Resource Mobilization Information Digest N° 119 May 2013

Sectoral Integration of Biodiversity in Federated States of Micronesia

Contents

1. Introduction

Federated States of Micronesia reviewed[1] ongoing FSM efforts to integrate biodiversity conservation and sustainable use into relevant sectoral and cross-sectoral plans, programmes and policies as required by Article 6 (b) of the Convention. This is what is otherwise referred to as mainstreaming. Clearly, achieving the objectives of the Convention, and in particular the 2010 target and goals and objectives of the Strategic Plan, will be impossible without engaging the main sectors and key actors that have impacts on the conservation and sustainable use of biodiversity. As such, we will here attempt to identify as best as possible the processes by which biodiversity has been integrated into these sectoral and cross-sectoral strategies and plans and relevant measures taken by various levels of government and other stakeholders.

It should be noted at the outset that while the FSM has made conscious strides in this regard, there is much work yet to be accomplished due to a number of factors, the greatest of which is likely the fact that prior to 1999, environment was considered a crosscutting sector by the FSM National and State governments, and was dealt with as such. However, the planners of the 1999 FSM Economic Summit agreed to consider environment as a stand-alone sector. During the Summit, about thirty representatives of State and National government, as well as several NGOs and community representatives, developed an Environment Sector policy matrix that included the following policy elements:

- Encourage States to establish and support a system of conservation areas where special measures are taken to conserve biological diversity
- Create sustainable financing mechanisms for environmental and sustainable resource initiatives
- Expand and promote the Environmental Ethic
- Support the development of environmental NGOs and CBOs
- Create strong regulatory climate when and where appropriate
- Improve cooperation and coordination between different levels of government
- Develop technical support for existing and future environmental programs

[1] Micronesia (2010). Fourth National Report, FSM Department of Resources & Development, March 2010, 202 pp.

The Environment Sector was further recognized and supported when the FSM Joint Compact Negotiating Committee and the US Government agreed to establish environment as one of the six focal sectors under the amended Compact of Free Association in 2000. A tentative budget of $2 million/year was agreed on in principle, which has since then been made more flexible. So although it was an excellent decision to recognize the environment as an issue important enough within the overall development context of the nation to be prioritized as one of the six priority sectors for annual Compact II funding, it has also had the effect of compartmentalizing the environment into a category and therefore often lessened the focus on the need for full cross-sectoral and cross-policy consideration.

This report will also bring up the discussion of what is known as the ecosystem approach, which is the central theme of the CBD and the underlying factor in the principle of mainstreaming. The ecosystem approach is simply valuating the environment into all development decisions the same as one would valuate economic or social outcomes in development prerogatives. This will lead to a final summary analysis of Convention outcomes achieved through effective implementation of this approach.

Furthermore, this report will also elaborate briefly on whether biodiversity has been included in FSM environmental and strategic impacts assessments, which is a crucial step to ensure that policies, laws, programmes and projects that may have adverse impacts on biodiversity will be amended or prevented. The collective municipal, state and national policy framework – and effective implementation – surrounding protection of biodiversity and natural resources is imperative; it is an attempt to regulate the desire for immediate gain for long term stability, in the social, economic and environmental realms.

Finally, this report will also address other national and sub-national strategies, programs, plans and to the degree relevant, assessments that point toward policy through solid recommendations. These will include issues related to poverty reduction, national plans for achieving Millennium Development Goals, the national Strategic Development Plan, national action plans to combat desertification, land degradation, climate change, energy issues, waste management and other such strategies.

2. Integration of biodiversity into sectoral strategies and plans

The National Strategic Development Plan (2004-2023) (SDP) is the document which guides all ensuing sectoral strategies and plans in the FSM. This section will thus be organized around the major focal areas of the SDP, which are agriculture, fisheries, tourism, environment, health, education and gender. These focal areas are integrated into the six priority sectors for funding over the 20-year period of the amended Compact between the FSM and the U.S., and they are private sector development, public

sector capacity building, education, health, environment and infrastructure. The questions that should thus be answered here are, do these primary, underpinning sectors that guide the development of the FSM over the long term have any specific action plans, and more importantly, if so, do they integrate biodiversity considerations into their overall implementation? Those sectors where the answer to both is in the affirmative are reviewed below.

The NBSAP themes – and thus the priorities of the convention – are contained with the SDP, in the Environment strategic planning matrix. The environmental strategy contained within the SDP, as implemented by the various institutions within the country, seeks to mainstream biodiversity considerations through a myriad of broad individual[2], systemic and institutional means. The primary implementation and monitoring body established at the national government is the President's Environmental Management and Sustainable Development Council (SD Council). The SD council is an interdepartmental, intra-agency advisory board chaired by the Vice President of the nation. The SD Council includes representatives from the public and private sectors, non-governmental organizations and other interest groups, including state-designated counterpart departments to take on the responsibilities of coordinating many of the SDP and NBSAP activities for their respective state-level action plans.

Each of the sectors has principal units, offices or departments at the national government level that coordinate the relevant activities with the state government counterparts, and to a lesser degree, with NGOs. This process is followed for each of the sectors under the amended Compact. As a generalization, most sectors do as a matter of course attempt to ensure that ecological function and conservation measures are integrated into annual project plans and programs, however, a better integration of biodiversity considerations is still required across the range of relevant development sectors in the FSM.

The FSM does have several policies and plans in place that are relevant to the discussion here. How they integrate environmental considerations will be discussed more fully in each applicable section below. Perhaps most significant is the FSM Infrastructure Development Plan (IDP), the document that lays out the state and national priorities for all major infrastructure development through 2023. The IDP

[2] As an example, Strategic Goal 8 for the national environment strategy, to *create sustainable financing mechanisms for environmental and sustainable resource initiatives*, has as an outcome to develop "at least 10 new FSM conservation/environment leaders by 2010", through various educational, peer learning, and other training activities (SDP 2003).

has profound implications for biodiversity considerations in the nation over the long term, and how well the IDP incorporates these considerations in implementation will largely determine the overall achievement of the convention goals. The FSM is also in the process of developing its draft National Millennium Development Goals report, integrating and localizing the eight MDG goals into national and state sector plans and strategies, including MDG Goals 1 and 7, poverty reduction and environment, respectively. The FSM has also recently completed a draft Climate Change Policy (January 2010) and it has been submitted to all executive branch departments and offices to integrate the provisions of the policy into each of the sectors so that climate change is addressed in a mainstreamed fashion. These sectoral action plans will be under the purview of four offices: Office of Environment and Emergency Management (OEEM), Department of Resources and Development ((R&D), Department of Transportation, Communication and Infrastructure (TC&I), and the National Oceanic Resource Management Agency (NORMA).

As for the same principle of sectoral planning and responsibility for the goals of the Convention (NBSAP) throughout the planning and implementation of programs, this is something that is ongoing in the FSM, with each administrative unit working toward integrating the objectives of the conservation and sustainable use of biodiversity as key programming principles. OEEM and R&D are principally responsible for this on a day to day basis at the national government. Significantly, implementation of the NBSAP throughout the FSM is spearheaded by the state NGOs, with national guidance and oversight increasingly being assumed by the Micronesia Conservation Trust (MCT). Established as a financing mechanism for conservation initiatives and long-term achievement of the Convention goals and the 2010 Target, MCT has been a major policy element accomplishment for the nation.

Micronesia Conservation Trust

Beginning in February 2001, in response to a recommendation from the 1999 Economic Summit, a group of 18 private and public sector leaders from the four FSM states - collectively representing the national government, state and municipal government agencies and legislatures, private businesses, local NGOs, and traditional leaders - formed a steering committee to create the MCT as a sustainable source of funding for activities to realize the goals of the country's environment strategy. The steering committee met with representatives of two other trust funds in the region—the Foundation for the Philippine Environment, and the Papua New Guinea Mama Graun Conservation Trust Fund. In board meetings

Taking into account some of the weaknesses and obstacles to effectively achieving the mainstreaming of the environmental ethic in all socio-economic considerations of development, the FSM has developed a National Assessment Report toward formulation of an integrated National Sustainable Development Strategy that partially relies upon the ecosystem approach. This strategy calls for an improvement in the current set up of the SD Council, giving it an expanded role, with sanction power beyond its current advisory capacity mandated from top leadership in government, private sector and civil society in order to have greater effect and force. This will have the effect of creating more meaningful cross-collaboration and ultimately better sectoral integration of economic, social and environmental plans. The strategy also notes some central issues to effective achievement of the convention goals within the country, chief amongst them is that the "NBSAP was prepared primarily by environmentalists and hence failed to significantly influence economic planning" in a manner that would allow for better integration and sustainability of the mainstreaming effort. Current effort also suggests that the FSM, in order to achieve better socio-eco – enviro integration, that sustainability and environmental concerns should be better linked with socioeconomic priorities and that greater attention to poverty issues must be realized. As such, the FSM has concluded that "the principles of sustainable development in FSM are largely accepted by environmentalists, certain high level government officials, and academics, and are yet to make their way into mainstream economic planning." It further appears that in FSM there is a stronger consensus, including broader public and government support and commitment, around general issues and principles of development than to its specific details, especially one that embraces the integration of economic prosperity and higher levels of social welfare with preserved environment. Based upon key recommendations made, the FSM government and the key institutions involved in sustainable strategy development are now focusing on improving the policy and legal environment for strategic sustainable development planning, and strengthening the government capacity to better manage the process, including the improvement of planning and implementation.

in May 2002, a 3-year strategic and financial plan and a comprehensive fundraising plan were completed and approved. The Micronesia Conservation Trust is set up as a private non-profit corporation with a governing board that include members from national, state, and municipal governments, NGOs, business, and academic institutions. It is working to mobilize funding from a variety of sources to build an endowment from which to provide long-term support for sustainable natural resource management throughout Micronesia. The Trust places special emphasis on building the capacity of Micronesian organizations to design and manage conservation programs. In addition, the MCT provides a forum to bring together the national, state, and local governments with private enterprises and non-government organizations to collectively address the challenges of natural resource management, form public-private partnerships, and share experiences and best practices. MCT is the first such institution in the region.

These actions include: (i) establishment of a commitment to the principles of a sustainable society in constitutional or other fundamental statements of national policy; (ii) revamping the SD Council and integrate National Sustainable Development Strategies into its core business as well as expanding its power and composition; (iii) establish a comprehensive system of environmental law and provide for its implementation and enforcement; (iv) review the adequacy of legal and administrative controls, and of implementation and enforcement mechanisms, recognizing the legitimacy of local approaches; (v) ensure that government policies, development plans, budgets and decisions on investments take full account of their effects on sustainable development; (vi) strengthen the knowledge base, and make information on social, economic, and environmental matters more accessible; (vii) improve exchange of information, skills, and technologies by creating local, state, national, regional and global alliances; (viii) strengthen policy formulation to make them more coherent and to create the right conditions to promote sustainable development; (ix) communicating and mobilizing citizens and business (civil society and the private sector play important roles in sustainable development. Initiatives need to be taken to encourage active involvement of these groups, and to improve the consultation processes and the mobilization of stakeholders); and (x) good governance that creates an environment that is conducive to sustainable development and to the elimination of poverty.

3. Infrastructure

The Infrastructure Development Plan (IDP) has profound implications for biodiversity considerations in the nation over the long term, and how well the IDP incorporates these considerations in implementation will largely determine the overall achievement of the convention goals. There are two fundamental ways in which the IDP will either assist natural ecosystem function in the federation, or conversely, act as a multiplier of anthropogenic threats to the nations' biodiversity, particularly as it relates to displacement or conversely, rehabilitation. Foremost, the IDP is the major component of annual funding to the FSM through the Compact with the United States, and therefore adds significantly to short and medium term economic growth. Additionally, if implemented properly, this far-reaching sectoral plan will also be a significant solution to many of the current urban and rural pollution problems. For example, Water Supply/Wastewater and Solid Waste Management are two of the long term planned investments for the FSM under the auspices of the IDP. Currently, wastewater and sewage are emblematic features of degraded terrestrial and marine environments around the more populated centers of the FSM. The IDP therefore is an excellent tool to address these issues, and effective implementation of the IDP for these components is a necessity: currently the IDP requires that all

infrastructure projects conduct EIA's to minimize run-off and other impacts and that all physical planning incorporate environmental considerations.

Sector	Amount ($ millions)
Water supply/wastewater	141.9
Education	135.4
Roads/pedestrian facilities	120.9
Maritime transportation	88.5
Electric power	81.1
Air transportation	68.4
Solid waste management	40.8
Health	32.5
Government buildings	27.3
Program management	10.7
Total:	**747.5**

Conversely, without proper regulatory environmental oversight, the IDP – simply due to the sheer magnitude of its scope for such small land masses – may also be the cause of further degradation of ecosystems and displacement of species. Roads, airports and government buildings all require massive resource inputs and the displacement – often - of forests and reefs. Effective environmental impact assessments and the application of best alternatives that integrate the valuation of ecosystem services into these projects will help to ensure ecological integrity while providing progressively better services to the populace. Infrastructure projects that have been identified over the initial years of the amended Compact are intended to take into account national interest criteria such as impact on the economy, health and safety of the community, contribution towards development of the FSM workforce, potential for private sector development, viability, sustainability, potential social benefit and *environmental impact and risk exposure*.

4. Fisheries

Fisheries, and their appropriate use and conservation, are the greatest resource the FSM has in terms of fulfilling the socio-economic aspirations of the populace. Indeed, the FSM's long-term prospects for economic self-sufficiency rely on three sectors highly dependent on the continued vitality of the natural environment: fishing, agriculture, and tourism. Tuna in particular are nearly literally the foundation for

communal and national livelihood. Recent estimates for per capita annual fish consumption highlight this, with the numbers ranging from 72 to 119 kg per person per year. Taking the average, it can be assumed that annual per capita consumption is 96 kg, with FSM then having consumed about 10,900 mt of fish. If the population expands 1.85 times between 1999 and 2025, and per capita fish consumption remains the same, about 20,250 mt of fish will be required in 2025. This underscores the value of the ecosystem services that the coastal and marine environments provide.

TABLE: Landings for coastal, offshore and subsistence fisheries in FSM (tonnes)

Island of port	Offshore locally-based	Coastal commercial	Subsistence	Total
Kolonia, Pohnpei	2,000	1,700	650	**4,350**
Weno, Chuuk	250	2,000	500	**2,750**
Colonia, Yap	200	800	500	**1,500**
Lelu, Kosrae	50	200	250	**500**
Other	0	300	3,100	**3,400**
Total:	**2,500**	**5,000**	**5,000**	**12,500**

More specifically, looking at the economic contribution of these ecosystem services, estimated coastal fisheries production and value is approximately 6,243 metric tons (mt) valued at $11,237,400 for subsistence fisheries and 637 mt valued at $1,483,544 for small scale commercial fisheries.

The FSM Statistics Division has suggested that some 490 mt of fish and shellfish worth about $1.2 million was "purchased by local fishing markets" in 1997. The Household Income and Expenditure Survey reported that $18,496,000 was spent by FSM households on fresh and frozen fish, the vast majority of which come from small-scale commercial fishing. Using average fish price information (1999), this equates to 6,323 mt of purchased fish. Extensive fieldwork conducted in this regard in Pohnpei estimated the total coastal fishery production of Pohnpei Island to be about 1,780 mt (75% reef/inshore, 25% pelagic). Of this, 780 mt was attributed to subsistence catch and 1,000 mt to commercial effort (with the proviso that approximately 28% of this was for non-sale domestic consumption). If the catch level reported in Pohnpei (32% of FSM population) was extrapolated to all of FSM, the coastal fisheries catch would be about 5,500 metric tons. However, taking into account population increase and the likely higher per capita catches of the outer islands and Chuuk, a more likely catch estimate is approximately 8,000 metric tons per year. With known increases in fishing effort in recent years and increasing populations, an approximate indication of coastal fisheries production would possibly be in

the range of 10,000 mt. At $2.90 per kg for the commercial catch and $2 per kg of value for the subsistence catch this equates to a conservative value of $24.5 million per year.

As such, most of the management objectives and strategies are related to the protection of the resource base so as to assure continuity of food supplies, or viability of commercial exploitation. In some locations, protecting species from extinction (e.g. turtles) is an objective. Other near-shore fisheries strategies include reef tenure with selective exclusion of outsiders (Yap and some Chuuk locations) and regulation of coastal commercial fisheries by conventional centrally-administered regulations (Pohnpei and Kosrae). There has also been a conserted national effort toward the use of community-driven marine protected areas as a strategy for coastal fisheries management. This is led by the PAN and PIMPAC initiatives spearheaded by the FSM Department of R&D, and MCT, respectively.

Probably the most comprehensive nation-wide initiative on the subject of inshore fisheries management was at the FSM Coastal Fisheries Consortium held in Pohnpei in December 2000, which brought together the primary actors with management policy oversight of the nation's fisheries: the Department of Economic Affairs (now the Department of Resources and Development) Fisheries Division, the Micronesia Fisheries Authority (now the National Oceanic Resource Management Authority) and the National Fisheries Corporation. This consortium recommended and helped to initiate a College of Micronesia AS-level degree training program in fisheries management; an addition to Element 3 of the Inshore Fisheries Policy Matrix to discourage commercial exploitation; a system to monitor and analyze overall fisheries production; and, to incorporate marine environmental stewardship into primary and secondary curriculums for expanded public awareness of marine management.

The FSM also has an existing Tuna Management Plan. The objectives are arranged in two different levels: (1) overall long-term objectives, and (2) specific objectives. The three overall objectives for tuna fisheries management are to ensure that the nation's tuna resources are used in a sustainable way; to obtain maximum, sustainable economic benefits from the nation's tuna resources; and, to promote economic security for the nation through the use of tuna resources. The specific objectives are to ensure that the tuna catch does not exceed sustainable levels; obtain national revenue from foreign fishing access agreements; support development of FSM-owned and/or foreign FSM-based fishing enterprises; encourage investment in enterprises related to tuna fisheries; promote employment opportunities; and, enhance international relationships beneficial to FSM. NORMA implements the provisions of the plan with Congressional oversight, as per its mandates contained in Title 24 of the FSM Code. The species covered by the plan are Skipjack (*Katsuwonus pelamis*), Yellowfin tuna (*Thunnus*

albacares), Bigeye tuna (*Thunnus obesus*), and Albacore tuna (*Thunnus alalunga*). The four tuna species are also covered under several regional management agreements as well as the international agreement, the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, of which FSM is a signatory. The regional management agreements are:

- Harmonized Minimum Terms and Conditions for Foreign Fishing Vessel Access;
- Wellington Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific;
- Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific;
- Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Concern;
- Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery; and
- FSM Arrangement for Regional Fisheries Access.

The FSM Fisheries strategic planning matrix contained within the SDP (Volume II, Appendix B-03, pg. 39) contains five integrated strategic goals for the fisheries sector designed to "ensure maximum economic benefit", are "managed with best practice methodology", "meet subsistence and artisanal needs" and "sustain biodiversity and resource abundance." In addition, the FSM also hosts the international body that oversees the membership and provisions of the Convention, the Western and Central Pacific Fisheries Commission (WCPFC), commonly referred to as the Tuna Commission. As the FSM contains the central geographic position within the region where the last great tuna stocks are, it thus makes sense for it to house such an institution as well. The members of the Tuna Commission include Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America, and Vanuatu. Participating territories include American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, and Wallis and Futuna. Cooperating Non-members include the countries of Belize, Indonesia, Senegal, Mexico, El Salvador, Equador, and Vietnam. Greenpeace often acts in an advisory and unofficial observer capacity to the annual Commission regular session meetings.

The Convention on Fish Stocks, as well as the WCPFC has made progress, with several notable highlights, including the establishment of a proactive fishing Observer Program aimed at 100% coverage of all purse seine fishing vessels in order to monitor and report on all fishing actions of licensed vessels; adopted a measure on what are referred to as non-target species, specifically to identify five key shark species of

thresher shark, oceanic whitetip shark, make shark and blue shark, and strengthen data collection and research on the current situation of sharks; and finally, a crucial and much-lauded achievement: the high seas pocket closures, where fishing vessels will no longer be allowed to fish in high seas pockets adjacent to the Exclusive Economic Zones (EEZs) as a condition of their licenses, with closure of two high seas pockets adopted in December 2008, and the closure of additional high seas pocket areas between latitudes of 20 degrees North and 20 degrees South a year later in December 2009.

5. Forestry

FSM currently has no nation-wide forest policy as such, however there are several initiatives, policies and programs in place that seek to continue to strengthen the safeguarding of the nation's most valuable forests, from watersheds to mangroves. The fact that there is no overarching national policy in this regard is likely due to the strictly adhered to proviso that the forests within each of the states – particularly the high islands – fall under the control and jurisdiction of the state governments, not the national government. The four states of the FSM have strong autonomous rights over their land and near-shore resources, and the forests are certainly no exception. Yet, there are several well-coordinated initiatives facilitated by the national government. One of note eminates out of the FSM's assension to the UN Convention to Combat Desertification and Land Degradation (UNCCD), whereby each of the states is currently implementing various Sustainable Land Management (SLM) initiatives through the local resource departments and conservation NGO's. This program is funded by the UNDP GEF facility (under the LDC-SIDS Portfolio) and being conducted under the supervision of the Office of Environment and Emergency Management (Sustainable Development Unit) at the national capital in Palikir, Pohnpei. The ongoing SLM actions are directly consistent with the mainstreaming process in terms of including the conservation of land and biodiversity in development efforts, as this is actually the primary thrust of the program. Some of the objectives include development of individual, institutional and systemic capacity for sustainable land management practices, mainstreaming of SLM considerations into national development strategies and policies, to improve the quality of (infrastructure) project design and implementation and the development of a national action plan in this regard. States are working on projects that will include the development of integrated watershed management plans, increased forest and land monitoring through surveys and mapping, enhanced utilization of environmental impact assessment technologies available, development of waste management plans, and the identification and rehabilitation of degraded land areas, amongst others. This is a three-year program that should allow the nation to make great strides where it is much needed, and adds to the current efforts to increase the amount of forest under official protection, as part of the integrated ecosystem protected area program of work ongoing within the nation.

TABLE: State endorsed protected areas in FSM, by type		
Protected Area category	**Quantity**	**Area (hectares)**
Watershed/upland forest reserve	2	5,880
Hunting reserve	2	28.7
Marine sanctuaries	12	9,158
Underwater monument	1	6,000
Biosphere reserve	1	1,772
Local marine managed areas	2	38,130
Park	1	6
Marine protected area	1	720
Total number of PA's	**22**	**61,694.7**

Additionally, other policy, capacity, and funding-related forestry prerogatives are ongoing toward the overall effort of mainstreaming biodiversity considerations, including a recent learning exchange between the states of Kosrae and Pohnpei on watershed management and protection facilitated by two of the leading conservation NGOs(KCSO and CSP), a five-year integrated watershed policy protection program for Pohnpei and Chuuk through the national Dept. of Transporation, Infrastructure and Communications, and a US Forest Service strategic initiative facilitated through the national Department of Resources and Development that will conduct state-wide forestry assessments and develop associated forest resource strategies.

6. Energy

Energy is a central and cross-cutting sector in the FSM, particularly as it relates to the current Administration mandate to move toward greater integration of renewable sources of energy into all development projects. In early 2008, the FSM for the first time developed a Renewable Energy Unit in a ramped up Energy Division within the Department of Resources and Development. This unit was effectively implemented through the European Union's 9th European Development Fund, administered by the Pacific Islands Forum Secretariat, which was the first EDF facility that the FSM participated in since signing the EU-ACP Partnership Agreement in 2000. Through the EDF9, FSM was able to begin to integrate renewable energy power into schools, dispensaries and other government buildings on one of the high and several of the main outer-island groups of the nation (see table), thereby reducing not only the carbon footprint, but also the need for expensive and pollutive diesel-powered generators on these islands. This program – Support to the Energy Sector in Five ACP Pacific Islands, or REP-5 – is now drawing to a close and the FSM is well into the planning for the EDF10, which will double in scope and

size and continue to integrate the utilization of alternative, renewable sources of power into society. Expected outcomes of the long-term vision toward less dependence upon fossil-fuel throughout the nation will be to provide affordable and clean power, increase economic activity and opportunity, improve educational opportunities and health services, and reduce government operational costs at all levels. FSM has completed an Energy Efficiency Action Plan and is finalizing its National Energy Policy, a cross-sectoral, cross-cutting policy document.

TABLE : National Renewable Energy Projects under EU-EDF9 in FSM

State	Projects
Chuuk	Outer islands of Onoun, Moch, Udot and Satawan: electrification of schools and health centres by solar PV systems and mini-grids
Kosrae	Five Grid-connected PV systems: The State capitol building; Kosrae international airport; the hospital; Kosrae Utilities Authority and the Legislature building
Pohnpei	Outer islands of Mwoakilloa, Pingelap, Kapingamarangi, Sapwuafik and Nukuoro: electrification of schools & health centres by solar PV
Yap	Ulithi atoll islands of Fadrai and Asor: electrification of schools, health centres and households by solar PV mini-grid
National	Training in off-grid and grid-connected PV-systems; Development of an energy policy; Solar lanterns supply and distribution; Energy efficiency activities (energy officer, energy audits, energy efficiency action plan)

7. Agriculture

The agriculture sector, like fisheries and tourism, is expected to be one of the three primary drivers of economic growth in the FSM over the long term. While, in fact, agriculture, as a collective effort throughout the FSM, already is one of the primary economic activities of the country, in both official and unofficial terms. Indeed, agriculture, as a sector, is likely the most fully socio-eco-enviro integrated sector of all: in its traditional form it carries forward a host of not only biological care and knowledge, but also cultural practices that in many cases provide a balance to daily village life. A full 80% of the FSM populace depends upon subsistence or semi-subsistence agriculture for their livelihoods. Large scale commercial agriculture utilizing industrial methods does not exist. In short, within the nation it is a major part of local economies, providing livelihood and employment to much of the population, but externally it is not a major contributor to export receipts.

Again, the states of the FSM retain control of their land and as such, there is no overarching agricultural policy for the FSM. However, there are local and national programs in scope that effectively act as components of a larger strategic plan to promote sustained and sustainable farming practices for the benefit of health and local diets as well as local economies and income opportunities. The national government has a Division of Agriculture, as do each of the state governments, mandated for overseeing the sectoral activities contained within the national strategic development plan toward this end. The College of Micronesia also has a well-developed extension program that it implements throughout the nation adhering to the guiding goals of the SDP, which are to 1) Enhance a focused agriculture sector operating within a stable policy framework, 2) Support traditional farming systems for home nutritional needs and cash incomes, 3) Increase surpluses to be marketed by private sector into local and regional markets, and 4) Promote environmentally sound and sustainable production. Currently, two nationally-facilitated programs are ongoing that integrate the environmental ethic into agricultural activities in the FSM, and implement the strategic goals of the SDP: the EU-funded Development of Sustainable Agriculture in the Pacific (DSAP) program, which falls under the guidance of the FSM Department of Resources and Development, and the UNCCD Sustainable Land Management program ongoing, which seeks to institutionalize best agricultural practices in tropical ecosystems and to maintain ecosystem services. Finally, there has been extensive awareness-raising, research and monitoring in this sector through the NGO, Island Food Community of Pohnpei, which now has programs throughout the federation in an effort to promote sustainable agricultural practices and diets.

8. Tourism

Tourism in the FSM is a relatively small-scale enterprise (see table) and thus impacts to the natural environment are somewhat minimal. Yet, national ambitions for the tourism sector to help develop the economy remain ambitous, placing this sector at the crux of the biodiversity/development fulcrum. While it remains one of the strategic growth sectors for national economic growth, many people in the wider community in all the states have consistently expressed concerns about potential negative impacts of tourism on both the socio-cultural fabric and the natural environment of the FSM. While the SDP lays out some clear outcomes in terms of growth, there is also a clear mandate for the integration of biodiversity concerns into the sector, with cross-sectoral relationships with the national environmental strategy:

- At least one successful ecotourism enterprise is established for 50 % of all conservation areas in the FSM by 2010, including environmentally compatible economic development enterprises; and,

- Develop in-country sources of funding and investment for environmental and sustainable initiatives, including resource rentals and/or royalties, user fees for tourism activities, environmental bonds for development projects, and special taxes for visitors and tourists.

TABLE: International visitor arrivals to the FSM by nationality

Nationality	1996	2000	2001	2002	2003	2004
Asia	2,029	2,890	2,255	2,680	2,877	3,152
Europe	1,007	1,427	1,235	1,343	1,668	1,353
Japan	5,519	4,661	3,194	4,061	3,984	3,661
Pacific Islands	2,282	2,151	1,589	2,150	1,932	2,425
USA	7,083	8,605	6,966	8,152	7,736	7,101
Other	239	304	255	314	299	312
Total	**18,159**	**20,038**	**15,494**	**18,700**	**18,496**	**18,004**

Despite the FSM's distance from major tourism origin markets and the consequent high cost and inconvenience of travel, the nation offers many attractions for selected niche markets: a pristine marine environment, tropical scenery and diverse plant and bird life, traditional cultures – all in sparsely populated, clean environmental settings outside the district center urban areas. For the sophisticated and experienced tourism markets that are looking for something different, the FSM's isolation is a potential selling point for niche markets such as eco-tourism, cultural tourism, water sports, and other special interests, e.g., traditional plant medicines, bird-watching, and social anthropology. To be sure, ecotourism is perhaps one of the clearest areas where the FSM directly bases ecological considerations as a prerequisite to economic development, and there is a natural competitive advantage.

Eco-tourism focuses on local cultures, wilderness adventures, volunteering, personal growth and learning new ways to live on our vulnerable planet. It is typically defined as travel to destinations where the flora, fauna (both terrestrial and aquatic), and cultural heritage are the primary attractions. Responsible eco-tourism includes programs that minimize the adverse effects of traditional tourism on the natural environment and enhance the cultural integrity of local people. Therefore, in addition to evaluating environmental and cultural factors, initiatives by hospitality providers to promote recycling, energy efficiency, water re-use and the creation of economic opportunities for local communities are an integral part of eco-tourism.

Indeed, excellent examples of such high-end eco-tourism do exist, with the Kosrae Village Ecolodge and Resort and the Pohnpei Village leading the way for many years now. Kosrae Village in particular goes

quite far in terms of its proactive approach to the environment, consistently working with the state on key environmental initiatives, such as the establishment of the vaunted mooring buoy system on the fringing reef around the island, and being a central player in the ongoing coral monitoring program, both of which assist in the protection and monitoring of biodiversity. Kosrae Village Resort has been named as one of *National Geographic*'s Top Fifty Eco Lodges worldwide.

With the expected completion of the enlarging and extension of the Pohnpei International Airport – the primary hub into the nation – by early 2011, direct and larger flights from Asia will become more common, driving the economic growth that the tourism industry in FSM seeks. How environmental considerations are consistently integrated into that growth process will obviously be a large challenge moving forward. Successful tourism must benefit local populations economically and culturally to give them incentives to protect the natural resources which create the attraction. The FSM National government is certainly fully committed to promoting the expansion of eco-tourism activities and services in the context of low-impact and culturally-sensitive tourism toward the end of creating needed income opportunities in communities on a sustainable basis. Inherent in such a policy can be seen the accumulation of the three main goals of the CBD: conservation of biodiversity, sustainable use of its components, and fair and equitable sharing of benefits arising from genetic resources.

The ecosystem approach

Through international co-operation in the context of the CBD, a set of principles and guidelines has been developed for a model known as the *ecosystem approach*, which aims to provide a comprehensive overview for the purposes of planning the conservation, management and sustainable use of natural areas and natural resources. The ecosystem approach stresses the importance of preserving in various ways the natural ecological structures and functions of habitats so as to safeguard beneficial natural values and processes known as *ecosystem services*. The ecosystem approach to development initiatives is best reflected within the FSM through its environment strategy matrix in the national strategic development plan. The SDP national environment strategy – developed in 2003 - was itself formed and guided by the NBSAP, primarily. Other relevant national planning strategies that reflect this approach are the national Climate Change Policy, the draft national Solid Waste Management Policy, which itself is an extension of the UNCCD SLM program, and crucially, the First FSM (UN) Millenium Development Goals Report. The MDG's, which are to be achieved by 2015, are currently being linked into the national SDP priorities, and are also being utilized to develop the National Sustainable Development Strategies (NSDS) - a national budget process linked to priority sector

strategies. In addition, the national government is also in the process of integrating the MDGs and NSDS into the National Planning and Budgeting Framework.

The above are merely documents and guidelines to processes of course; what, if anything, can we say about the on-the-ground actions that have been undertaken and their impacts toward implementation of the Convention? While the national government has been active in the formulation of policy, it is quite important to note that in regard to safevauching the ability over time for ecosystems to continuously provide those services that humans rely on has often been a function of the NGOs in the FSM. This is largely in regard to working with villages and communities in the establishment of conservation areas, where government is often not able to be effective due to perceived notions of control over traditional freedoms in forest and reef areas. In any case, NGOs have and do work well in this area, and have recently been working with communities and government agencies together – often as a go-between - protecting watershed forests (water resources), and establishing and assisting in the monitoring (sometimes taking the lead) of established marine protected areas, where conservation of aggregation and spawning sites for species has a natural spill-over effect to surrounding habitats and ecosystems. Ultimately, this sort of broad-based ecological mindset has the same spill-over effect on society: fishers are able to continue providing for their families and sell to local markets; markets are able to make a small profit and pay employees and sell to the general populace; the general populace is able to enjoy its favorite (and healthiest) foods and feel at ease that this food remains available to them; improved diets thus lead to less tax on the health care systems which are largely government subsidized; the NGOs, communities and government agencies steer their employment and systems toward the protection of nature rather than the destruction of it for survival; and so forth and so on in a positive closed loop. This being the case, one can say that the NGO, or civil sector, is in many ways the most highly integrated sector in the nation, considerate of social implications as a means to an end, with a mission that dictates that it adhere to biodiversity conservation, and the neccessity of garnering external revenue streams and creating lasting jobs around their sustained operations as part of the overall functioning of the macroeconomic fabric of the nation. As the NGO sector becomes more entrenched and more accepted, so too will the ecosystem approach throughout society, and more importantly, the ecology of place within the development and policy process at all levels of government.

On a final note for this section, though there are a multitude of examples, on a national level, perhaps the best current example is the highly collaborative and integrated FSM Protected Area Network (PAN) program ongoing. The PAN of course extends out of the CBD Programme of Work on Protected Areas

and has been instrumental in facilitating an eco-ethos between multi-levels of government, NGOs and communities, working toward national and regional Convention goals: determining conservation and data gaps, developing and implementing capacity building, establishment of state working groups, and ultimately, working toward the ambitious goals of the Micronesia Challenge. The PAN coordination is conducted out of the FSM Department of Resources and Development, with assistance from The Nature Conservancy.

Biodiversity in environmental impact assessment

According to FSM environmental impact assessment regulations – contained within Title 25: Environmental Protection, of the FSM Code – biodiversity is a primary consideration when conducting environmental or strategic impact assessments. Title 25 has a number of chapters and sections, one of which is the formulation of a Board, which in this case is the SD Council discussed in previous sections of this report. According to Chapter 2, Section 6 of the Code, "*The Board shall balance the needs of economic and social development against those of environmental quality and shall adopt regulations and pursue policies which, to the maximum extent possible, promote both these needs and the policies set forth…*" The Board/SD Council has a number of broad and authoritative functions related to earth moving and reporting on status of biodiversity and threats, however as been noted, this body is in need of some reformation. More salient for this section however are the Environment Impact Regulations that implement Section 13 of the FSM Environmental Protection Act. The purpose of these Regulations is to establish standard procedures for preparation of an environmental impact assessment statement prior to taking or funding any major action that may significantly affect the quality of the human environment. The Environmental Impact Assessment (EIA) process is intended to help the general public and government officials make decisions with the understanding of the environmental consequences of their decisions, and take actions consistent with the goal of protecting, restoring, and enhancing the environment. These Regulations provide the directions to achieve this purpose. In addition, these Regulations are designed to: (a) Integrate the EIA process into early planning of projects to insure timely consideration of environmental factors and to avoid delays; and (b) Identify at an early stage the significant environmental issues requiring further study and de-emphasize insignificant issues.

EIA's are required for all projects that may (*Appendix A - Examples of Significant Impacts*):

- Conflict with adopted plans and established uses of the community where it is to be located.
- Have a substantial, demonstrable negative aesthetic effect.
- Substantially affect a rare or endangered species of animal or plant or the habitat of such species.

- Interfere substantially with the movement of any resident or migratory fish or wildlife species.
- Substantially diminish habitat for fish, wildlife, or plants.
- Breach standards relating to solid waste or litter control.
- Substantially degrade water quality.
- Contaminate a public water supply.
- Substantially degrade or deplete ground water resources.
- Interfere substantially with ground water recharge.
- Extend a sewer line with capacity to serve new development.
- Encourage activities which result in the use of large amounts of fuel, water, or energy.
- Use fuel, water, or energy in a wasteful manner.
- Disrupt or adversely affect an archaeological site or a property of historic or cultural significance.
- Induce substantial growth or concentration of population.
- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.
- Displace a large number of people.
- Increase substantially the ambient noise levels for adjoining areas.
- Cause substantial flooding, erosion or siltation.
- Expose people or structures to major geological hazards.
- Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the areas affected.
- Violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.
- Convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land.
- Interfere with emergency response plans.

Furthermore, Appendix B of the Act provides state resource agencies with an Initial Assessment Environmental Checklist of specific questions related to impacts on Earth, Air, Water, Plant Life, Animal Life, Noise, Land Use, Natural Resources, Risk of Upset, Population, Housing, Transportation, Public Services, Utilities, Human Health, Aesthetics, Recreation, and Cultural Resources. How local laws, regulations, politics and boards function ultimately determine how adverse impacts on biodiversity are ameliorated or prevented. Final conclusions from EIA's often gloss over environmentalist concerns. In FSM sound policy exists but not always practiced, which is the very nature of development.

Outcomes achieved

"*The South Pacific Forum at its meeting last month adopted the Convention to Ban Importation Into the Forum Island Countries of Hazardous and Radioactive Wastes and to Control Transboundary Movement and Managements of Hazardous Wastes within the South Pacific Region, also referred to as the Waigani Convention. It is an important arrangement that strengthens and supplements the effect of the Basel and London Conventions within our region…An established principle of international law prescribes that a State must ensure that its actions within its jurisdiction or control do not cause damage within other*

States or within areas beyond the limits of its national jurisdiction. That principle is embodied in Article 4 of the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, otherwise known as the Noumea Convention. Together with nine Pacific countries and the United States, France is a party to that Convention. It is also an expressed principle in the Convention on the Biological Diversity, to which France is also a State party…The Noumea and Biodiversity Conventions also contain clear requirements for advance, transparent environmental impact assessments of projects which might have harmful impacts on the environment. No in-depth, comprehensive environmental impact assessment of France's underground nuclear testing program in the South Pacific has ever been carried out." These were the remarks of the Honorable Asterio Takesy, Secretary of External Affairs for the FSM, delivered at the General Debate of the Fiftieth Session of the General Assembly of the United Nations, New York, 3 October 1995, on France's intention to conduct nuclear testing in the region.

More recently, in December 2009, adhering to its national and international commitments to the UN Convention on Climate Change – an attempt to again take a proactive stance on the global stage to in some way head off the disastrous effects of climate change to the people and other biological wealth of the FSM, President Emanuel Mori made a legal request to the government of the Czech Republic concerning the expansion of the Prunerov II coal-fired power plant. Prunerov II CO_2 emissions are more than 40 times higher than those of the entire FSM combined. In its official submission of 4 January 2010, FSM stressed that the climate impacts of the project had not been assessed in the original EIA and argued that the Czech Ministry of Environment should issue a negative final statement on the environmental impact assessment for the project proposed by CEZ. The 1991 Espoo Convention on Environmental Impact Assessment in a Transboundary Context is the principal treaty focusing exclusively on transboundary EIA. The Convention addresses transboundary impacts to the state Parties. The Czech Republic signed the Espoo Convention in 1993 and ratified it in 2001. All other EU Member States are also Parties to the Convention. "*Within just a few generations*," stated Mori in Stockholm, Sweden, in October 2009, "*we have become the front line of a global crisis that threatens not only our water supplies, our agricultural productivity and our ocean resources, but also our very existence*."

In recent years, the FSM has also taken action locally to implement programs that adhere to the Montreal Protocol on Substances that Deplete the Ozone Layer, the 1990 Soil and Water Conservation Agreement Between the United States of America and Micronesia, and the Stockholm Convention on Persistent Organic Pollutants. All of these are serious efforts to directly affect external threats to the national biodiversity components. Contributing to the implementation of the NBSAP, the FSM is now

working on a Sustainable Land Management program (UNCCD) toward a successful outcome of mainstreaming SLM into national policies and strategies, including major infrastructure development projects. This is an important initiative in that Infrastructure is the largest single sector in the federation over the next 15 years and beyond, and therefore will have far-reaching social, economic and environmental impacts over the long term. The goal is to ensure negative impacts are minimized or avoided completely. Moreover, the SLM program is now also working toward strengthening the capacity of all relevant stakeholders to utilize the environmental impact assessment regulations in place to their fullest optimum effect.

In addition, the Micronesia Conservation Trust is a singular outcome achieved, not only for the FSM, but the entire North Pacific. Along with the Programme of Work on Protected Areas, the ongoing development of a nation-wide Protected Area Network has successfully brought together better than ever before government and NGOs and communities toward an overarching goal of achievement of the seminal Micronesia Challenge, an initiative that, if successful, will certainly assist to mainstream conservation of biodiversity.

Through these means and other efforts ongoing – the integration of the Millennium Development Goals and the National Sustainable Development Strategy into planning and budgeting processes, the European Development Fund Renewable Energy Programme, promotion of real ecotourism - biodiversity integration measures are hoped to help offset and perhaps reverse many of the larger trends of biodiversity loss, particularly through local anthropogenic factors. Already, the implementation and cross-sectoralization of these efforts are having a profound effect on the nation, and a clear shift in mindset is also apparent. Governments and communities are eager to embrace modern methods and technological means to live sustainable lives, as the people of this nation have for thousands of years.

Attaining a comprehensive goal of complete cross-sectoral integration of social, economic and especially biodiversity standards will be facilitated by the active participation of private sector businesses, and governmental, non-governmental, and other agencies, organizations, and institutions. Ultimately however, the key to achieving the conservation and sustainable use of the FSM's coral reefs and associated ecosystems resides within the local communities. The people who live, physically and spiritually, as a natural part of these fragile ecosystems will have to decide whether or not to make the commitment for themselves, and on behalf of their future generations, to adopt and implement a

comprehensive, fully participatory, community-based management approach to their environment (FSM Climate Change Response Strategy 2008)