



MARINE CONSERVATION SOCIETY SEYCHELLES

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Dear Colleague,

Re : Discussion Document on a National Mooring Programme

During the MCSS Environmental Moorings Workshop on June 2nd, a number of points were raised regarding the continuation and expansion of the mooring programme.

One major factor was that the use of moorings and the credibility of the programme is dependant on correct and timely maintenance. At the moment it would appear that the routine maintenance on many installations is not being completed and this jeopardizes their value as users do not have confidence in them.

Another concern was that there are currently a limited number of moorings available and the costs for installation and maintenance are not insignificant, consequently there are very few stakeholders who have the current capability to fund much in the way of additional moorings without some form of income from this activity.

Discussions on charging a fee for the use of moorings revealed concerns that under the current system where individual areas are managed by different Mooring Managers, visitors could be asked for fees at each mooring used. It was felt that tourists visiting Seychelles are already expected to pay too many fees and this would not be a welcome addition.

The Ministry of Tourism and Transport advised that a policy for Yachting is currently being developed for submission to Government; the use of moorings was already incorporated in it and a mooring fee could be included under this policy.

Workshop participants agreed that a discussion document on the proposal for a National Mooring Programme be drafted for distribution to stakeholders and authorities for their consultation so that these comments could be taken into consideration in the Ministry of Tourism and Transport's Yachting Paper. The MCSS agreed to draft this document and have done so incorporating each facet of the mooring system and giving an indication given of the current status with a SWOT analysis (Strength, Weakness, Opportunities & Threats) of each.

We would be grateful for your comments and feedback by July 5th so that we can forward the amended document with comments to the Ministry of Tourism as requested.

Yours sincerely,

David Rowat, Chairman, MCSS

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MCSS ENVIRONMENTAL MOORINGS WORKSHOP OUTPUT

1. OVERVIEW ~ Why A National Mooring Programme?

Participants at the MCSS Environmental Moorings Workshop on June 2nd felt that there was a need to install significantly more moorings around Seychelles with a single organisation responsible for their management. In order to achieve this it was suggested that a single body be made responsible for moorings throughout Seychelles, and that in order for it to expand the number of moorings that it should, at least initially, be financially back-stopped by Government. Once the system was expanded the programme should be self financing through the collection of a nation-wide mooring use fee.

This would potentially have several benefits which were recognised as:

- 1.a. A greater number of yachts could be moored at any one time.
- 1.b. More moorings mean a further reduction of damage to sub-surface structures and coral reefs.
- 1.c. A larger number of installations would allow the implementation of a user fee which would be valid Nation wide; this would make the system financially viable as well as being value for money.
- 1.d. A single organisation being responsible for maintenance should allow regular standardised maintenance to be carried out thereby increasing user confidence in the system.
- 1.e. A single organisation, financially back-stopped by Government, could cope with the up-front costs needed to expand the system prior to the instigation of the mooring use fee.
- 1.f. A single organisation could determine a standardised system of buoy types for different uses limiting user error and allowing for efficient management of area resources.
- 1.g. Regularisation of management and a thorough maintenance programme would lower liability issues for both mooring and area managers.

The Centre for Marine Conservation (CMC) in the United States commissioned studies by Anita van Breda and Kristina Gjerde on 'The use of Mooring Buoys as a management tool' and 'Mooring buoys legal liability' (1991 in *Mooring Buoy Planning Guide*, Professional Association of Diving Instructors). Quotations from these papers appear *in italics* as a forward to each section as appropriate.

2. MOORING STRATEGY AND MANAGEMENT

'(environmentally-friendly) Mooring buoys immediately benefit marine resource protection by reducing damage to the sea bottom caused by anchors and associated chain sweep (from traditional mooring designs).. However, the effective use of mooring buoys as a resource protection tool involves more than installing as many moorings as possible in high use areas. The manager must develop and implement a comprehensive plan for long term mooring buoy management in order to meet the objective of resource management.'

'There is no magic solution that can immunise an organisation or a person from liability from irresponsible or unsafe actions. However, an organisation can virtually eliminate its chances of

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unfairly being held responsible for injuries or property damage by using reasonable care and good judgement. Proper installation of mooring buoys and a well designed, implemented and documented program of inspection and maintenance will go a long way to establishing the use of 'reasonable care' in mooring buoy projects.'

2.1 A NATIONAL BODY ~ The Concept Model

- 2.1.a. A National Moorings Management Body (the National Body), with due consultations with the relevant organisations, should have the mandate to install environmentally friendly moorings on sites through-out Seychelles coastal areas. Perhaps the current Mooring Buoys steering committee (see below) might be appropriate as this body chaired by the Ministry of Tourism & Transport or the Ministry of Environment.
- 2.1.b. In consultation with the appropriate authorities and taking due regard of biodiversity factors, it should adopt criteria for deciding where moorings should be installed.
- 2.1.c. It should have the mandate to set up appropriate Mooring Use Designations to allow for different categories of use, differing periods of use and different sizes of craft. These should then be proposed to Ministry of Environment who should then legislate the use.
- 2.1.d. The National Body would ensure that all equipment used in the installation and maintenance of moorings is of the required type and standard as set down by the mooring system designers and proven by best practice.
- 2.1.e. The National Body would ensure that an appropriate organisation was responsible for the continued regular maintenance of all moorings to a set standard and schedule
- 2.1.f. It would maintain accurate and up to date records of all mooring installations and maintenance in a prescribed format.
- 2.1.g. The National Body would be the manager for all mooring installations no matter where situated; in areas covered by any of the various levels of protected status, they would liaise with the organisation responsible for managing the area as to where that organisation wanted moorings installed, repairing damaged installations and in monitoring mooring use and performance.
- 2.1.h. The National Body would provide managers of protected areas in which there are moorings with copies of the mooring installation and maintenance reports as soon as they become available. There will be a need to be some sort of incentive programme to ensure that area managers regularly monitor their moorings.

2.2 THE CURRENT SITUATION

- 2.2.a. A Moorings Steering Committee was set up in 2001 with representatives from the Port & Marine Services Division (PMSD), the Ministry of Environment (MoE), the Ministry of Tourism and Transport (MTT), the Seychelles Coast Guard (SCG), the Marine Charter Association (MCA), the Marine Parks Authority (MPA), the Marine Conservation Society Seychelles (MCSS) and other stakeholders. This committee developed a strategy for the implementation of a moorings programme that was acceptable to participants and within the capabilities of the various organisations concerned.
- 2.2.b. At the moment priority is given to the installation of moorings in areas of sensitive marine structures that critically need to be protected such as coral reefs and benthic communities, as indicated by the Seychelles Marine Ecosystem Management Project (SEYMEMP) in terms of remnant reef areas following 1998 bleaching.

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- 2.2.c. To date moorings have only been installed in areas indicated above that are also controlled by an organisation that will contract to maintain them under an Implementation Agreement with the MCSS (See Annex 1 and section 5 'Maintenance' below). This could be any organisation, parastatal, Non-Governmental Organisation (NGO), company or Association who has the capability to implement such an agreement.
- 2.2.d. Moorings are maintained by the Mooring Manager (mooring provider) under a schedule supplied by the mooring consultants Environmental Moorings International (EMI) that requires a monthly cleaning of surface components and bi-monthly cleaning of sub-surface components. Mooring Managers are required to maintain a record of maintenance and to provide a copy of this record to MCSS so that the Mooring Maintenance database can be updated accordingly.
- 2.2.e. A total of four Mooring Managers have signed Implementation Agreements with the MCSS: one Government parastatal, the Marine Parks Authority and three NGOs; Nature Seychelles (Cousin), the Royal Society for Nature Conservation (Aride) and the Seychelles Islands Foundation (Aldabra).

2.3 ANALYSIS

- 2.3.a. **Strengths:** A stakeholder forum has agreed the current management process; installation is done by trained personnel with accepted techniques; the maintenance programme has been designed by the international experts in this field; there is a set of work forms to document the maintenance regime; the Implementation Agreement requires that regular maintenance be carried out and the records of such lodged; and these maintenance records are stored on a central database.

The National Body should have all of these same strengths without the need for the Implementation Agreement; however there will be a need to be some sort of incentive to ensure that area managers regularly monitor their moorings.

- 2.3.b. **Weaknesses:** Currently, monthly and bi-monthly maintenance of mooring installations is not being carried out by all Mooring Managers and users are consequently disinclined to use them as they look un-maintained; MCSS has limited recourse to ensure compliance with the Implementation Agreement; currently there are relatively few mooring installations in only a few key ecological locations; funding of maintenance and post GEF installations is currently left to the Mooring Managers and seems to be a potential limiting factor.

The National Body should have none of these weaknesses: as only one body is tasked with the maintenance, and is financially backstopped by Government, this should be done on schedule; similarly the expansion of the number of moorings should be possible prior to implementing any user fee.

- 2.3.c. **Opportunities:** Currently, there is considerable scope for improvement of compliance by Mooring Managers; undertaking regular routine maintenance would result in a net saving in terms of costs, as remedial maintenance by MCSS should not be needed.

The National Body, being financially backstopped by Government at least initially, would have significant opportunities to expand the number of moorings installed in a wider range of areas; it would also have a better capability to determine appropriate User Designation and thereby allow for the more efficient management of areas and the implementation of zoning strategies where appropriate.

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- 2.3.d. **Threats:** Currently the lack of maintenance, can severely jeopardise the programme; poorly maintained moorings do not inspire user confidence and mooring failure could easily result in litigation; while an increase in the number of moorings is desirable in terms of the programme, the number of installations in any area needs to be carefully controlled both in terms of the aesthetic appeal and also in terms of environmental impact from associated waste production; the individual basis of management areas means that users could be liable to pay fees to several different mooring managers.

The National Body, should not have the same potential problems provided that maintenance was properly and regularly done: the significant threat to a National Body is that it public bodies tend to lack the drive necessary to ensure continued compliance to standards and performance, this could be alleviated by the National Body designating or contracting a private body / NGO to undertake the physical work. The National Body should have appropriate guidelines and input to develop a strategy to cope with carrying capacity and aesthetic requirements.

3. MOORINGS INSTALLATION

'...providers of mooring buoys must use reasonable care to ensure that buoys are properly installed and maintained and safe for their intended use. Providers should be experts with knowledge of both the nature of the buoy system (their necessary strength and durability and resistance to strong winds, storms and large waves) and to the maintenance required (the required amount of attention and the frequency of inspection).'

'.... parties must be able to prove that their mooring buoys have been properly installed. Consequently, the installation of mooring buoys must be well documented. This should probably include, among other items, the type of buoy, the manufacturer, the serial number, who installed a given mooring buoy, and when and how it was emplaced. In addition, proven mooring designs should be used for these projects.'

3.1 A NATIONAL BODY ~ The Concept Model

- 3.1.a. Mooring installation should be undertaken by trained personnel using specified equipment and installed using specific techniques that have been approved by the 'industry' as being Best Practise.
- 3.1.b. Mooring installations should be accurately recorded with details of place, date and time; who installed the system; what components were used; their types and identification numbers if relevant; and what testing was done on the installation prior to deployment.
- 3.1.c. Mooring records should be properly stored and copies passed on to area managers where they exist.

3.2 CURRENT SITUATION

- 3.2.a. Mooring installation is currently undertaken by the MCSS whose personnel were trained in the techniques by the internationally accepted leaders in this field, John and Judy Halas of Environmental Moorings International (EMI).
- 3.2.b. MCSS are currently able to put moorings into sand, coral rock (limestone) and granite substrates. The pins and embedment anchors currently used in the programme are accepted internationally as representing 'Best Practise' for these types of moorings.

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Additionally they have been approved for use in the United States by the U.S. Department of Land and Natural Resources (DLNR) and its successor the Division of Boating and Ocean Recreation (DOBOR) and the Army Corps of Engineers who issue permits for mooring installation.

- 3.2.c. The moorings installed are currently designed for two classifications of vessel namely: up to 20 metres, and from 20 to 35 metres in length. The materials and components used are as specified by the consultants EMI and have been subjected to a series of strain tests. As such these components can also be taken to represent 'Best Practise' for these types of moorings.
- 3.2.d. MCSS mooring installation costs have been covered to date largely by the Dutch Trust Fund (DTF), the SEYMEMP GEF and private sector counterpart funding. When this the funding will cease and MCSS costs will have to be met in full for installation, inspection and remedial maintenance work which may severely restrict the expansion of the system.

3.2 ANALYSIS

- 3.2.a. **Strengths:** Currently, MCSS have all the equipment and training for installation; they have gained a lot of experience in these types of installations in the conditions and submarine topography prevailing in Seychelles; as a non-profit NGO costs are kept to a minimum; vessel support for the installation process is sourced at competitive rates from the private sector ensuring that vessel support is always readily available.

The National Body would need to set itself up to the same level of expertise and capacity in order to efficiently fulfil this aspect; alternatively, this could be contracted to MCSS to undertake thereby taking advantage of the existing infrastructure and experience.

- 3.2.b. **Weaknesses:** Currently, as the MCSS is an NGO it has no regulatory powers or authority apart from those contained within the 'Implementation Agreement' (See Annex 1); MCSS does not have status as a Foreign Exchange Earner and consequently purchase of materials can be delayed by processes in the banking system.

The National Body would have the necessary authority to effectively manage the moorings; similarly, as it would be financially back-stopped by Government, at least initially, funding the purchase of components to expand the system should not be a problem.

- 3.2.c. **Opportunities:** Currently, being a small organisation and an NGO, MCSS is able to react quickly to unusual situations and demands.

The National Body, dependant on the structure adopted should be able to react similarly with respect to coping with changing demands and patterns of usage.

- 3.2.d. **Threats:** MCSS is not a commercial entity and as such does not have access to the financial backing that a National entity may have.

The National Body should not have the same financial constraint.

4. MAINTENANCE

'... parties must be able to show that their moorings are properly inspected and maintained. Therefore, parties involved in mooring buoy projects should design and implement programmes

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to regularly inspect and maintain moorings which they have installed. These programmes should also be well documented with information about who inspected the mooring buoys; when the inspection took place; notations on the condition of the mooring; recording of repairs; and taking preventative steps of regularly changing mooring chain, mooring line, and other hardware subject to corrosion.'

4.1 A NATIONAL BODY ~ The Concept Model

- 4.1.a. A Mooring Maintenance schedule should be adopted that has been approved by the 'industry' as being Best Practise for these types of installations.
- 4.1.b. Mooring maintenance should be undertaken by trained personnel using only specified products for replacement of damaged components.
- 4.1.c. Mooring maintenance should be accurately recorded with details of place, date and time; who maintained the system; what components were used; their types and identification numbers if relevant.
- 4.1.d. Mooring records should be properly stored and copies passed on to area managers where they exist.

4.2 CURRENT SITUATION

- 4.2.a. Mooring maintenance schedules were provided by the mooring consultants EMI and were based on the required inspection and maintenance regimes used in other similar areas on mooring systems of these types such as in Kenya.
- 4.2.b. The worksheet requires Mooring Managers to record who inspected the mooring, when the inspection took place, notes on the condition of the mooring and records of repairs and replacement parts fitted.
- 4.2.c. Replacement components are provided by MCSS from stocks as designated by the mooring consultants, EMI, and subject to the original installation records and subsequent maintenance records for that particular mooring installation.
- 4.2.d. Routine maintenance (carried out by the Mooring Managers) involves frequent visual inspection to check for any change in mooring integrity, monthly cleaning and inspection of surface components and bi-monthly cleaning and inspection of sub-surface components.
- 4.2.e. Periodic Inspection is carried out at six monthly intervals by MCSS to confirm that a mooring installation is being maintained to the correct standard of usability; should defects be discovered MCSS will perform remedial maintenance or repair of the mooring.
- 4.2.f. Regular maintenance by Mooring Managers can keep MCSS inspection and remedial maintenance costs to a minimum; MCSS mooring inspection and remedial maintenance costs have to date been partly subsidised by SEYMEMP GEF private sector counterpart funding.
- 4.2.g. Maintenance reports are entered onto the central database; replacement components can quickly be identified for any installation as all components used are recorded on the database.

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4.3 ANALYSIS

- 4.3.a. **Strengths:** Currently, the maintenance programme is based on proven models; routine maintenance is carried out by the Mooring Manager and can be fitted in to his/her own work schedule; maintenance regime is simplified by the use of standardised maintenance forms ensuring the recording of necessary details; supply of the correct components is simplified by accurate recordings of initial installations and subsequent maintenance history; periodic inspection verifies maintenance activities are taking place and allows for timely remedial maintenance if required.

As for the installation of moorings, the National Body would need to set itself up to the required level of expertise and capacity in order to efficiently fulfil this aspect; alternatively, this could be contracted to another organisation, such as MCSS, thereby taking advantage of the existing infrastructure and experience. Using a contracted implementer has additional benefits as area managers and users will quickly report any defects thus creating significant leverage to ensure that maintenance is properly and regularly carried out.

- 4.3.b. **Weaknesses:** Currently, not all Mooring Managers are fully compliant with the maintenance aspects of their Implementation Agreements.

The National Body must structure itself and operations properly to undertake the maintenance programme required, as indicated in 4.3.a. above and in so doing would remove this major weakness.

- 4.3.c. **Opportunities:** Mooring Managers are at liberty to contract out the maintenance; regular maintenance and cleaning regimes can significantly reduce long term replacement costs and short term remedial maintenance costs.

If properly set up, the National Body would similarly benefit from the long-term savings that derives from proper maintenance.

- 4.3.d. **Threats:** Non-compliance with the maintenance schedule can severely jeopardise the programme; poorly maintained moorings do not inspire user confidence and any mooring failure due to infrequent or improper maintenance could easily result in litigation to the detriment of all Mooring Managers

The National Body could ensure through the use of a contracted implementer that regular and correct maintenance was carried out on every installation and thereby should not suffer from the loss of confidence that derives from improper maintenance. In fact the improved overall maintenance regime should benefit both the National Body and the Area Managers in terms of limiting liability exposure.

5. MOORING USE

'... anchoring is a skill learned with experience, but even the experienced boater can save time and aggravation by the proper use of a mooring buoy. Although buoys are simple to use, boaters need to be informed of basic information ...'

'Another method of reducing the risk of liability is to give the vessel owners discretion over whether to use mooring systems. If a vessel owner "assumes the risk" of using a mooring buoy, then he or she may be barred from claiming that the supplier of the mooring buoy is responsible for his or her injuries..... Where the use of a mooring is mandatory..... it cannot be argued that a vessel owner "assumed the risk" of using a mooring buoy.'

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5.1 A NATIONAL BODY ~ The Concept Model

- 5.1.a. The National Body will set up appropriate Mooring Use Designations to allow for different categories of use, eg. Taxi boat, dive boat, general, yacht etc
- 5.1.b. The National Body will set up appropriate Mooring Use Designations to allow for differing periods of use, eg. Short term use (2 hrs), day use only, overnight use etc.
- 5.1.c. The National Body will set up appropriate Mooring Use Designations to allow for different sizes of craft, eg. Boats up to 20mt length, boats 20 to 30 mt in length
- 5.1.d. Details of correct mooring use will be distributed to all licensed hire-craft, to all private boats and to visiting yacht through the appropriate organisations.
- 5.1.e. Areas where anchoring is allowed will be clearly demarcated so as to allow users the choice of mooring (in prime areas) or anchoring in sandy bottom areas where no sub-surface damage will occur.

5.2 CURRENT SITUATION

- 5.2.a. A Standard Mooring Practises leaflet was distributed to all the charter operators and the Port Authorities; this has been upgraded and will be further revised in light of comments from the stakeholder workshop.
- 5.2.b. Mooring Managers have also been advised of the correct method for use and have instructed their boat based staff to ensure user compliance.
- 5.2.c. Local circumstances will dictate the most appropriate method for users to report problems with moorings; as most boats have VHF radio the most suitable seems to be to report back to the charter base any problems and they in turn can report the problem to MCSS to rectify.
- 5.2.d. Currently no areas require mandatory use of moorings.

5.3 ANALYSIS

- 5.3.a. **Strengths:** Currently, the mooring use system follows the guidelines stipulated by the mooring consultants, EMI, and are used in many other mooring projects.

The National Body should adopt the same system; because of multiple user nationalities pictorial representations should also be used to help ensure compliance with the guidelines

- 5.3.b. **Weaknesses:** Currently not all charter operators are currently briefing their clients on mooring use; not all Mooring Managers have “boat rangers” to assist users in correct use of moorings; currently insufficient information is included as to the risks of using moorings and the precautions needed on the user’s part.

These weaknesses are inherent in the use of moorings; the National Body will have to devote resources into a broad reaching public education campaign.

- 5.3.c. **Opportunities:** The introduction of the new “Mooring Use” card will allow a significant increase in user awareness; local media campaigns will also increase local awareness about the mooring buoy scheme and it’s purpose and best use; charter companies also have the opportunity to get charters to read and sign a moorings use document that

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indicates the correct method of use and also the attendant risks prior to taking a boat out and in so doing further increase the liability protection of the mooring providers.

This applies equally to the National Body as it does to the current situation.

- 5.3.d. **Threats:** Poorly informed and in-experienced boat users can seriously damage mooring installations resulting in premature and un-expected mooring failure; incorrect use and poor watch-keeping can result in damage to boat, user and reef system; poorly informed users may not recognise damaged or badly maintained moorings resulting in the failure of a mooring system.

Under the National Body the threats caused by in-experienced users remain; by enforcing regular maintenance the problem of identifying if a mooring is suitable for use should not be such an issue.

6. MOORING FEES

'Collecting fees and/or donations for the use of mooring buoys can be included in the management plan. Collection usually becomes a responsibility of the boat ranger or collection can be contracted to a concessionaire.....Collection of fees can be another opportunity for education and additional donation collection.....'

6.1 A NATIONAL BODY ~ The Concept Model

- 6.1.a. The national body should design and implement a fee system that will cater for a broad range of users and usage patterns; this should allow commercial operators to benefit from preferential rates for the purchase of long period passes, ie 6 monthly or yearly; shorter period passes should be sequentially more expensive.
- 6.1.b. The mooring use fee will cover the use of moorings throughout Seychelles.
- 6.1.c. Proceeds from the moorings fee will be used to install additional moorings and cover the expenses of regular maintenance and upkeep as required by the system protocols.

6.2 CURRENT SITUATION

- 6.2.a. Currently mooring fees are not routinely levied on the use of moorings, with the exception of overnight use in Marine Park Areas where the fee is sometimes levied, if a boat ranger is available to collect the fee.
- 6.2.b. The current system of separately managed mooring areas with differing costs and usage patterns does not allow the single fee concept.
- 6.2.c. Seychelles residents are currently not expected to pay park entry fees

6.3 ANALYSIS

- 6.3.a. **Strengths:** Currently yacht charter companies are used to paying mooring use fees in their operations in other countries and are easily capable of collecting the fees up-front provided that they are advised well in advance of the institution of such a scheme; pre-payment removes the necessity for on-site collection (and thereby removing the arbitrary multiple fee syndrome).
This fits in well with the proposed National Body and Single Fee proposition

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- 6.3.b. **Weaknesses:** Currently, until there are more moorings in place it will not be reasonable to introduce a mooring use fee on a nation wide basis; unless some form of funding is secured there is a limit to the number of additional moorings that are likely to be placed.

The National Body, with financial back-stopping from Government, should be able to install the number of moorings needed to make a fee paying system a viable and 'value for money' option.

- 6.3.c. **Opportunities:** The introduction of a nation-wide mooring fee would be a major advantage to boat users; collection of the fee in advance would allow for a cost effective administration of income collection; this is really only feasible under the National Body concept.

- 6.3.d. **Threats:** Without stakeholder co-operation in the design and management of the programme there are bound to be areas of conflict; it is important for any National scheme to apply across the board and as such there must be clear benefits to stakeholders otherwise some areas will opt-out and so negate the whole purpose of a single fee system.

7. CONCLUSION

Exercising Reasonable Care: A Three Part Duty

Based on the discussion of United States and English law regarding the responsibility of mooring buoy providers, a general principle becomes clear that is broadly applicable: the best method of reducing the risk of liability is for a private organisation or government body involved in a mooring project to take precautions by exercising reasonable care and good judgement in their activities.

Parties involved in mooring systems will have exercised reasonable care when mooring buoys are properly installed and maintained and the users adequately informed. Consequently parties engaged in a mooring system project should exercise a three-part duty in order to provide the greatest protection against the risk of liability.

First, parties must be able to prove that their mooring buoys have been properly installed. Consequently, the installation of mooring buoys must be well documented. This should probably include, among other items, the type of buoy, the manufacturer, the serial number, who installed a given mooring buoy, and when and how it was emplaced. In addition, proven mooring designs should be used for these projects.

Second, parties must be able to show that their moorings are properly inspected and maintained. Therefore, parties involved in mooring buoy projects should design and implement programmes to regularly inspect and maintain moorings which they have installed. These programmes should also be well documented with information about who inspected the mooring buoys; when the inspection took place; notations on the condition of the mooring; recording of repairs; and taking preventative steps of regularly changing mooring chain, mooring line, and other hardware subject to corrosion.

Third reasonable care should include the provision of warnings that are clear and detailed enough to allow boat owners and their users to use buoys in reasonable safety or at minimum risk. They should refer to the need for the user to inspect the integrity of the buoy, its attachments, and bottom fittings whenever possible.

Although these efforts may place a burden on private organisations and government agencies involved in mooring projects, actions as outlined above would go far in proving that reasonable care has been exercised. Using due care is also the best way to avoid accidents and prevent

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injury. Creating confidence in the security of mooring buoys is an important element in encouraging boaters to use them, and this confidence is an essential element to achieve the ultimate goal of mooring buoy systems preventing damage to coral reefs and sea-grass beds.

The setting up of a mooring buoy system is not lightly undertaken and with it comes a burden of responsibility on everyone involved in the installation, maintenance, inspection and use of the moorings. However, they have been proven to dramatically enhance the protection of marine structures and their allied eco-systems and as such can legitimately be regarded as a necessary step in the protection of Seychelles marine biodiversity. They would also supply the infrastructure that charter companies and visiting yachts expect of high class destinations and would allow for a more environmentally sustainable development of the industry.

The concept of a single user fee to access all mooring areas is extremely beneficial to the user but does create problems with management of installations in private or protected areas which legitimately fall under different management organisations with different needs, priorities and capabilities.

Provided that a system can be set up that ensures proper installations, regular maintenance, accurate record keeping, thorough communication and timely response to problems there should be no real barrier to the implementation of a National programme.

However, should any aspect not be properly attended to, especially the maintenance of the moorings, the user confidence in the system could diminish to the detriment of the investment in the programme.

References:

van Breda, Anita and Gjerde, Kristina '**Management of Mooring Buoy Systems**' , Centre for Marine Conservation, 1991 in *Mooring Buoy Planning Guide*, Professional Association of Diving Instructors

van Breda, Anita and Gjerde, Kristina '**The Use of Mooring Buoys as a Management Tool**' , Centre for Marine Conservation, 1991 in *Mooring Buoy Planning Guide*, Professional Association of Diving Instructors

Gjerde, Kristina '**Legal Liabilities of Mooring buoys**' , Centre for Marine Conservation, 1991 in *Mooring Buoy Planning Guide*, Professional Association of Diving Instructors

The full 92 page resource *Mooring Buoy Planning Guide*, containing the above references and compiled by the Professional Association of Diving Instructors (PADI) may be downloaded from the PADI Project Aware Web Site on:

<http://www.projectaware.org/americas/english/pdfs/moorbuoy.pdf>

ANNEX I

**Implementation Agreement
Between
The Marine Conservation Society, Seychelles
and
The Designated Organisation
For Mooring Buoy Programme**

This agreement details the undertaking of the Marine Conservation Society Seychelles, (MCSS) , to provide environmentally protective moorings for ***The organisation*** under the programme principally funded by the Dutch Trust Fund and Supported by the Global Environment Fund, Seychelles Marine programme.

The Marine Conservation Society Seychelles undertakes to install moorings in the positions indicated by the Society's Managers around ***Area XX*** subject to the following conditions:

1. The mooring positions and numbers of moorings to be installed are approved by the Moorings Steering Committee and the relevant authorities.
2. The local costs of installation will be met by ***The organisation***, such costs are itemised in schedule 1 attached here to and are payable in Seychelles Rupees.
3. MCSS will train ***The organisation*** staff in routine maintenance procedures.
4. ***The organisation*** staff will do routine maintenance of the moorings and will refurbish them as necessary with the correct equipment and tackle specified for each mooring installation.
5. Such equipment and tackle shall be purchased or supplied by ***The organisation*** either directly from external sources or through the MCSS; however if the latter is chosen the purchases must be paid for in a freely convertible currency.
6. MCSS will do an inspection of said moorings every six months and issue an inspection certificate accordingly, local costs of said inspection (schedule 2) to be paid by ***The organisation***.
7. Should the moorings be found to be inadequately maintained ***The organisation*** will refurbish them to standard within 4 weeks; if this is not done the moorings may be removed.

DISCUSSION DOCUMENT ON A NATIONAL MOORINGS PROGRAMME

ANNEX I

Should either party be unable to continue to provide the services indicated above they are at liberty to sub-contract their particular commitment to another individual, body corporate or organisation, subject to written notice to the other party.

This agreement drawn up in two copies and signed

For ***The organization*** by

_____, Director on ___/___/___

For the Marine Conservation Society, Seychelles by

_____ David Rowat, Director on ___/___/___

SCHEDULE 1 AGREED INSTALLATION COSTS

- Transport of equipment to and from installation site
- Transport of personnel to and from installation site
- Labour costs for installation work
- Fuel and consumable costs for installation process
- Meals and overnight accommodation if necessary to complete installations

The above costs to be charged on an at cost basis

SCHEDULE 2 AGREED INSPECTION COSTS

- Transport of personnel to and from installation site
- Labour costs for inspection work
- Fuel and consumable costs for inspection process
- Meals and overnight accommodation if necessary to complete inspections

The above costs to be charged on an at cost basis.