

# **Scaling-Up Networks of Locally Managed Marine Areas (LMMAs) to Island wide Ecosystem Management while Decentralizing the Effort of Fiji LMMA Network and its Implementation from National to Provincial Levels.**

*A Kadavu Yaubula Management Support Team (KYMST) Case study.*

by

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*( on behalf of KYMST board members and FLMMA members)*

*Well-designed networks of locally marine managed areas (LMMA) are essential for coral reef conservation in many places, yet it is often challenging for practitioners and scientists to establish networks of LMMA that adequately fulfil the biodiversity conservation needs, as well as the social needs at a particular site. The Fiji Locally Managed Marine Areas (LMMA) Network as a collaborative partnership between sites and associated communities, government and non government agencies is actively working together to support Locally Managed Marine Areas (LMMAs) as a marine conservation and management tool in Fiji. KYMST is an example of a unique and practical approach that has emerged to decentralize the operations of the FLMMA national effort to provinces while institutionalizing the LMMA approach to government institutions. It also helps address some of the social and logistical obstacles to successful LMMA network initiatives in Fiji.*

## **1.0 Introduction**

### **1.1 Fiji LMMA Network Approach**

The long-term trajectory for most of Fiji's coastal fisheries such as Kadavu is in decline and with it, the quality of life and livelihoods for the local people who depend on them. Development projects have generally followed a "top-down" approach, which tended to be unsuccessful because the very people who were directly dependent on the resources were typically not involved in the decision making process.

In the last decade, a new approach has been used in Palau, Federated States of Micronesia, West-Papua in Indonesia, Papua New Guinea, Solomon Islands and Philippines particularly in Fiji to help conserve inshore marine resources. Participatory methods have been used to help communities design simple action plans to meet their prioritized threats to marine biodiversity important to them (Aalbersberg et al, 2005).

The key element of the work is that the communities are in control. Information is provided by co-managers to help make decisions, but the community members make all decision, such as location of protected areas. They are assisted to monitor changes and regularly analyse and discuss these results. Thus the goal of informed decision-making on resource management is as important as the actual resource improvement.

This approach to marine conservation, which has become a growing trend throughout the Pacific, blends the application of modern scientific techniques with traditional conservation practices, in what has recently come to be called “locally-managed marine areas (LMMAs).” This term, which represents marine and coastal areas being managed with the input of local stakeholders and land-owning groups, was agreed upon by conservation practitioners working throughout Asia and the Pacific, and is used to describe project work that typically involves co-management by a community together with government or some other body (e.g., non-government organization or university).

Project work under the Fiji Locally-Managed Marine Area (FLMMA) Network is undertaken by several government departments and non-government agencies working together. Organization members include Institute of Applied Science of the University of the South Pacific (IAS/USP); WWF SPP Fiji Country Program; Foundation of the Peoples of the South Pacific (FSPI), Wildlife Conservation Society (WCS), Partners in Community Development, Resort Support, National Trust of Fiji and tourism operators. Key government partners include the Fisheries Department, Fijian Affairs Board, Tourism Department and Environment Department. In 2005, Fiji made a commitment at the Small Island Developing States Meeting to set aside 30 % of Fiji’s marine areas as ecological and representative networks of MPAs by 2020. It is estimated that 25% of Fiji’s inshore area is now managed with a goal to have the entire area under effective local management by 2010. This is especially important as Fiji’s cabinet in early 2006 has approved the transfer of legal control of these areas from the state to local owners.

FLMMA network members share the same vision which includes:

1. Healthy ecosystems and communities, abundant fish and other marine resource stocks, and sustainable fisheries utilization.
2. By working together we are able to take actions that have a high chance of measurable long-term success.

The network’s mission statement is “***KEDRA SASALU TAWAMUDU NA NODA KAWA***” translated as “***Everlasting Resources for Our Future Descendants***”

## **1.2 FLMMA’s COMMUNITY ENGAGEMENT PROCESS CYCLE**

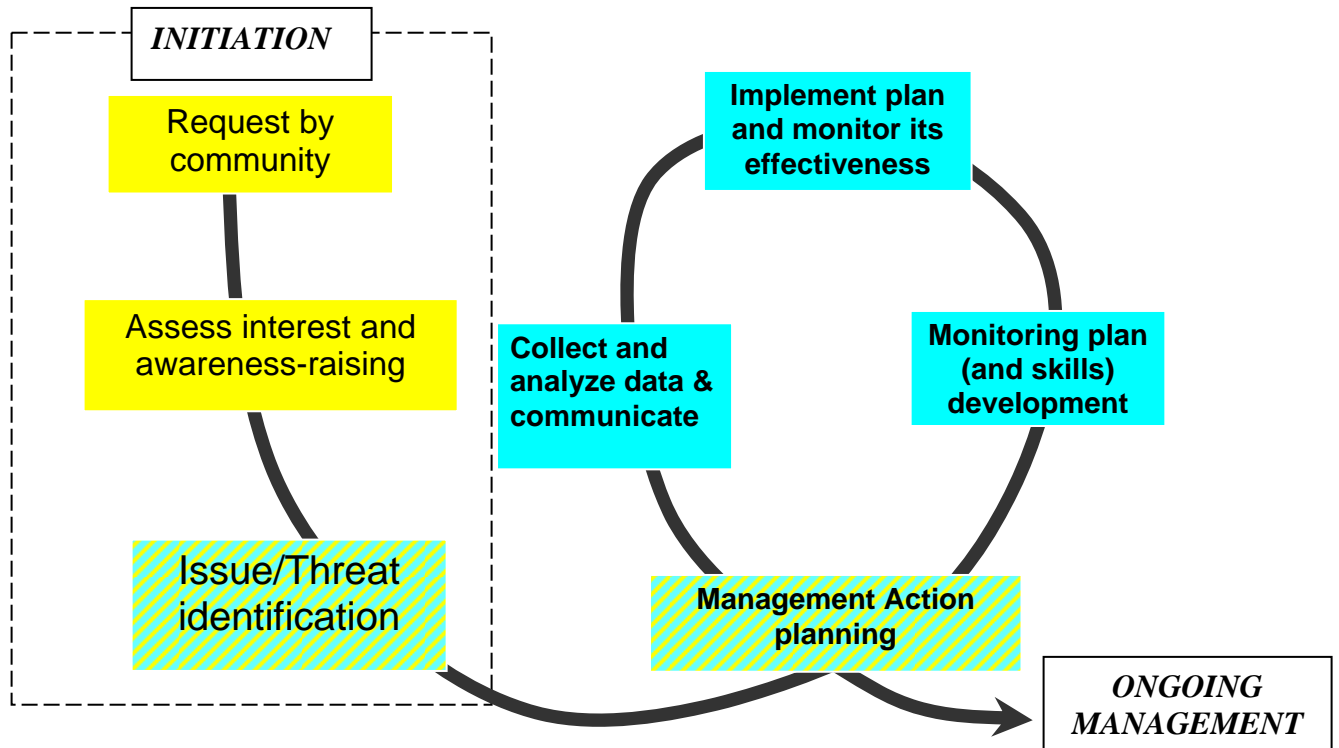
It involves initial awareness- raising about marine issues and assurance that the goals of the Network and community are in harmony. This is followed by a workshop in which the community develops a marine resource management plan. Such management plans might include:

- Declaration of a *tabu* area and other traditional management practices
- Reduction in the number of fishing licenses
- Banning of use of duva and other destructive fishing measures
- Restoration of economically important species eg. clams
- Reduction of marine pollution
- Marine awareness raising
- Alternative livelihood options
- Climate change adaptation

After the adoption by the community, these actions to address the identified threats begin. The communities are trained to do biological and socioeconomic monitoring to monitor the effects of their management actions. Meetings are held regularly to review progress and see if changes in the action plan are needed.

The process of FLMMA’s work described above is illustrated below.

**COMMUNITY ENGAGEMENT PROCESS CYCLE**



Fiji is perhaps unique in possessing a well-established system of marine tenure in the form of *qoliqolis*, or traditional fishing grounds, which have some legal recognition and are officially referred to as “customary fishing rights areas.” These areas are accurately mapped, delineated and bound by survey lines, with records maintained by the Native Fisheries Commission. There are 385 marine and 25 freshwater *qoliqolis* in Fiji covering 31,000 square kilometers of coastal/inshore waters. The resources from these provide livelihoods for approximately 400,000 traditional resource owners living in coastal villages.

Traditional systems of control over resources in such *qoliqolis* include seasonal or temporary closures, rotational harvest, full reserve, user and fish quotas, and “tabus” on certain species or practices. In addition, sacred fishing grounds and temporary closures for traditional ceremonies were recognized. For example, a tabu was often declared to certain fishing areas as a token of respect when a high chief died. Typically, the tabu would last for 100 days, after which fish were harvested and the village held a large feast to lift the mourning. Today, many communities maintain some traditional practices, with

varying levels of compliance. Recently, chiefs have been applying this customary no-take concept to spawning or overexploited areas to protect and/or increase stocks, with mounting interest and success.

## 2.0 Kadavu *Yaubula* Management Support Team (KYMST):

Kadavu is the fifth largest island in Fiji located to the south of Viti Levu. About 11,000 people reside in 72 villages on the island where they depend almost entirely on fishing and farming for their livelihood. Tourism is fast growing on the island since 2000 and is increasingly providing alternative income sources for the villages.

*Kadavu island.*



Kadavu is also referred to as ‘Fiji’s Natural Treasure’. It is home to the “kaka”, a parrot endemic to the island which is referred to as the “Pride of Kadavu”.

Kadavu is also surrounded by the Astrolabe Reef which is the 4<sup>th</sup> longest reef in the world behind The Great Barrier Reef (Australia) and the Great Sea Reef (Cakau Levu in Macuata, Vanua Levu). The Astrolabe reef is about 100km long broken up by 10-100m wide reef passages that consists of some of the best diving sites in the country. The Astrolabe reef and the passages consist of some of the last pristine and healthy reef areas left in Fiji. It also provides a spawning home to some important fishes such as the grouper - snapper, trevally, sharks and manta rays. However, these areas are quickly losing its uniqueness and pristine.



Two of the main threats to these areas includes over fishing (local fishers from within Kadavu and from Suva and long liners alike) worsened by the increasing number of illegal fishers and the continued use of destructive fishing practices such as poison fishing, use of SCUBA to fish, and small net sizes.

In an effort to restore the 'living wealth' – *yaubula* and the pride of the island, Kadavu province with the help of the Institute of Applied Science (USP) and Fiji Locally Managed marine Area (FLMMA) network have set up a community-based organization in 2003 called the "Kadavu Yaubula Management Support Team-KYMST.

KYMST's goal is to promote the sustainable development and utilization of Kadavu's natural resources- *Yaubula*.

Its vision & mission: '*Ko Kadavu me Vanua Bula Sautu*'. '*Towards a Prosperous, Wealthy and Peaceful Kadavu*'

The indicators of the expected condition ( *Bula Sautu*) translated from the vision and mission includes:

- 1) Food security- more marine resources for food and income
- 2) Abundant with tropical fruits (mango, orange, lyche, etc) and birds:
- 3) Healthy/Green Forests:
- 4) Undisturbed Catchments areas and sustainable water source:
- 5) More tourists to be attracted to Kadavu:
- 6) Improve Household income level:
- 7) Parents to be able to support tertiary education from Kadavu without migrating to Suva to look for employment.



In order for KYMST to achieve these targets, the focus is on empowering villagers to take ACTIONS that ensure the protection and sustainable utilization of natural resources.

The Kadavu Yaubula Management Support Team's key responsibilities include:

- ❖ Responding to requests from other interested communities and doing field assessments.
- ❖ Conduct environmental awareness in villages and share experiences from other fishing areas or 'qoliqolis' within Kadavu and Fiji.
- ❖ Assess level of awareness and recommend next steps to the technical and advisory group (Fisheries Department, Provincial Office and FLMMA).



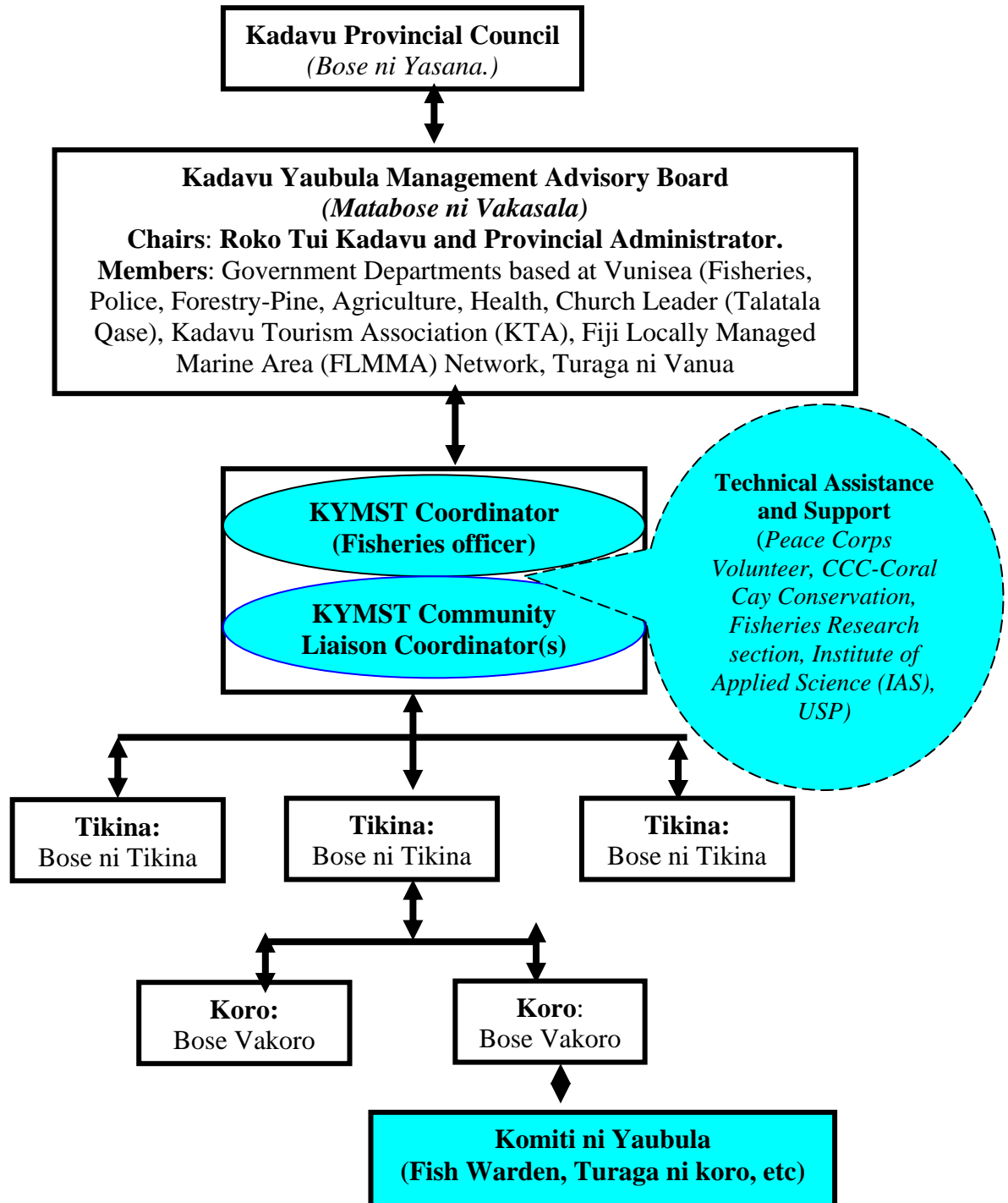
- ❖ Help organise and lead *Yaubula* Management Planning workshops.
- ❖ Help conduct monitoring surveys.
- ❖ Frequently follow up and review developed *yaubula* management plans.
- ❖ Provide advice and general support to communities and core support team.

KYMST's specific roles and responsibilities include:

1. Improve environmental awareness:
  - a. Targeting chiefs and decision makers in the province
  - b. School activities
  - c. Youth groups, Women groups
  - d. Assist government and communities on local environmental issues
  - e. Holding workshops and presentations
2. Supporting environmental protection:
  - a. Help communities identify environmental problems
  - b. Develop Village *Yaubula* (Fisheries/Forest/Environment) management plans
  - c. Setting up new MPA's
  - d. Maintaining current MPA programs within the province
  - e. Support other environmental projects (like mangrove and forest reserves).
3. Improve self sustainability:
  - a. Train villagers to perform survey, fish wardens
  - b. Gaining resources (human, equipment, funding)
  - c. Recruit core team community volunteers
  - d. Train core team members in data analyses assess if MPAs and other management actions are working
  - e. Explore a sustainable source of funding for KYMST such as Trust Fund
4. Measure resource health and quality & livelihood changes:
  - a. Perform qoliquoli survey every 6 months or at least once a year
  - b. Perform household and income level survey once every 3 years
  - c. Perform data analyses
  - d. Built database
  - e. Improve survey technique's to include socio-economic and leadership changes as well.
  - f. Present data to chiefs and villages for management decisions

The Kadavu *Yaubula* Management Support Team is expected to attend and frequently update village, district and provincial council meetings on *yaubula* (fishing & farming areas) management activities within the village, district and province. As a framework for

coordination, the Mayor for the province (Roko Tui Kadavu) and the Provincial Administrator (PA) has agreed to lead the team and the Fisheries Extension Officer coordinates the operations of the team.



### **KYMST Advisory Board**

1. Co-chair: Roko Tui Kadavu
2. Co-chair: Provincial Administrator
3. Secretary: Agricultural Officer
4. Technical advisor & Treasurer:  
Alifereti Tawake, IAS & FLMMA
5. Coordinator & advisor: Fisheries  
Officer
6. Advisor: Health Department
7. Advisor: OIC Police
8. Advisor: Forestry(Fiji Pine Trust)
9. And other Government Departments.
10. Community Coordinator: Josaia  
Ravula
11. Technical Support Coordinator:  
Peace Corps Volunteer



The members of the advisory board consists mainly of Government extension officers based in the province and the initiative provided an opportunity to take a holistic approach towards natural resource management in the province as opposed to the usual sectoral government approach. The KYMST initiative helped mainstream their activities and maximize their outputs and benefits to communities they serve. The KYMS team of government officers is using the FLMMA engagement process and approach in doing integrated planning at the village level to set up people-centered plans. They managed to align their respective national and provincial corporate plans to respond directly to community needs for a sustainable livelihood. While the implementation and the follow-up to the developed integrated village plan is still done sectorally, there is a greater appreciation by different government departments of the benefits and applicability of the “bottom-up” approach to their work.

### **3.0 Results and Achievements**

FLMMA’s work has been supported by the national government which has formally adopted the LMMA approach and has devoted a division of the Fisheries Department to coordinate FLMMA work and promote inshore conservation. With FLMMA’s assistance, the Fisheries Department has been tasked to conduct resource assessments of all of Fiji’s *qoliqolis* and to help develop management plans. This will help ensure effective management as the government returns ownership of these inshore fishing areas to their traditional owners. The high chief of the area as custodians is entrusted with the qoliqoli ownership, but decisions are based on the views of community elders and the needs of resource users. The adaptive management process helps ensure the input of these people and more informed decision- making.

FLMMA’s work has influenced policies and actions at all levels of government, and has even trickled into the school system. Locally, villages have reported a greater sense of cohesion from their LMMA work and are able to identify other community problems and

address them effectively. Community members trained in planning, monitoring, analysis and communication share their lessons with other villages and often improve provincial environmental policy. In addition, having a successful resource management plan enables communities to better negotiate with industry and government. This LMMA approach is found to be more resilient to political and negative policy changes as sustainability depends more on the commitment and motivation of the community.

LMMA implementation in Fiji has led to increased resources and a corresponding reduction of poverty in rural communities that are dependent on marine resources. Equally important, the LMMA process has led to improved community solidarity as well as regional and national policy shifts. The challenge now is to keep it sustainable and decentralize the process as it spreads throughout Fiji and other parts of the Pacific.

In addition to site-based LMMA work, some communities are also gathering an extended set of data about the success of their project and factors that might affect this success. These are being analyzed as part of the FLMMA as well as the Indo Pacific LMMA countries learning network to better learn why some projects are more successful than others. Such information should prove very useful in future LMMA project design.

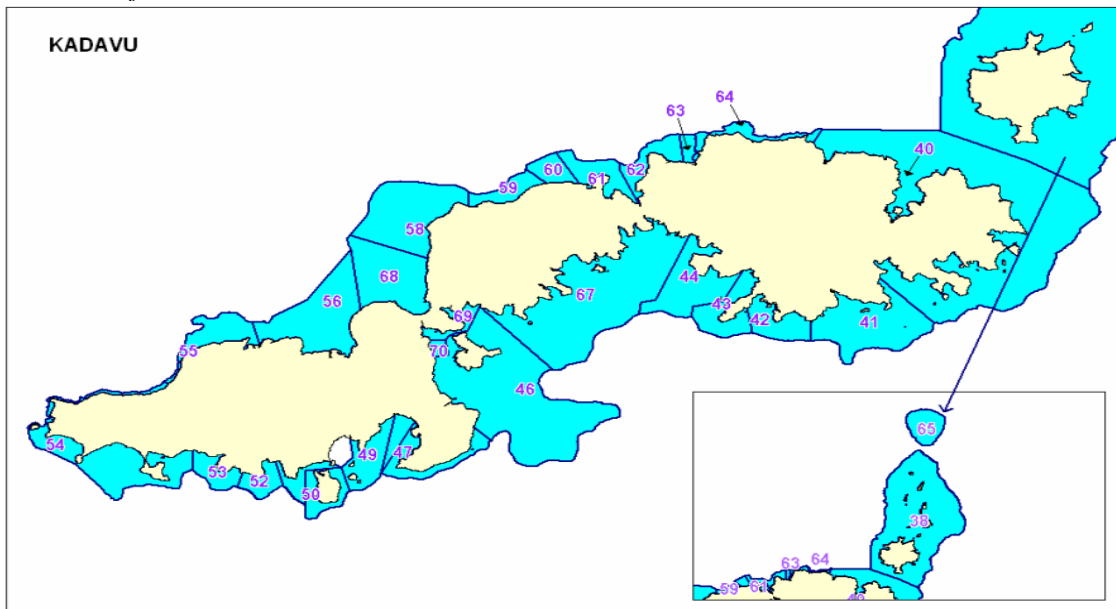
To date, nearly 195 LMMAs involving about 200 communities with as many *tabu* areas have been declared in Fiji from the LMMA program; these areas cover about 25 % of Fiji's inshore fishery. These 195 networks of "managed and *tabu* sites" that has high degree of local ownership and involvement has evolved from sites to managed marine ecosystems.

The FLMMA approach specifically in Kadavu has been an organic one, with methodologies and approaches regularly evolving. True participatory techniques, together with adaptive and co-management methods, are proving to be effective approaches to improving local governance and the delivery of services from national and provincial government departments. Maintaining community commitment depends on their continued feeling of ownership of the project and having a firm grasp of potential benefits; this is best achieved by allowing the community and government officers with in the province to take the lead in the entire cycle of activities.

On the island of Kadavu, 44 of its 59 *qoliqoli* areas are under the network of locally managed marine areas. The LMMA work provided the framework and the catalyst for the province to institutionalize resource management ideals and policy into the provinces strategic plans for 2007-2012. It also provided an opportunity to take a holistic and an integrated approach (infrastructure, sustainable tourism, natural resource management, restoration, village governance, law and order, income generation and spiritual life) towards the development of the province. This island province demonstrates the movement towards protecting Fiji's islands and marine ecosystems.

The map below shows delineated customary marine areas (*qoliqoli* areas in blue) for Kadavu province.

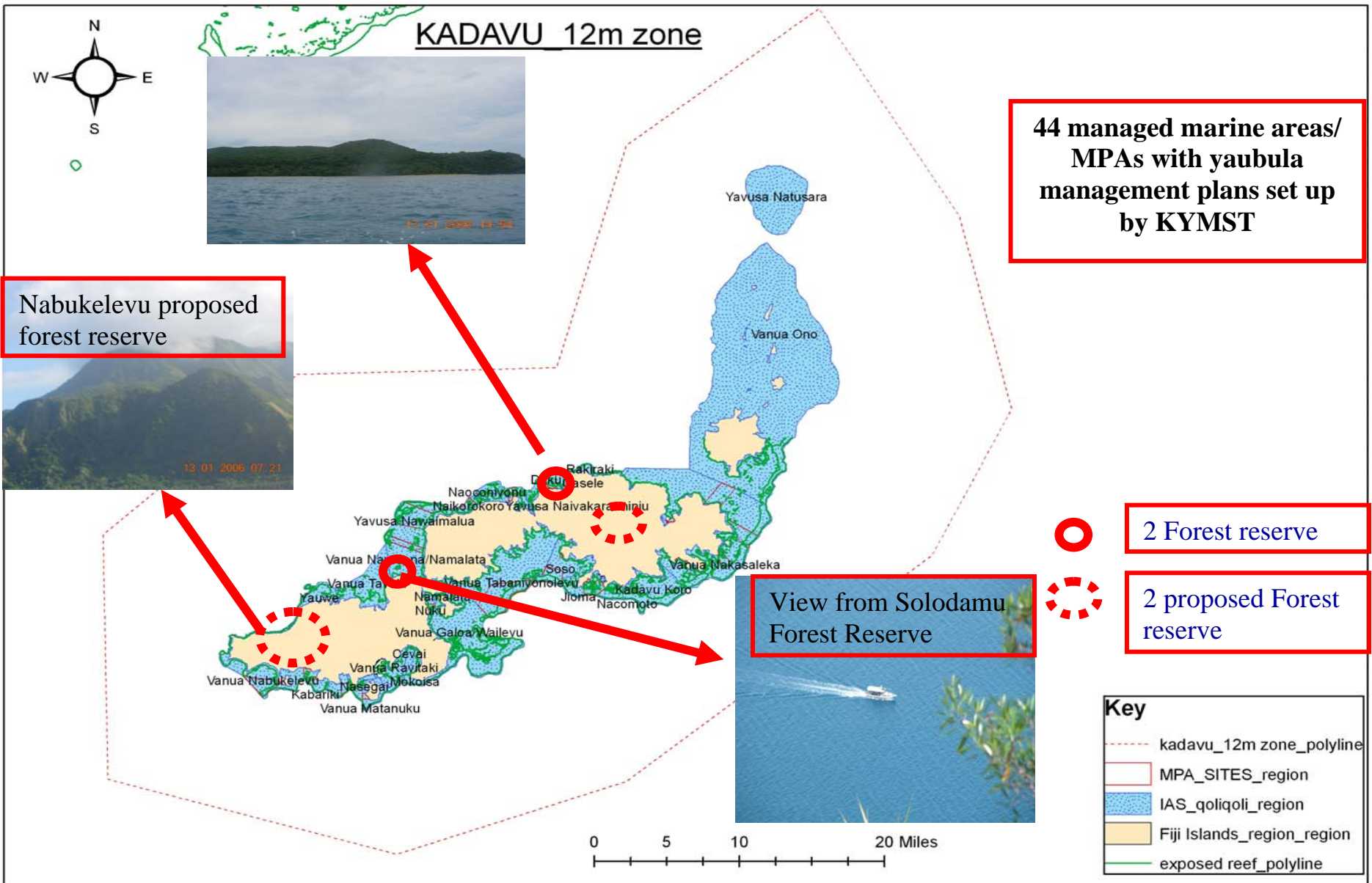
### Networks of LMMAs in Kadavu.



In addition to the network of LMMAs, the KYMST have also set up 2 forest reserves and 2 are being proposed. Restoration activities undertaken include the distribution of 600 giant clams (*Tridacna sp.*) to the 44 *tabu* areas, replanting of mangroves as coastal protection, reforestation using economically important and indigenous plants such as sandalwood on farmed and degraded lands. KYMST key strategies and activities for the next five years (2007-2012) include:

1. setting up a tree nursery for the province to supply villagers for reforestation purpose
2. Promote mariculture on high commodity fisheries products such as lobster, sea cucumber, pearl and seaweed as an income generating activities for the province while reducing intensity of wild stock harvest
3. setting a buffer zone within the 12 miles boundary outside the qoliqolis to restrict commercial fishers and long liners encroaching and poaching into traditional waters
4. gazette the networks of LMMAs and forest reserves all at once to provide a legal framework for enforcement of management plans and by-laws
5. protection of catchment areas to protect drinking water source
6. develop a waste management strategy for the province and each village
7. develop a sustainable tourism plan for the province
8. designate an environment “yaubula” day annually for the province
9. conduct province-wide fisheries catch per unit effort survey and other biodiversity studies to measure the effectiveness of the KYMST plans and work and
10. set up a yaubula trust fund for the province to finance future KYMST activities
11. promote and maintain Kadavu as “Fiji’s Natural Treasure” to attract tourist to the island

The map below illustrates the current status of the province’s island wide ecosystem management.



#### **4.0 Overall Marine Biodiversity and Socio-Economic Impact:**

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There also needs to be an acceptance that the co-managers commit themselves to assisting the communities over an extended period of time. New challenges inevitably arise such as the need to demarcate the *tabu* area and patrol it from poachers, especially once the increased marine wealth of the area becomes known. Communities also need to learn the relative benefits of permanent closures compared to periodic openings.

#### **5.0 Lessons Learned**

To re-insert lessons learned

In summary, emerging political challenges and national issues identified that have to be addressed include:

- POLITICAL WILL TOWARDS FIJI'S LONG-TERM COMMITMENT TO THE IMPLEMENTATION OF THE PACIFIC PLAN;
- INTEGRATION OF CONSERVATION ACTIVITIES & APPROPRIATE ECOSYSTEM-BASED APPROACH IN THE NATIONAL STRATEGIC DEVELOPMENT PLANS;
- STRENGTHENING OF BIODIVERSITY CONSERVATION POLICIES AND ENFORCEMENT OF EXISTING APPROPRIATE LEGISLATIONS
- SUSTAINABILITY OF CONSERVATION PROGRAMMES THROUGH COMMUNITY PARTICIPATION IN THE PLANNING, AWARENESS, CONSULTATION, IMPLEMENTING, MONITORING AND REVIEWING STAGES OF THE PROGRAMMS;
- ACCESSING INTERNATIONAL FUNDING MECHANISMS AND PROVISION OF FUNDS IN NATIONAL BUDGETS;
- CONTINUOUS CAPACITY BUILDING IN GOVERNMENT AND CIVIL SOCIETY, INCLUDING LOCAL COMMUNITIES;
- SUSTAINABLE COORDINATION OF PARTNERSHIPS AND ACTIONS OF STAKEHOLDERS AT INTERNATIONAL, REGIONAL, NATIONAL, AND LOCAL COMMUNITY LEVELS.

### **Acknowledgements**

I wish to thank the residents of Kadavu Province, FLMMA Network executives and KYMST board for sharing their data. I also thank Whitley Fund Foundation, Packard Foundation and MacArthur Foundation for the funding support for the work currently being done.

A big vinaka vakalevu to Professor Bill Aalbersberg and John Parks of NOAA, Nick Salafsky of Foundation of Success, and Dr Joeli Veitayaki of USP for reviewing a draft of this paper.

The draft paper is still under review.

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