional development projects. Locally selected coordinators will be trained in basic stock assessment techniques, and collaborate with project staff to conduct field surveys. Project staff receive training through project design, project evaluation and data analysis either within the country or in regional or sub-regional workshops specifically organized for the project. Where appropriate their new skills and knowledge is passed down to community level.

G). The Fisheries Regulations (1987) control destructive fishing practices and excessive fishing. These include prohibition of fishing practices such as dynamite or drift net fishing and stock management measures including closed seasons, quotas, licensing, size limits, and gear restrictions.

I). Local and traditional knowledge of marine and coastal management is widely respected in Vanuatu. Government and non-government organisations encourage traditional knowledge and

management mechanisms to be incorporated into marine and coastal resource conservation initiatives. Given the limited government resources available, the Fisheries Department gives priority to community led decision-making and management systems in which community leaders appoint people to oversee the entire policing and monitoring of resources within their jurisdictions.

Implementation of Integrated Marine and Coastal Area Management

154. Has your country established and/or strengthened institutional, administrative and legislative arrangements for the development of integrated management of marine and coastal ecosystems?

a) No	
b) Early stages of development	X
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	

management.

In a review of Vanuatu's Priority Environment Concerns Tapisuwe et al (2003) gave priority to integrated coastal management. However, little progress has been made in the past 2 years. Structural inertia, sectorally led planning and *ad hoc* collaboration between Departments such as Agriculture, Fisheries, Lands and Rural Water Resources contribute to this outcome.

155. Has your country implemented ecosystem-based management of marine and coastal resources, for example through integration of coastal management and watershed management, or through integrated multidisciplinary coastal and ocean management?

a) No	
b) Early stages of development	X
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	

and coastal resources.

Several provisions of Vanuatu's Fisheries Act (1987) and proposed revisions to the Fisheries Regulations facilitate a shift toward integrated multidisciplinary ocean management approaches. However considerable work needs to be done before holistic ocean and coastal management systems can be adopted.

Marine and Coastal Living Resources

156. Has your country identified components of your marine and coastal ecosystems, which are critical for their functioning, as well as key threats to those ecosystems?

a) No	
b) Plans for a comprehensive assessment of marine and coastal ecosystems are in place (please provide details below)	
c) A comprehensive assessment is currently in progress	
d) Critical ecosystem components have been identified, and management plans for them are being developed (please provide details below)	X
e) Management plans for important components of marine and coastal ecosystems are in place (please provide details below)	
f) Not applicable	

and coastal ecosystems, as well as key threats to them

The following critical components of ecosystems have been identified :

- There is only a small area of mangroves within Vanuatu. Where they occur they are important as fish nurseries, crustacean habitats and for environmental services. The Forestry Department is seeking to amend the Forestry Act so as to be able to initiate mangrove management plans. From work on Malekula the threats to mangroves are both natural (tectonic uplift and storm damage) as well as man made (cutting for firewood and posts and encroachment of agriculture activities on their landward margin).
- There are concerns at degradation of coral reefs evidenced in coral die back, bleaching, and outbreaks of predators such as Crown of Thorns. Harvesting of live corals was a threat until it was banned in 2003. Now only cultured corals can be exported and there is opportunity to train communities to enter the trade of coral farming for aquarium purposes. Destructive fishing practices were addressed through Vanuatu's Fisheries Regulations (1987) and are no longer considered a major problem. Threats to coral reefs also come from those land-based activities that lead to increased soil erosion or pollution. While it has been recognized a more integrated coastal management approach would help reduce these threats government agencies have so far demonstrated little motivation to move in this direction. Natural factors such as cyclone damage and tectonic uplift, and possibly sea level and temperature changes also contribute to the degradation observed.
- A major Crown-of-Thorns Starfish outbreak occurred in late 2005 to the SE of Santo Island. Wantok Environment Centre and the Fisheries Department are working with local communities to motivate removal of Crown-of-Thorns. However underlying causes of the outbreak are not understood.
- Isolated submarine sea-mounts are poorly known but recognised as significant for fisheries biodiversity and fisheries management. Vanuatu's Fisheries Regulations exclude commercial fishing boats from a 2 nautical mile zone around sea mounts, although small locally operated boats are allowed to fish within this zone.
- Sea Cucumbers occupy an important environmental niche. Vanuatu's stock of Sea Cucumbers cannot be adequately quantified due to limited financial resources, however, there are fears this resource might be over fished if precautionary measures are not introduced promptly. Additions to the Fisheries Regulations propose restrictions on the number of licenses granted, a quota system and minimum size limits.

157. Is your country undertaking the following activities to implement the Convention's work plan on coral reefs? Please use an "X" to indicate your response.

Activities	Not implemented nor a priority	Not implemented but a priority	Currently implemented	applicable
a) Ecological assessment and monitoring of reefs			X	
a) Socio-economic assessment and monitoring of communities and stakeholders			X	
b) Management, particularly through application of integrated coastal management and marine and coastal protected areas in coral reef environments		X		
c) Identification and implementation of additional and alternative measures for securing livelihoods of people who directly depend on coral reef services			X	
d) Stakeholder partnerships, community participation programmes and public education campaigns			X	
e) Provision of training and career opportunities for marine taxonomists and ecologists	X			
f) Development of early warning systems of coral bleaching		X		
g) Development of a rapid response capability to document coral bleaching and mortality			X	
h) Restoration and rehabilitation of degraded coral reef habitats		X		
i) Others (please specify below)				

Please elaborate on ongoing activities.

a). Vanuatu's Fisheries Department conducts coral reef monitoring at two points off Efate: Malapoa Point and Hat Island. Reefs are monitored for general reef status and health including degradation, regeneration, and populations of key molluscs and fish. Monitoring has been carried out twice a year for four years.

C). Under a Secretariat of the Pacific Community (SPC) coordinated European Union Funded Project "PROC FISH/C" a socio-economic assessment is gathering information on community motives and practices towards particular marine resources. Data has been gathered from 3 locations off Efate and Uri/Uripiv Islands in Malekula. Reports from this work are not yet available.

Marine and Coastal Protected Areas

158. Which of the following statements can best describe the current status of marine and coastal protected areas in your country? Please use an "X" to indicate your response.

a) Marine and coastal protected areas have been declared and gazetted (please indicate below how many)	
b) Management plans for these marine and coastal protected areas have been developed with involvement of all stakeholders	
c) Effective management with enforcement and monitoring has been put in place	
d) A national system or network of marine and coastal protected areas is under development	
e) A national system or network of marine and coastal protected areas has been put in place	
f) The national system of marine and coastal protected areas includes areas managed for purpose of sustainable use, which may allow extractive activities	
g) The national system of marine and coastal protected areas includes areas which exclude extractive uses	
h) The national system of marine and coastal protected areas is surrounded by sustainable management practices over the wider marine and coastal environment.	
i) Other (please describe below)	X
j) Not applicable	
Further comments on the current status of marine and coastal protected areas.	
<p>In Vanuatu local communities lead most marine and coastal protected area initiatives in accord with traditional indigenous practices. Communities receive advice and technical support from national government and non-government organisations where resources permit.</p>	

Mariculture

159. Is your country applying the following techniques aimed at minimizing adverse impacts of mariculture on marine and coastal biodiversity? Please check all that apply.

a) Application of environmental impact assessments for mariculture developments	X
b) Development and application of effective site selection methods in the framework of integrated marine and coastal area management	X
c) Development of effective methods for effluent and waste control	X
d) Development of appropriate genetic resource management plans at the hatchery level	
e) Development of controlled hatchery and genetically sound reproduction methods in order to avoid seed collection from nature.	X
f) If seed collection from nature cannot be avoided, development of environmentally sound practices for spat collecting operations, including use of selective fishing gear to avoid by-catch	
g) Use of native species and subspecies in mariculture	X

h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polypoids.	X
i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity	
j) Minimising the use of antibiotics through better husbandry techniques	X
k) Use of selective methods in commercial fishing to avoid or minimize by-catch	X
l) Considering traditional knowledge, where applicable, as a source to develop sustainable mariculture techniques	X
m) Not applicable	
Further comments on techniques that aim at minimizing adverse impacts of mariculture on marine and coastal biodiversity.	
<p>A). Environmental Impact Assessments are mandatory since introduction of the Environment Management and Conservation Act (2003). All mariculture developments now undergo a Preliminary Environment Assessment and those which have potential to have environmental impact undergo a comprehensive environment and social impact assessment.</p> <p>b). Site selection plays a crucial role in deciding the location of a proposed development to ensure that the proposed development does not impact on the natural water system in the area.</p> <p>c). Effluents discharged from a pond culture system are high in nutrients. Effluents must be diverted to a settlement pond which usually contains aquatic plants that absorb nutrients before water is released.</p> <p>e) The Fisheries Department operates a controlled hatchery for rearing juvenile <i>Trochus niloticus</i>. Trials on mass rearing of <i>Turbo marmoratus</i> in a controlled hatchery had poor results. <i>Tridacna spp</i> are also reared in controlled hatcheries for export.</p> <p>g). Local species used for mariculture include <i>Trochus niloticus</i>, <i>Turbo marmoratus</i>, coral culture and <i>Tridacna spp.</i>.</p> <p>h) Vanuatu's first commercial prawn farm is a designated quarantine site, with controls in place to prevent the inadvertent release of the species being farmed.</p> <p>j). To date the Fisheries Department have not used antibiotics in their hatcheries and trials. This situation may change once large privately run commercial farms are established.</p> <p>k). Use of gear restrictions such as restriction on mesh sizes for drag and cast nets will come into force in 2006. In addition, fencing would also be banned in all coastal waters in the country. Use of drift nets is prohibited under Vanuatu law in all Vanuatu Waters by all fishing vessels operating in the country's jurisdiction.</p> <p>l). Knowledge on traditional management of <i>Trochus</i> fishery has been used in a recent study on <i>Trochus</i> culture and enhancement on selected sites on Epi, Malekula and Pentecost. The results have proved to be very promising and the experiences gained may be applied to other resources with mariculture potential.</p>	

Alien Species and Genotypes

160. Has your country put in place mechanisms to control pathways of introduction of alien species in the marine and coastal environment? Please check all that apply and elaborate on types of measures in the space below.

a) No	
b) Mechanisms to control potential invasions from ballast water have been put in place (please provide details below)	X
c) Mechanisms to control potential invasions from hull fouling have been put in place (please provide details below)	
d) Mechanisms to control potential invasions from aquaculture have been put in place (please provide details below)	X
e) Mechanisms to control potential invasions from accidental releases, such as aquarium releases, have been put in place (please provide details below)	
f) Not applicable	

Further comments on the current status of activities relating to prevention of introductions of alien species in the marine and coastal environment, as well as any eradication activities.

Ballast water: To minimize the risk of accidental invasions from ship ballast water restrictions have been imposed on the release of ballast and waste water by ships within Vanuatu's coastal waters.

Entry of potential invasives: All introductions for aquaculture or ornamental purposes undergo a risk assessment process prior to import. Invasiveness is one risk considered prior to any decision to permit import.

New aquaculture developments undergo environmental impact assessment. Site selection, farm husbandry practices and farm designs are critically analysed during the environment impact assessment to minimize any risk from accidental release of potentially invasive species.

The Fisheries Department receives technical advice from the Secretariat of the Pacific Community for development of an aquatic import risk assessment protocol. The protocol will target species of importance and relevance to Vanuatu and facilitate Vanuatu Quarantine and Inspection Services' role in conducting pre-import risk assessment and setting permitting restrictions.

Box XLIII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu has had limited progress in meeting the goals and outcomes of the programme of work on Marine and Coastal Biodiversity. This experience reflects national priorities for the development of commercial fisheries and aquaculture, and to improve rural livelihoods and food security. It also reflects national legal and institutional structures. Through the Fisheries Act (1987) the Department of Fisheries has a focus on fisheries management which is implemented at a species level. This situation is in contrast with the Forestry Department which includes a Forest Conservation Unit.

Agricultural biological diversity

161. ■ Has your country developed national strategies, programmes and plans that ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components? (decisions III/11 and IV/6)

a) No	
b) No, but strategies, programmes and plans are under development	
c) Yes, some strategies, programmes and plans are in place (please provide details below)	X
d) Yes, comprehensive strategies, programmes and plans are in place (please provide details below)	

Neither the Vanuatu Quarantine and Inspections Services (VQIS) nor the Department of Agriculture and Rural Development (DARD) have explicit policies that address conservation and sustainable use of biodiversity. However, they both manage work programmes that promote conservation and sustainable use of agro-biodiversity.

The VQIS aims to prevent introduction of alien species of agricultural, health or environmental risk as well as monitoring a small number of the pest species already in country. At strategic locations it monitors and controls inter-island movement of one alien species (*Wasamania auropunctata*) and it monitor several species of economic importance (*Bactrocera trilineola*, *Solanum torvum*, *Lantana camara*, and *Sida rhombifolia*). The Department is currently trialing potential biological control agents for *Sida spp.* and *Neochetina eichhorneae*.

DARD leads site stable agriculture and food security programmes that address farming practices and systems. These programmes reduce native forest clearing pressures, help prevent decline of soil nutrients, and maintain subsistence production. DARD has also established varietal collections of native and introduced agricultural resources including kava, yams, taro, kumala, coconuts, breadfruit and other agricultural commodities.

A Draft National Biosafety Framework has been prepared. The Biosafety Framework addresses transboundary movements of new and novel species and products derived from living organisms, including genetically modified organisms.

162. ■ Has your country identified ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use, including food security, of agricultural biological diversity? (decision V/5)

a) No	X
b) No, but potential measures are under review	
c) Yes, some measures identified (please provide details below)	
d) Yes, comprehensive measures identified (please provide details below)	

Further information on ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use of agricultural biodiversity.

Annex to decision V/5 - Programme of work on agricultural biodiversity

Programme element 1 – Assessment	
163. Has your country undertaken specific assessments of components of agricultural biodiversity such as on plant genetic resources, animal genetic resources, pollinators, pest management and nutrient cycling?	
a) No	
b) Yes, assessments are in progress (please specify components below)	X
c) Yes, assessments completed (please specify components and results of assessments below)	
<p>The Department of Agriculture and Rural Development (DARD), in association with the Vanuatu Agricultural Research and Training Center (VARTC) and the French International Agricultural and Development Research Agency (CIRAD) have carried out work that has, in addition to other objectives, identified and described some of the varieties and/or cultivars of a number of economically important root crops, including taro, kumala and kava. Work is in progress on yams. Assessment is done on their agronomic and economic characteristics as well as potential for hybridisation. Varieties that show promising agronomic and economic traits have been selected and distributed to farmers throughout Vanuatu.</p> <p>About a decade ago, the Livestock Section started to introduce new genes into the country's beef cattle. In recent years semen from Brahman, Belgium Blue and Sahiwal varieties have been introduced by commercial farmers and the Department to improve beef and dairy herds.</p> <p>The VQIS, with financial and technical assistance from the Secretariat of the Pacific Community (SPC) is evaluating the effectiveness of practices to manage pest introduction and monitor those already present. With SPC assistance the department is conducting contained field trials on two biological control organisms: <i>Calligapha pantherinea</i> (Sida Beetle) which is host specific and feeds on <i>Sida acenta</i>, <i>S. rhombifolia</i> and <i>S. refusa</i> (Broomweed) and <i>Neochetina eichhorniae</i> (Water Hyacinth Weevil) that is specific to water hyacinth. Preliminary results are promising.</p> <p>DARD has trialed and evaluated the efficiency of several tree legumes, including <i>Gliricidia sepium</i>, that are now distributed to farmers as a means to recycle soil nutrients. Other leguminous plants such as laplap bean are also been promoted as cover plants. In general, mixed cropping and crop rotation are encouraged as a means of nutrient recycling and pest management. The sustainable farming systems programme is also documenting the use of traditional practices for control of pests and diseases and soil enhancement and encouraging farmers to maintain these practices.</p>	

164. Is your country undertaking assessments of the interactions between agricultural practices and the conservation and sustainable use of the components of biodiversity referred to in Annex I of the Convention (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance)?	
a) No	X
b) Yes, assessments are under way	
c) Yes, some assessments completed (please provide details below)	
d) Yes, comprehensive assessments completed (please provide details below)	
Further comments on assessment of biodiversity components (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance).	
<p>There have not been any formal assessments on the interactions between Vanuatu's agricultural practices and conservation and sustainable use of components. However, work programmes of the Department of Agriculture and Rural Development, such as the Development of Sustainable Farming Practices, Farming Systems and Food Security Programmes indirectly address these issues.</p>	

165. Has your country carried out an assessment of the knowledge, innovations and practices of farmers and indigenous and local communities in sustaining agricultural biodiversity and agro-ecosystem services for food production and food security?

a) No	
b) Yes, assessment is under way	X
c) Yes, assessment completed (please specify where information can be retrieved below)	

Further comments on assessment of the knowledge, innovations and practices of farmers and indigenous and local communities.

Collaborative work involving the Vanuatu Quarantine and Inspection Services, the Vanuatu Agricultural Research and Training Center, and the Department of Agriculture and Rural Development with financial and technical assistance from FAO and Secretariat of the Pacific Community has documented some of the traditional knowledge, practices and innovations that indigenous farmers have used to sustain their agricultural productivity. The use of traditional plants to protect against pests and pathogens are examples. These practices are now incorporated into work to promote sustainable farming systems.

166. Has your country been monitoring an overall degradation, status quo or restoration/rehabilitation of agricultural biodiversity since 1993 when the Convention entered into force?

a) No	X
b) Yes, no change found (status quo)	
c) Yes, overall degradation found (please provide details below)	
d) Yes, overall restoration or rehabilitation observed (please provide details below)	

Further comments on observations.

While Vanuatu agencies have not been monitoring overall agricultural biodiversity there have been a number of isolated initiatives and observations made.

With financial and technical assistance from the Secretariat of the Pacific Community, the Department of Agriculture and Rural Development has identified areas where elements of agricultural biodiversity are under threat: in particular the wild yam cultivars that were traditionally semi-cultivated within forest environments. Where populations of these species have markedly declined cultivars have been reintroduced and sustainable farming practices promoted and encouraged.

Anecdotal observations and reports from communities suggest that there has been some decline in agricultural biodiversity and agricultural productivity in many locations, but this has not been substantiated.

Consultations during finalization of this report also raised concerns about a decline in the range of cultivars of a range of traditional food crops.

Programme element 2 - Adaptive management

167. Has your country identified management practices, technologies and policies that promote the positive, and mitigate the negative, impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods?

a) No	
b) No, but potential practices, technologies and policies being identified	
c) Yes, some practices, technologies and policies identified (please provide details below)	X
d) Yes, comprehensive practices, technologies and policies identified (please provide details below)	

Vanuatu's Department of Agriculture and Rural Development manages sustainable farming and food security programmes that promote and encourage sustainable use of environmental resources, including land, water and biodiversity, within agriculture. Practices that are encouraged include practical and beneficial elements from both traditional farming systems and modern farming practices. These include minimum tillage and contouring planting on slopes, crop rotation, mixed cropping, use of legume trees, cover crops, terracing and discouraging shifting slash and burn agriculture. Integrated Pest Management System (IPM) is promoted drawing on effective traditional practices.

Field trials and research programmes inform gradual management adaptations.

Programme element 3 – Capacity-building

168. Has your country increased the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable agricultural biodiversity and to develop strategies and methodologies for *In-situ* conservation, sustainable use and management of agricultural biological diversity?

a) No	
b) Yes (please specify area/component and target groups with increased capacity)	X

Further comments on increased capacities of farmers, indigenous and local communities, and their organizations and other stakeholders.

Vanuatu's Department of Agriculture and Rural Development maintain an effective field officer network spanning most islands with the objective of increasing the capacities of small holder farmers and local communities to both increase agricultural production and promote more sustainable agricultural practices. Mediums used to transfer information include demonstration plots, workshops, seminars, and peer to peer exchange involving key farmers. Results from the work are encouraging. Farmers have shown they realise the importance of sustainable farming practices, with an increasing number of farmers now employing the sustainable practices promoted.

Cultivars of taro, yam and kumala have been distributed to selected farmers to establish *in situ* collections to complement the *ex situ* collections held at VARTC and Vila.

169. Has your country put in place operational mechanisms for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity?

a) No	X
b) No, but potential mechanisms being identified	
c) No, but mechanisms are under development	
d) Yes, mechanisms are in place	

170. Has your country improved the policy environment, including benefit-sharing arrangements and incentive measures, to support local-level management of agricultural biodiversity?

a) No	X
b) No, but some measures and arrangements being identified	
c) No, but measures and arrangements are under development	
d) Yes, measures and arrangements are being implemented (please specify below)	

Further comments on the measures taken to improve the policy environment.

Programme element 4 – Mainstreaming

171. Is your country mainstreaming or integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes?

a) No	
b) No, but review is under way	
c) No, but potential frameworks and mechanisms are being identified	X
d) Yes, some national plans or strategies mainstreamed and integrated into some sectoral plans and programmes (please provide details below)	
e) Yes, some national plans or strategies mainstreamed into major sectoral plans and programmes (please provide details below)	

and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes.

Vanuatu is conducting a National Capacity Self Assessment process which includes identification of strategies to more effectively integrate national biodiversity conservation priorities into agricultural work plans.

172. Is your country supporting the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans, and its integration into wider strategies and action plans for biodiversity?

a) No	
b) Yes, by supporting institutions in undertaking relevant assessments	
c) Yes, by developing policy and planning guidelines	
d) Yes, by developing training material	
e) Yes, by supporting capacity-building at policy, technical and local levels	
f) Yes, by promoting synergy in the implementation of agreed plans of action and between ongoing assessment and intergovernmental processes.	X

Further comments on support for institutional framework and policy and planning mechanisms.

Vanuatu is conducting a National Capacity Self Assessment process which includes identification of strategies to more effectively integrate national biodiversity conservation priorities into agricultural work plans.

173. In the case of centers of origin in your country, is your country promoting activities for the conservation, on farm, *In-situ*, and *Ex-situ*, of the variability of genetic resources for food and agriculture, including their wild relatives?

a) No	
b) Yes (please provide details below)	X

agriculture in their center of origin.

Most agriculture plants have been introduced and have their centre of origin elsewhere. However Vanuatu hosts considerable genetic resources for several root crops in particular kava, yams, taros and vegetables such as island cabbage, and is believed the center of origin for kava, *Piper methysticum*. *Ex Situ* and *In-situ* collections of these species have been established by development projects funded by FAO, the Secretariat of the Pacific Community, the EU and other bilateral donors. The costs of maintaining *ex situ* collections have been prohibitive, leading to a shift towards distributing cultivars for *in situ* cultivation.

Box XLIV.

Please provide information concerning the actions taken by your country to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.

Vanuatu has limited resources to address all components of the UN CBD. No action has been taken as yet by the Department of Agriculture and Rural Development to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.

Box XLV.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Vanuatu has made some progress toward specific goals of the programme of work on agricultural biodiversity.

However, clearing for agriculture remains the major threat to Vanuatu's lowland biodiversity. This situation reflects national priorities for the development of agriculture to expand the formal economy and to improve rural livelihoods and food security. It also reflects institutional and legal structures that discourage a shift toward integrated systems wide approaches to environment management.

Forest Biological Diversity**General**

174. Has your country incorporated relevant parts of the work programme into your national biodiversity strategies and action plans and national forest programmes?

d) No	
e) Yes, please describe the process used	
f) Yes, please describe constraints/obstacles encountered in the process	X
a) Yes, please describe lessons learned	
b) Yes, please describe targets for priority actions in the programme of work	

Further comments on the incorporation of relevant parts of the work programme into your National Biodiversity Strategy and Action Plan and forest programmes

Vanuatu's National Forest Policy (2000) and the National Biodiversity Strategy and Action Plan (1999) were developed through in-country consultative processes. Both respond to many of the priorities within the programme of work on Forest Biological Diversity.

The focus of the National Forest Policy (2000) is sustainable use of forest biological diversity (Goal 4 of the work programme). This is being realised through implementation of the Code of Logging Practice (1998), work to support activities by local (indigenous) communities to manage forest resources and improved information systems and resource inventories.

The National Biodiversity Strategy and Action Plan (1999) directly addresses several of the recommendations of the programme of work on forest biodiversity in areas such as environmental education, awareness and information sharing; capacity building for environmental management; management of invasive species; and enhancing the institutional environment for conservation of biodiversity.

Vanuatu has financial and human resource constraints. It is not possible to address such a comprehensive work programme in its entirety. An important constraint stems from the national system of inalienable traditional tenure of land and land based resources. Conservation of forest biodiversity can only occur with the explicit agreement of the traditional landholders. Despite incentives and programmes to promote regeneration following timber harvesting many landholders choose to further log to enable conversion to agriculture.

Box XLVI.

Please indicate what recently applied tools (policy, planning, management, assessment and measurement) and measures, if any, your country is using to implement and assess the programme of work. Please indicate what tools and measures would assist the implementation.

The aim of the National Forest Policy (2000) is sustainable management of Vanuatu's forest resources. The principal mechanism for achieving this is the Code of Logging Practice (1998): including legally enforceable forest management guidelines, training to operators and extension activities to inform and educate communities. The National Year of Regeneration (2003) was a strategic awareness raising tool and specifically promoted revegetation, agroforestry and forest management. Through the bilaterally funded South Pacific Regional Initiative on Forest Genetic Resources and Sandalwood projects applied research has provided a better understanding of the genetic diversity of priority local species and improved understanding of appropriate silvicultural practices. Priority is also given to maintaining and expanding the work of the National Herbarium and encouraging community level protected area and conservation initiatives.

Adherence to the Code of Logging Practice (1998) is assessed through periodic monitoring and spot checks on timber harvesting operators. Progress in implementation of the National Forest Policy (2000) is measured through annual business plans and annual reports of the Department of Forestry.

Box XLVII.

Please indicate to what extent and how your country has involved indigenous and local communities, and respected their rights and interests, in implementing the programme of work.

Over 90% of Vanuatu's population is indigenous and 80% of Vanuatu's population live subsistence or semi-subsistence lifestyles on their traditional lands. Vanuatu's Constitution provides for inalienable traditional land ownership which extends to resources on the land. Respect for the rights and interests of landholders and their communities is inherent to all work of the Forestry Department and all natural resource sector agencies.

Landholders must formally agree to issuing of a logging license. The Department's role is as witness to this agreement. Communities are involved in a process of identifying trees that should be reserved from harvesting and in monitoring that agreed timber harvesting activities proceed in accord with their requirements.

Focus group discussions were held with local communities from representative areas throughout Vanuatu to identify the priority tree species for management and silvicultural research, and this led to initiatives to prepare conservation plans for five priority species.

Consultations were held with representative groups of stakeholders in all Provinces during development of the National Forest Policy (2000) and the Code of Logging Practice (1998).

Forest conservation activities are led and managed at local level and can only proceed with the agreement of the landholder and their local community. The Government lacks capacity to take on more than an advisory role with management planning and enforcement a community role.

Officers record vernacular names and local uses of specimens collected for the National Herbarium.

Box XLVIII.

Please indicate what efforts your country has made towards capacity building in human and capital resources for the implementation of the programme of work.

Over the past decade the capacity of Vanuatu's Forest Department has increased significantly. Long term bilateral assistance projects such as the Vanuatu Forest Resource Inventory System and the Sustainable Forest Utilisation Programme raised capacity by training staff, acquiring information, developing regulatory mechanisms necessary for sustainable forest management, and increasing the effectiveness of extension services. Today over 50% of staff are qualified with

Diploma of Forestry awards or higher. However, as the forestry sector has evolved there is emerging a growing need for specialised technical staff in areas such as wood technology, marketing, forest ecology, silviculture and forest genetics.

There has been more limited progress in acquiring the capital resources needed for the implementation of the National Forest Programme. In fact there have been significant losses in this area with the office of the Department in Luganville burning, and insufficient budget to maintain and operate vehicles initially acquired through project activities.

Capacity building efforts are guided by national priorities and have only indirectly addressed the CBD programme of work on forests.

Box XLIX.

Please indicate how your country has collaborated and cooperated (e.g., south-south, north-south, south-north, north-north) with other governments, regional or international organizations in implementing the programme of work. Please also indicate what are the constraints and/or needs identified.

Vanuatu is a recipient of technical and development assistance. In the forestry sector the main donors have been Australia, New Zealand, Germany, France and the European Union. Recently the Secretariat of the Pacific Community (SPC) moved to facilitate regional forestry initiatives and networks in a move to further develop the forestry sector in the Pacific region.

Work has primarily focused on development of national capacity to operate a sustainable forest industry, and has not been directly guided by or in response to the CBD programme of work on forests.

Expanded programme of work on forest biological diversity

Programme element 1 – Conservation, sustainable use and benefit-sharing	
175. Is your country applying the ecosystem approach to the management of all types of forests?	
a) No (please provide reasons below)	X
b) No, but potential measures being identified (please provide details below)	
c) Yes (please provide details below)	
Comments on application of the ecosystem approach to management of forests (including effectiveness of actions taken, lessons learned, impact on forest management, constraints, needs, tools, and targets).	
<p>Vanuatu's system of inalienable traditional land and resource tenure is a major barrier to application of the ecosystem approach. Traditional land boundaries rarely conform with ecological units. Forest conservation and management initiatives tend to be fragmented in accord with the interests and priorities of different landholders. National capacity constraints also impede progress. In particular there is limited knowledge of Vanuatu's ecological systems, with most research and management initiatives taking place at the species level.</p>	

176. Has your country undertaken measures to reduce the threats to, and mitigate their impacts on forest biodiversity?

Options	X	Details
a) Yes	X	<p>Please specify below the major threats identified in relation to each objective of goal 2 and the measures undertaken to address priority actions</p> <p>Objectives 2, 4 and 5 of goal 2 are not significant threats to Vanuatu's forest systems.</p> <p>Obj 1: Alien species including vines and insect pests are significant threats to forest ecosystems. To reduce the risk of introducing additional invasive species the Forestry Department now promotes only indigenous species. There are initiatives in place to demonstrate the timber qualities of the invasive <i>Cordia elata</i> to encourage its management and harvesting. Extension work has focused on ways to foster regeneration and limit the regrowth of invasive creepers.</p> <p>Obj 3: Climate change is a recognised risk, but Vanuatu lacks the information and capacity to address the potential negative effects of climate change on forest biodiversity. Most in-country activity is focused on coastal areas threatened by sea level rise.</p> <p>Obj 6: Conversion to agriculture is a major contributor to loss of forest biodiversity. Given the legal position of Vanuatu's landholders there is scope to further educate landholders about the economic and cultural values of retaining forests, about sustainable land clearing systems and the value of local conservation areas.</p>
b) No		<p>Please provide reasons below</p>

Further comments on measures to reduce threats to, and mitigate the impacts of threatening processes on forest biodiversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

A number of important issues need to be addressed to adequately reduce risks to forest biodiversity in Vanuatu.

- There is need to develop a sustainability framework to guide and regulate conversion of forest lands to agriculture so that stream lines and sloping lands are protected from erosion and biodiversity corridors retained.
- There is a need to establish both *in-situ* and *ex-situ* seed orchards for key tree species to retain genetic materials. While the Department of Forests has a defined strategy there are limited funds to progress this activity.
- There is a need to shift the present focus on trees to take an integrated ecosystem approach to management of forested lands that focuses equally on other living organisms.
- Given the extent of timber harvesting in lowland areas and the speed of reduction of the stand of species such as *Endospermum medullosum* there is a need to identify low-land forest systems for permanent protection. However the government has not been able to devote financial and human resources for this purpose.

177. Is your country undertaking any measures to protect, recover and restore forest biological diversity?

Options	X	
a) Yes	X	<p>Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities</p> <p><u>Obj 1: Restore forest biological diversity in degraded areas.</u> The Forestry Department has been active to promote forest regeneration and replenishment plantings of species that have been over harvested. However, landholders hold an over-riding right to choose their preferred land use, and often choose to convert forest to agriculture systems.</p> <p><u>Obj 2: Promote forest management practices that further the conservation of endemic and threatened species.</u> Under the Code of Logging Practice Vanuatu only licenses selective timber harvesting. During planning of a logging concession trees of custom and biological value are identified for protection. Conservation strategies have been developed for five priority species.</p> <p><u>Obj 3: Ensure adequate and effective protected forest areas networks.</u> There is one registered forest conservation area – Vatthe Conservation Area – and a number of less formal community based conservation initiatives, many of which contribute to Vanuatu’s protected forest network. A GEF funded project that commenced in late 2005 will help assess how effective community conservation areas are in helping to realise biodiversity conservation goals. The project will specifically address the conservation of endemic plant species on the island of Tanna and Gaua.</p>
b) No		Please provide reasons below

Further comments on measures to protect, recover and restore forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Vanuatu’s system of inalienable traditional land and resource tenure and the government’s lack of capacity to acquire land for long term conservation purposes is a major barrier to formalisation of a national network of protected forest areas. Traditional land boundaries rarely conform with ecological units, adjoining landholders may have different goals and requirements, and local conservation measures are normally only for a fixed period of time.

A second barrier is the limited knowledge of Vanuatu’s ecological systems, indigenous species and the extent of genetic variation within individual species. There is a need for a full time scientifically trained officer to coordinate a programme of work to avoid erosion of the genetic pool of Vanuatu’s tree species.

Traditional landholder’s hold responsibility for resource use decisions. There is a need for continued education and information work, and socio-economic work to demonstrate the economic benefits to landholders of retaining, replenishing and regenerating forest ecosystems compared with conversion to agriculture. Such work may require marketing expertise to assess alternate opportunities and put in place appropriate measures for landholders to realise the potential economic benefits.

178. Is your country undertaking any measures to promote the sustainable use of forest biological diversity?

Options	X	Details
a) Yes	X	<p>Please specify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities</p> <p><u>Obj 1: Promote sustainable use</u></p> <p>The Goal of the National Forest Policy (2000) is sustainable use and the Code of Logging Practice (1998) is the principal mechanism for achieving this objective.</p> <p><u>Obj 2: Prevent losses caused by unsustainable harvesting</u></p> <p>The operational guidelines of the Code of Logging Practice (1998) reduce losses from unsustainable harvesting. There are also quotas and annual allowable cuts for timber resources believed to be at risk of over harvesting.</p> <p><u>Obj 3: Enable local indigenous communities to implement adaptive community management systems</u></p> <p>A 10 year GTZ funded project involved landowners in finding the sustainable logging regimes for vegetation types in the Butmas forest. The EU funded LEARN project builds the capacity of landowners to manage natural regeneration after logging.</p> <p><u>Obj 4: Develop information systems and strategies for conservation & use of forest genetic diversity</u></p> <p>The Department of Forestry has established species specific conservation strategies for five high priority timber and fruit tree species: <i>Endospermum medullosum</i>, <i>Santalum austrocaledonicum</i>, <i>Agathis macrophylla</i>, <i>Agathis silbae</i> and <i>Intsia bijuga</i>. However the Department lacks the financial and human resources needed to implement these plans and expand this work to other species.</p>
b) No		Please provide reasons below

Further comments on the promotion of the sustainable use of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

The greatest loss of forest biological diversity comes from landholder decisions to convert forests through sequential logging or clearing to agriculture uses. There is a recognised need for greater collaboration between the Department of Agriculture and Rural Development and the Department of Forestry to develop systems of agro-forestry, and to develop guidelines so that conversion to agriculture allows key biodiversity elements and ecosystem functions to be retained.

The Vanuatu Forest Resource Inventory System was developed over a decade ago and is now out of date. The National Forest Policy (2000) aimed to update and revise the inventory every 10 years. However, the Department lacks the financial and human resources to do this and has not been able to identify donor assistance.

179. Is your country undertaking any measures to promote access and benefit-sharing of forest genetic resources?

Options	X	Details
a) Yes	X	<p data-bbox="427 353 1444 414">Please specify priority actions in relation to each objective of goal 5 and describe measures undertaken</p> <p data-bbox="427 427 1444 544">Timber harvesting operations only proceed where there is agreement from the landowners, who receive a royalty for the timber harvested from their land. The national government receives a forest management charge from the timber harvesters for their overall management of forest operations.</p> <p data-bbox="427 557 1444 645">When there is dispute over landownership the Department of Forestry facilitates the issue of royalty payments to a trust account. Once the dispute is resolved the Department then witnesses transfer of the fund directly to the rightful landowners.</p>
b) No		<p data-bbox="427 676 790 712">Please provide reasons below</p>

Further comments on the promotion of access and benefit-sharing of forest genetic resources. (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets)

Sharing of benefits from timber harvesting is well recognised and organised legal structures are in place. However there is opportunity to extend opportunities to receive benefits from non timber forest genetic resources.

Programme element 2 – Institutional and socio-economic enabling environment

180. Is your country undertaking any measures to enhance the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing?

	X	Details
a) Yes	X	<p>Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities</p> <p><u>Obj 1: Improve understanding of causes of the loss of forest biological diversity</u> Conservation capacity assessments undertaken by the Environment Unit have given some understanding of the causes of the loss of forest biological diversity. Further work is required to fully understand the situation.</p> <p><u>Obj 2: Integrate conservation and sustainable use of biological diversity into forest and other sectoral policies and programmes</u> Conservation and sustainable use of forest biodiversity are explicit goals of the National Forest Policy (2000) and the Code of Logging Practice (1998). The Department of Forestry Conservation Unit has focused on conservation of lowland rainforest and associated species. There remains a need to integrate the goals of conservation of biodiversity into the work of the agriculture sector.</p> <p><u>Obj 3: Develop good governance practices, review laws and plans</u> Governance and management of forest operations has improved significantly in the last decade. Policies, laws and regulations have been reviewed and updated. However, there has been more limited progress toward establishing a permanent forest conservation network. This objective is difficult given Vanuatu's Constitutional provision for inalienable traditional land tenure.</p> <p><u>Obj 4: Promote forest law enforcement and address related trade</u> A Code of Logging Practice (1998) is well observed and enforced by the Forestry Department.</p>
b) No		<p>Please provide reasons below</p>

Further comments on the enhancement of the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Most human settlements and land development are on the lowlands. The extent of lowland rainforest areas have declined rapidly and remaining areas of lowland rainforest are at threat from on-going development activities. Land conversion is perceived to be the greatest threat to forest biodiversity. However, political priority is given to development of formal economic activity and forest conversion is encouraged without regulation. This is an issue has not yet been incorporated into national policies such as the National Biodiversity Strategy and Action Plan.

The country also needs to explore appropriate mechanisms to secure a permanent forest conservation network.

181. Is your country undertaking any measures to address socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity?

Options	X	Details
a) Yes		measures undertaken to address these priorities
b) No	X	<p>Vanuatu has not yet initiated measures to address economic incentives, perverse incentives and incorporation of forest biodiversity values into national accounting systems. These activities are not an immediate national priority and there is not the capacity to address these issues.</p> <p>Research work a decade ago attempted to document the economic value of forest conservation. This work has not been continued.</p>

Further comments on review of socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Lack of capacity, rural poverty and national policies favouring private sector led economic growth are important constraints to work on this objective.

182. Is your country undertaking any measures to increase public education, participation and awareness in relation to forest biological diversity?

Options	X	Details
a) Yes	X	<p>Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities</p> <p>Obj: increase awareness of the value of forest biodiversity</p> <p>The extension work of the Department of Forestry focuses on sustainable management of timber harvesting, forest regeneration and woodlot planting, and has good participation from targeted landholders. The Forest Conservation Unit provides advice and information to assist landholders establish effective local protected areas and promotes conservation and replanting of priority tree species. The Environment Unit Information Officer provides more general information on Vanuatu's biodiversity to raise awareness of its economic, social and cultural significance.</p>
b) No		Please provide reasons below

Further comments on measures to increase public education, participation and awareness in relation to forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Those islands with nurseries and demonstration plots have seen the number of farmers planting trees increasing. The Department of Forestry currently monitors woodlot plantings to document planting activity and to understand farmers' attitudes and opinions.

Programme element 3 – Knowledge, assessment and monitoring

183. Is your country undertaking any measures to characterize forest ecosystems at various scales in order to improve the assessment of the status and trends of forest biological diversity?

	X	Details
a) Yes	X	<p>Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities</p> <p><u>Obj 2: Develop national forest classification systems and maps.</u></p> <p>Australian assistance enabled Vanuatu to prepare a national forest inventory, classification system and GIS, which was extended for wider use in land use planning. This work was completed in the early 1990s. The system is now out of date, and revision of the inventory is a Departmental priority. Vanuatu lacks financial and technical capacity to update the system and donor funding has not been forthcoming.</p>
b) No	X	<p>Please provide reasons below</p> <p><u>Obj 1: Harmonised global regional forest classification system</u></p> <p>Vanuatu lacks capacity to conduct work in this area. Rather focus is on immediate priorities in sustainable forest utilization.</p>
<p>Further comments on characterization of forest ecosystems at various scales (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).</p>		

184. Is your country undertaking any measures to improve knowledge on, and methods for, the assessment of the status and trends of forest biological diversity?

Options	X	Details
a) Yes		<p>Please identify priority actions in relation to each objective of goal 2 and describe measures undertaken to address these priorities</p>
b) No	X	<p>Please provide reasons below</p> <p>Vanuatu lacks capacity to conduct work in this area. Rather focus is on immediate priorities in sustainable forest utilization and management.</p>
<p>Further comments on improvement of knowledge on and methods for the assessment of the status and trends (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).</p>		

185. Is your country undertaking any measures to improve the understanding of the role of forest biodiversity and ecosystem functioning?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below Vanuatu lacks capacity to conduct work in this area. Rather focus of botanical work is on species level inventories, silviculture and regeneration techniques.
Further comments on the improvement of the understanding of the role of forest biodiversity and ecosystem functioning (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		

186. Is your country undertaking any measures at national level to improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biodiversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below Vanuatu lacks capacity to conduct work in this area. Rather focus of botanical work is on species level inventories and silviculture and regeneration techniques.
Further comments on the improvement of the infrastructure for data and information management (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- outcomes and impacts of actions taken;
- contribution to the achievement of the goals of the Strategic Plan of the Convention;
- contribution to progress towards the 2010 target;
- progress in implementing national biodiversity strategies and action plans;
- contribution to the achievement of the Millennium Development Goals;
- constraints encountered in implementation.

Vanuatu has made progress towards the prioritised goals and outcomes of the programme of work on forest biodiversity. However, there are concerns that lowland forest biodiversity remains at risk because of the rapid rate of conversion of low land forests to agriculture. A shift to whole of ecosystem approaches to biodiversity use and conservation would help address this risk, however, institutional structures and the prevailing sectoral focus on a small range of species of subsistence and commercial value remain barriers to realising such a goal.

Biological diversity of dry and sub-humid lands

187. Is your country supporting scientifically, technically and financially, at the national and regional levels, the activities identified in the programme of work? (decisions V/23 and VII/2)	
a) No	X
b) Yes (please provide details below)	
Further comments on scientific, technical and financial support, at the national and regional levels, to the activities identified in the programme of work.	
Dry and sub-humid lands are not applicable to Vanuatu.	

188. Has your country integrated actions under the programme of work of dry and sub-humid lands into its national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD? (decisions V/23, VI/4 and VII/2)	
a) No	X
b) Yes (please provide details below)	
Further comments on actions under the programme of work of dry and sub-humid lands integrated into national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD.	
Dry and sub-humid lands are not applicable to Vanuatu.	

189. Has your country undertaken measures to ensure synergistic/collaborative implementation of the programme of work between the national UNCCD process and other processes under related environmental conventions? (decisions V/23, VI/4 and VII/2)	
a) No	
b) Yes, some linkages established (please provide details below)	X
c) Yes, extensive linkages established (please provide details below)	
programme of work between the national UNCCD processes and other processes under related environmental conventions.	
The GEF funded National Capacity Self Assessment is identifying options for greater links between the operations of the various multilateral environmental conventions to which Vanuatu is signatory.	

Programme Part A: Assessment	
190. Has your country assessed and analyzed information on the state of dryland biological diversity and the pressures on it, disseminated existing knowledge and best practices, and filled knowledge gaps in order to determine adequate activities? (Decision V/23, Part A: Assessment, Operational objective, activities 1 to 6)	
a) No	X
b) No, but assessment is ongoing	
c) Yes, some assessments undertaken (please provide details below)	
d) Yes, comprehensive assessment undertaken (please provide details below)	

Further comments on the relevant information on assessments of the status and trends and dissemination of existing knowledge and best practices.

Dry and sub-humid lands are not applicable to Vanuatu.

Programme Part B: Targeted Actions

191. Has your country taken measures to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences? (part B of annex I of decision V/23, activities 7 to 9)

a) No

X

b) Yes, some measures taken (please provide details below)

c) Yes, many measures taken (please provide details below)

Further comments on the measures taken to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences.

Dry and sub-humid lands are not applicable to Vanuatu.

192. Has your country taken measures to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work?

a) No

X

b) Yes, some measures taken (please provide details below)

c) Yes, comprehensive measures taken (please provide details below)

d) Yes, all identified capacity needs met (please provide details below)

Further comments on measures taken to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work.

Dry and sub-humid lands are not applicable to Vanuatu.

Box L.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Dry and sub-humid lands are not applicable to Vanuatu.

Mountain Biodiversity

Programme Element 1. Direct actions for conservation, sustainable use and benefit sharing

193. Has your country taken any measures to prevent and mitigate the negative impacts of key threats to mountain biodiversity?

a) No	X
b) No, but relevant measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to prevent and mitigate the negative impacts of key threats to mountain biodiversity

Vanuatu's mountain ecosystems over 1,000 m are small in extent, inaccessible and support a small indigenous population that practices traditional subsistence farming, supplemented by hunting and gathering of wild resources. While they support significant biodiversity the threats to mountain ecosystems are considered low. Conservation and resource management work has focused on lowland areas.

194. Has your country taken any measures to protect, recover and restore mountain biodiversity?

a) No	X
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to protect, recover and restore mountain biodiversity

195. Has your country taken any measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems?

a) No	X
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems

196. Has your country taken any measures for sharing the benefits arising from the utilization of mountain genetic resources, including preservation and maintenance of traditional knowledge?

a) No	
b) No, but some measures are being considered	X
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures for sharing the benefits arising from the utilization of mountain genetic resources

There are no initiatives specific to mountain biodiversity, but mountain biodiversity is included within on-going work to record and use traditional knowledge within resource management.

Programme Element 2. Means of implementation for conservation, sustainable use and benefit sharing

197. Has your country developed any legal, policy and institutional framework for conservation and sustainable use of mountain biodiversity and for implementing this programme of work?

a) No	X
b) No, but relevant frameworks are being developed	
c) Yes, some frameworks are in place (please provide details below)	
d) Yes, comprehensive frameworks are in place (please provide details below)	

use of mountain biodiversity and for implementing the programme of work on mountain biodiversity.

198. Has your country been involved in regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity?

a) No	X
b) No, but some cooperation frameworks are being considered	
c) Yes (please provide details below)	

ecosystems for conservation and sustainable use of mountain biodiversity

Programme Element 3. Supporting actions for conservation, sustainable use and benefit sharing

199. Has your country taken any measures for identification, monitoring and assessment of mountain biological diversity?

a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for identification, monitoring and assessment of mountain biodiversity

Rapid biodiversity assessments have taken place in mountain environments (>1,000M) on Santo and Ambrym. There has been considerable interest by international botanists to collect and identify the flora of mountain environments of Santo. A global biodiversity expedition that will be conducted on Santo Island in 2006 includes further assessment of mountain biodiversity.

200. Has your country taken any measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity?

a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

capacity building for conservation and sustainable use of mountain biodiversity

Vanuatu facilitates the work of international scientists who are helping to document Vanuatu's mountain biodiversity. A global biodiversity expedition to be conducted on Santo Island in 2006 includes assessment of mountain biodiversity.

201. Has your country taken any measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems?

a) No	X
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems

Box LI.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

Mountain ecosystems over 1,000 m are small in extent, inaccessible and support a small indigenous population that practices traditional subsistence farming, supplemented by hunting and gathering of wild resources. While they support significant biodiversity the threats to mountain ecosystems are considered low. They have not been an immediate priority for conservation and resource management work.

E. OPERATIONS OF THE CONVENTION

202. Has your country actively participated in subregional and regional activities in order to prepare for Convention meetings and enhance implementation of the Convention? (decision V/20)	
a) No	
b) Yes (please provide details below)	X
Further comments on the regional and subregional activities in which your country has been involved.	
<p>Vanuatu routinely participates in regional meetings and forum in preparation for Convention meetings and to enhance implementation of the convention.</p>	

203. Is your country strengthening regional and subregional cooperation, enhancing integration and promoting synergies with relevant regional and subregional processes? (decision VI/27 B)	
a) No	
b) Yes (please provide details below)	X
Further comments on regional and subregional cooperation and processes.	
<p>Vanuatu has participated in regional meetings and forum discussing implementation of the UN CBD and participated in regional initiatives to build capacity to address provisions of the UN CBD. Vanuatu maintains a strong commitment to such work.</p>	

The following question (204) is for DEVELOPED COUNTRIES

204. Is your country supporting the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes? (decision VI/27 B)	
a) No	
b) No, but programmes are under development	
c) Yes, included in existing cooperation frameworks (please provide details below)	
d) Yes, some cooperative activities ongoing (please provide details below)	
Further comments on support for the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes.	

205. Is your country working with other Parties to strengthen the existing regional and subregional mechanisms and initiatives for capacity-building? (decision VI/27 B)	
a) No	
b) Yes	X

206. Has your country contributed to the assessment of the regional and subregional mechanisms for implementation of the Convention? (decision VI/27 B)

a) No

b) Yes (please provide details below)

X

Further comments on contribution to the assessment of the regional and subregional mechanisms.

Vanuatu has participated in regional consultations, meetings and forum reviewing regional and sub-regional implementation of the UN CBD.

Box LII.

Please elaborate below on the implementation of the above decisions specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.

F. COMMENTS ON THE FORMAT

Box LIII.

Please provide below recommendations on how to improve this reporting format.

The format for the third report to the Conference of Parties is unduly long. Similarities between the goals, targets and thematic issues selected lead to un-necessary overlap and repetitive reporting. Further, the length and nature of the format creates a barrier to achieving broad inputs and fostering discussion about content of the report. More selective and focused reporting would be appropriate.

The classification of priorities and other lists is subjective limiting the meaningfulness of any comparative analysis. It would have been preferable to have indicative benchmarks to guide countries toward consistent application of the classifications.

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