

ECOREGION PLANNING AND CONSERVATION IN FIJI FOR A SUSTAINABLE OCEAN

(From planning to mobilization into action)

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Background

Global conservation efforts in general for much of the past decades have always tended towards being site or species based however as biodiversity across the globe increasingly comes under threat from human development, such efforts though commendable still appear fragmented. This creates a dilemma for conservationists in determining which of the countless number species and habitats existing, should efforts focus upon as their disappearance accelerates. Part of addressing this issue, the need to prioritize conservation efforts, has led WWF though collaboration with international scientific experts to the identification of 238 biologically outstanding areas on the planet, often referred to as the Global 200 or G200. These identified areas will provide a critical blueprint for conserving biodiversity at the global scale. Each biologically outstanding area identified on the globe is referred to as an **ecoregion** (ecological region), defined as large terrestrial, freshwater or marine units that encompass unique habitats, species, ecological processes and dynamics. By conducting conservation on an ecoregional scale, not only does it become compatible with the manner in which ecosystem processes function and operate, (the bridgework that binds species and habitats together) it provides for a holistic approach for strategic action across all levels albeit it being at the international, regional, national or local level.

Fiji Islands Marine Ecoregion

The Fiji Islands Marine Ecoregion (FIME) is one of forty-three global marine ecoregions listed amongst the G200, and one in three identified within the South Pacific region, the other two being the Bismarck-Solomon Seas Ecoregion (BSSE) and the East Polynesia Ecoregion (EPE).

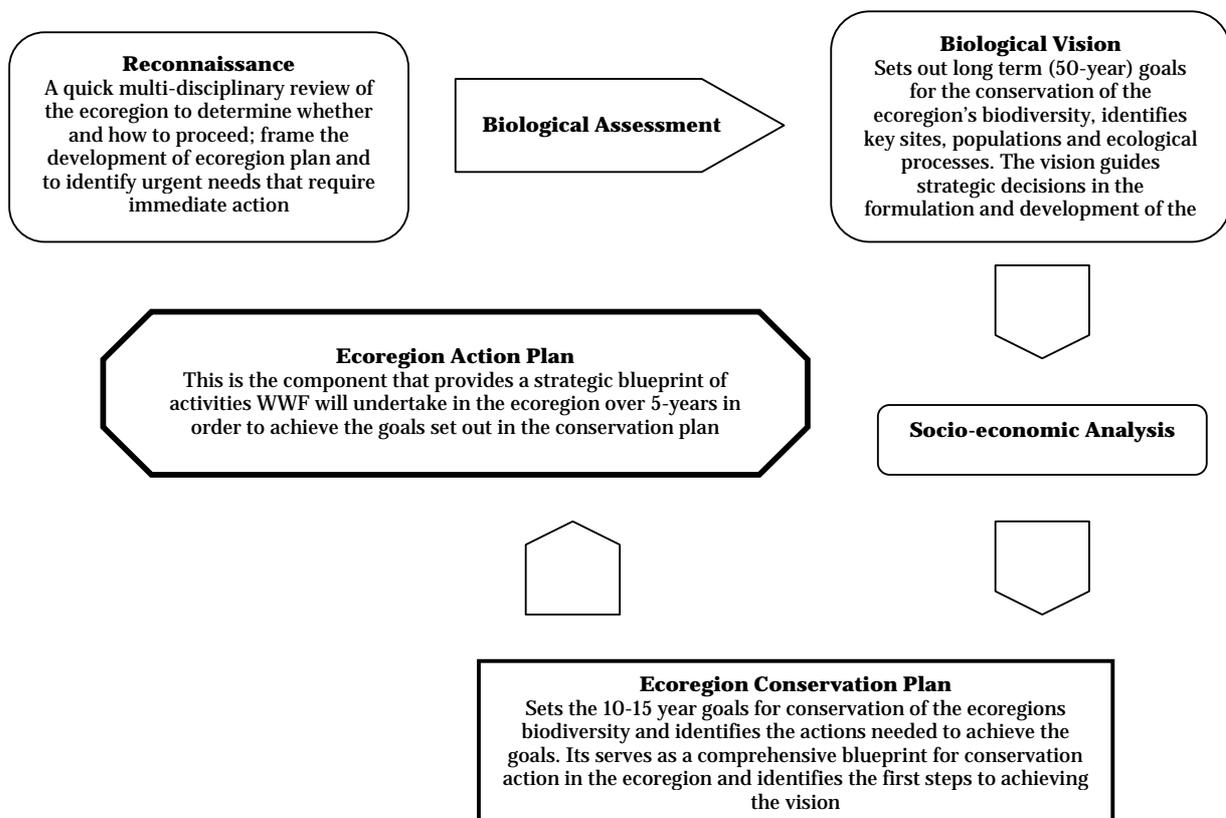
The Fiji Islands Marine Ecoregion hosts the third longest barrier reef in the world, the 150km Great Sea Reef and encompasses the eastern most portion of the Coral Triangle, a natural demarcation for high coral diversity. Fiji's 322 volcanic, limestone and sand cay islands are surrounded by an estimated one thousand different coral reef ecosystems, placing it amongst the top ten of the worlds eighty nations with globally significant reefs.

By virtue of its geographical location, the Fiji Islands Marine Ecoregion is considered the crossroads of the Pacific as it contains apart from a diverse array of coral reefs, large expanses of coastal wetlands, mangroves, mudflats, sea-grass meadows, algal beds and lagoons. Encompassed within this vibrant ecological framework are over 390 coral species in complex coral systems housing over 1200 varieties of fish and a multitude of invertebrates. Mangrove and sea-grass habitats act as breeding and feeding grounds for the various species of fish, invertebrates, reptiles and seabirds of this ecoregion. The open sea within this region also maintain viable offshore fisheries and is the ancient traffic route for migratory populations of humpback whales, leatherback turtles and great shoals of tuna. However, the unique natural characteristics of this marine ecoregion is slowly coming under threat from both human and natural forces, such as rapid population and urban growth, environmentally degrading land based activities, unsustainable fishing practices fueled by expanding commercial interests, inadequate scientific information to base resource use decisions on, legislations and national administrative frameworks for proper decision making and control systems and the ever increasing threat arising from the global phenomena, enhanced human induced climate change. It is partially due to the highlighted uniqueness and the ever growing number of threats to this uniqueness in the ecoregion that WWF-Fiji Country Programme is making concerted efforts to the planning and conservation of the existing marine biodiversity it contains.

Although the underlining foundation for the FIME programme is to conserve and strengthen the integrity of biodiversity in Fiji's marine environment, a further primary objective of the programme is to ensure that marine conservation is mainstreamed or aligned with national development goals ensuring they address national human development issues and sustainability. Fiji's national economy is heavily reliant on its marine environment as indicated from fisheries and tourism sector foreign exchange earnings, reaping a combined total of over F\$600 million in 2002. A healthy marine environment is essential to both these industries as earnings from fish products is projected to increase 5% by 2005 and for tourism an increase to F\$1 billion by 2006. Furthermore estimates of the ecological services provided by the marine environment and related marine ecosystems is valued annually at F\$881 million, a fact that is not accounted for in national budgets. It is also important to consider that in future there is a high probability of added pressure on Fiji's marine environment to fuel national growth as the existing sugar industry faces uncertainty in maintaining preferential price treatment with the European Union. In essence because Fiji's national development and marine biodiversity are intricately meshed, both need to compliment each other in an integrated framework that not only sustains national growth but is also suitably conducive for conservation to work at a level as broad as the ecoregion.

Ecoregion Process

Before a comprehensive strategy for any ecoregion can be developed, a systematic process (ecoregion action programme) with specific phases is undertaken to establish goals and targets through a comprehensive integration of biological and socio-economic information delivered through experts. More importantly the phases lay the foundation for establishing relationships with stakeholders, partners and donors who are integral to undertaking successful action in the implementation of the Ecoregion Conservation Plan. This process highlighted in the diagram below revolves around four key elements, the reconnaissance study, the biodiversity vision, the ecoregion conservation plan and the ecoregion action plan.



The reconnaissance is the first phase of the ecoregional initiative and is simply a multidisciplinary rapid assessment of the ecoregional landscape to determine whether and how to proceed. This phase entails a quick assessment of the ecoregion's biodiversity, threats and opportunities for conservation, the current status of existing conservation efforts, a preliminary list of key players and the potential role of WWF. This assessment is achieved through the review of relevant literature and consultations with experts, selected stakeholders and key institutions and should yield the following

- *Whether WWF supports and will proceed with the ecoregion initiative, judging through the necessity for the initiative and the prospects of developing a programme for it.*
- *Upon deciding to proceed- A process for developing the ecoregion plan and gauging the involvement of stakeholders and potential partners from the onset of the initiative*
- *Identification of urgent threats and opportunities that will affect the long term plans of the ecoregion initiative and to immediately take action.*
- *Basic information needed for developing funding proposals for a conservation programme in the ecoregion.*

The second phase the biodiversity vision articulates the aspirations for conserving and restoring the biodiversity of the ecoregion. It guides those working on conservation in the ecoregion to set out what is truly necessary to effectively conserve the biodiversity contained therein. The vision usually has a horizon for 50 years or more depending on the relative state of the ecoregion. Though setting long term goals for biodiversity conservation, such as a 50year horizon may seem ambitious the vision however acknowledges that through the collective will, support and effort of those contributing to the ecoregion initiative, anything is possible.

The biodiversity vision embraces four fundamental conservation goals:

- *the representation of all distinct natural communities*
- *the maintenance of ecological and evolutionary processes*
- *the maintenance of viable populations of species*
- *resiliency in the face of large-scale periodic disturbances and long term change.*

The biodiversity vision is developed through a biological assessment which is done through the broad participation of experts who consolidate biological information to identify priorities for achieving the four goals fundamental to the vision. The assessment includes the analysis of the distribution of species and communities over landscapes, ecological dynamics and biophysical processes that sustain them. It also takes into consideration the relative rarity of different communities, the various keystone habitats and species, sites that offer native biodiversity the best chance of persistence or those that that should be considered priority for restoration, ecological mechanisms conducive to high biodiversity and primary threats to biodiversity in the ecoregion. By synthesizing the analyses, the assessment achieves two major outputs

- a portfolio of priority sites or areas that are representative and contribute to the long term persistence of biodiversity throughout the ecoregion
- a listing of broader priorities for conserving and restoring the integrity of ecosystems, species populations and large scale ecological phenomena such as migratory routes.

Once the biological assessment for choosing areas of biological significance within the ecoregion is complete, it must then be integrated with a parallel socio-economic assessment. This second assessment builds in the human component of the ecoregion, addressing the social, economic and political nature that impact upon it. As this very nature is complex, a clear and thorough understanding of the historical trends leading up to the current human geography of the ecoregion and the political, institutional, cultural and economic parameters that currently exist and will shape its future is needed. This understanding is the basis for what is termed a situation analysis, which examines threats to biodiversity, initially identifying proximate causes then eventually probing to uncover the ultimate or root causes to biodiversity loss. The outputs of this analysis include:

- a portfolio addressing key threats and root causes, opportunities and various options for action, tradeoffs and incentives and appropriate points for intervention.
- A framework conducive to the formation of multidisciplinary teams and partnerships that will enable an integrated approach and effort to address key threats.

The third phase involves the translation of biodiversity goals into an ecoregional conservation plan derived from the findings of both the biological and socio-economic assessments. The ecoregion conservation plan sets 10-15 year goals for conservation of the ecoregion's biodiversity and identifies the actions needed to achieve those goals. The plan must be both comprehensive, to enable its employment by those involved in conservation work in an ecoregion and be dynamic allowing for further amendments and updates as knowledge and experience expands and is acquired throughout implementation. The Ecoregional Conservation Plan specifically encompasses the following:

- Establishing meaningful benchmarks, in the form of goals, setting the path for achieving the biodiversity vision.
- Addressing changes that must occur in order to make the biodiversity goals possible
- Identification of uncertainties and gaps in knowledge that become priorities for testing and research as the plan is implemented.

The fourth and final phase refers to the ecoregion action programme. Once the blueprint defined in the Ecoregion Conservation Plan sets out what needs to be done to conserve the ecoregion's biodiversity, the Ecoregion Action Plan then specifically defines exactly what WWF and its partners will do to ensure that the needs are addressed. This action plan is developed through a strategic analysis which reviews WWF's and other conservation partners' activities and effectiveness within the ecoregion. The analysis considers activities such as education and awareness, capacity building, community based conservation and national development projects, policy and legislative reform and international actions. In doing so it clearly outlines what activities can be done by WWF and by others, by forging formal partnerships with local communities, NGO's government, academic institutions and donors. The overall output of the Ecoregion action plan describes specific targets for WWF and its partners and the actions they must undertake to achieve those targets. Furthermore the Ecoregion Action Plan must incorporate and demonstrate-

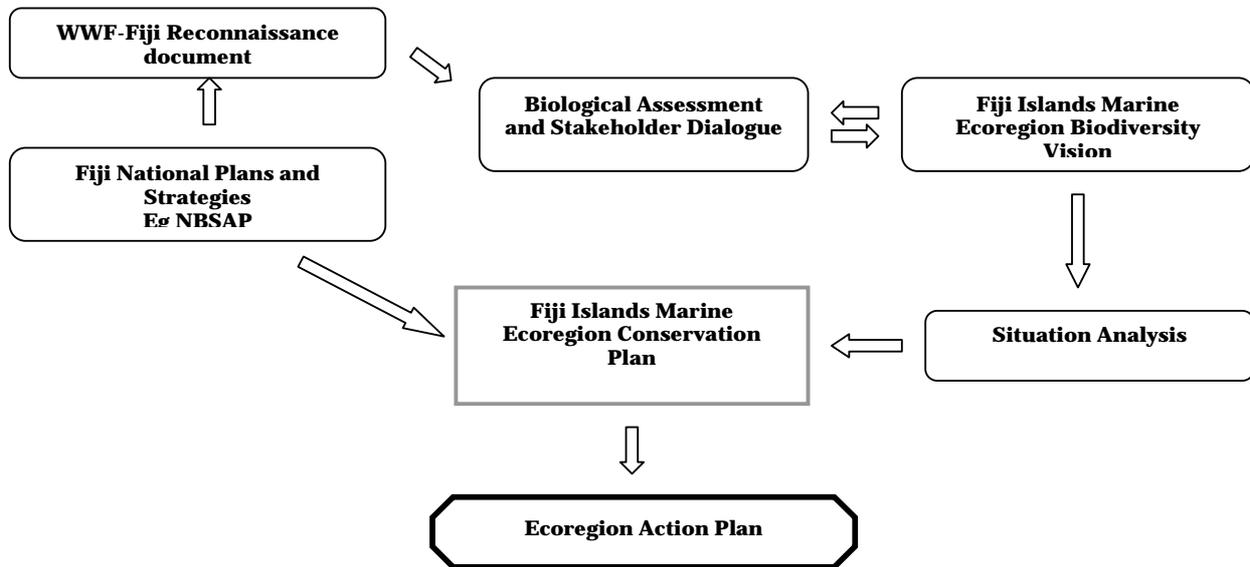
- Adaptive management, enabling the use of different action strategies
- An investment in monitoring key indicators for the ecoregion as a whole and a regular evaluation of each line of action taken
- A system that synthesizes the first two points which will enable necessary revisions of the Ecoregion Action Plan, the Ecoregion Conservation Plan and the Biological Vision.

The Fiji Islands Marine Ecoregion Process

As earlier highlighted the Fiji Islands marine environment has been identified as globally outstanding by virtue of the biodiversity and ecological processes it contains. The case of the Fiji Islands Marine Ecoregion (FIME) is unique in the sense that it is not plagued with trans-border issues such as its sister programme the Bismarck-Solomon Seas Ecoregion which spans three nations nor does it face the severity of environmental degradation currently faced in many areas of Asia and western Melanesia. However, it must be acknowledged that threats such as unsustainable land use practices, over-exploitation of marine resources and rapid environmental degradation resulting from increasing urbanization have not been kept in check and are becoming a major area of concern as it not only threatens the future viability of the marine ecoregion as a whole but also places Fiji in an economically precarious position (when considering only 1.4% of Fiji's total political boundary is land and of this 0.001% is arable land).

It is due to this knowledge that the WWF-Fiji Country Programme has since mid 2002, actively begun to drive the process for developing an ecoregion initiative or programme for sustaining Fiji's marine environment. As discussed in the previous section the process appears very straight

forward but because Fiji has many key players, many existing and developing national conservation strategies and an immensely gaping lack of data for many sections of the ecoregion, the overall process may appear slightly different, however the expected result albeit slight modifications in the process still remains a comprehensive Conservation Plan for the Fiji Islands Marine Ecoregion. This modified process is illustrated below.



As Fiji already has a number of national strategies that address the need for conservation and sustainable management of marine biodiversity and resources, the illustration shows that these strategies must and have been incorporated as a component into the WWF-Fiji's ecoregion planning process at both the initial and third phase. At the reconnaissance phase the WWF document builds on what is already there and by the third phase ensures that when the FIME Conservation Plan is developed, national plans and strategies have been accommodated and aligned to it. This is because WWF-Fiji has no intention of reinventing the wheel by developing a totally new and isolated plan but add value to those currently exist.

Significance of the Fiji Islands Marine Ecoregion Conservation Plan

Before delving into the significance of the FIME Conservation Plan, one need's to take into account the various existing national action plans and strategies that relate directly and indirectly to the marine environment. These include the National Biodiversity Strategy and Action Plan (NBSAP), the Strategic Development Plan 2003-2005, the Tuna Management Plan, the Tourism Strategic Plan, the Fisheries Strategic Plan and the Forestry Strategic Plan. What the FIME Conservation Plan will actually do is ensure that all of these existing plans are synthesized into its framework during the prioritisation process (priority actions and areas determined by national and international experts), the first to be undertaken in the country on a scale as large as the ecoregion. Furthermore partnership forging through such a process will consolidate quality implementation of these plans to ensure the downward spiral of marine biodiversity is reversed.

Many of Fiji's national plans and strategies arise out of the country's commitments to international conventions, treaties and agreements. The National Biodiversity Action Plan (NBSAP) was for instance developed in response to its obligation under the Convention for Biological Diversity (CBD) which the country ratified in 1992. This plan is particularly important as it correlates to much of what the FIME Conservation Plan is attempting to achieve. The NBSAP makes a thorough assessment of Fiji's natural environment, denoting within it as a component the significance of Fiji's marine environment, its biodiversity, state of existing knowledge, valuation of

benefits derived from it, trends in current biodiversity utilization and the need for marine biodiversity management and protection. The NBSAP further highlights six focal areas for sustaining biodiversity in Fiji, the third being the need to develop protected areas on the basis of ecological knowledge and biodiversity values. What the ecoregion approach will do is add a critical element in the form of a biological vision to the NBSAP. This will add value to its existing work by reassessing the sites identified and selected under the NBSAP in context to ecological and biological value with the aid of national, regional and international scientific experts. Furthermore the identification of additional sites of significance worthy of conservation will be highlighted such as marine species migratory routes and feeding grounds, spawning aggregation sites and pelagic offshore fisheries.

Another important Convention that Fiji is party to, is the United Nations Convention on the Law of the Sea which it signed and ratified in 1982. Fiji under the convention is granted sovereign rights for the purpose of exploiting, conserving and managing the living resources within its EEZ and is given state jurisdiction with regard to the protection and preservation of its marine environment. There is a specific section that highlights some of the issues the Ecoregion Conservation Plan wishes to encompass in its framework. Under section 145 of the agreement Fiji must adopt appropriate rules, regulations and procedures for two specific reasons; 1) *the prevention, reduction and control of pollution and other hazards that will interfere with the marine environment and its ecological balance*, 2) *the protection and conservation of the natural resources within Fiji's EEZ and the prevention of damage to the flora and fauna it contains*.

Some of the conditions defined under UNCLOS regarding rights, conservation and exploitation of fish stocks are currently addressed under Fiji's national legislation such as the Marine Spaces Act 1978 (Cap.158), Continental Shelf Act 1978 (Cap.149) and Fisheries Act 1992 (Cap.158). In addition Fiji has developed a Tuna Development and Management Plan centered on those aspects defined under UNCLOS and the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific. The second convention establishes the principles and procedures for co-operation between coastal states and fishing states for the conservation and sustainable management of the region's tuna resources to which Fiji is a signatory. Fiji's Tuna Development Management Plan and its "draft" *National Fisheries Authority Act 2002* ascribes to key issues such as a viable and sustainable local tuna industry by recognizing the need to manage tuna fisheries along conservation lines. By attempting to synthesize the drive for economic development within the tuna industry and maintaining viable tuna stocks, outputs of the ecoregion process become an effective decision making tool. For instance, from the development of the Fiji Islands Marine Ecoregion Biodiversity map and database, policy makers can utilize the information such in the database to create a graphic description of areas of overlay and therefore use the information for the purpose of effective resource management particularly in areas where a number of different tuna species occur. The information can be used to highlight areas for concentration of tuna species including resident species, distribution, movement patterns, and areas of high to low fishing effort. Having this sort of information not only encourages and promotes ecosystem-based management goals and activities but also creates fisheries development opportunities for the government

Using the Fiji Islands Marine Ecoregion map as a decision tool is not delimited only to fisheries plans, the map cross cuts into many sectors of the economy for example tourism. Under the current National Tourism Plan a sustainable development strategy is required to develop coastal zone management systems. The FIME vision map potentially helps this strategy by identifying the priority coastal areas to implement sustainable management systems and should areas be marked high priority with regard to marine biodiversity, the need for a thorough environmental impact assessment before any development in the area occurs. The map also contributes to eco-tourism venture planning which is part of this strategy. The Fiji Islands Marine Ecoregion map in essence identifies and prioritizes areas in the marine environment that are considered biologically significant with regard to biodiversity and natural resources, which can be used as a tool to focus conservation efforts.

Fiji Islands Marine Ecoregion and the Pacific Islands Regional Ocean Policy

In many ways both FIME and the Pacific Islands Regional Ocean Policy compliment each other. The first emphasizes sound marine conservation management and resource use at a national scale while the latter ascribes to a similar sentiment at a regional scale that will perpetuate viable and healthy economies, people and marine biodiversity within the Pacific, now and into the future. Currently Fiji has various national plans that in many ways highlight sustainable economic development- creating opportunities, national growth and stability etc, this realistically cannot be achieved without a healthy marine environment which is what the ecoregion vision will attempt to capture. The ecoregion vision becomes the benchmark for conservation of the marine environment in Fiji over the next 50 years. Fiji own attempt to develop sound conservation management for its own national security, is part of the whole jig-saw that makes up what the Ocean Policy is attempting to achieve under its five guiding principles. In many ways Fiji as a national entity and with the development of the Fiji Islands Marine Ecoregion are already moving towards the Pacific Islands Regional Ocean Policy's vision ***“A healthy ocean that sustains the livelihoods and aspirations of Pacific Island communities”***