

## **Vision**

“The Marshall Islands, this nation of islands, will have lush green vegetation and its environment will be clean and intact. Its waters will be abundant with its resources. We, the people, living in love and harmony with one another and the environment, will continue to harvest our resources sustainably while enjoying our rich culture and traditions, a right which we have inherited from our forefathers.”

# The Republic of the Marshall Islands **BIODIVERSITY STRATEGY AND ACTION PLAN**

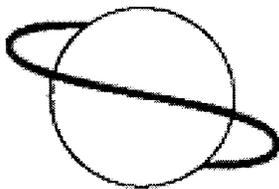
by

The Republic of the Marshall Islands  
National Biodiversity Strategy and Action Plan Team

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**Statement...**

## Preface

In 1997, UNDP Suva, through the Global Environment Facility secured US\$230,000 for the Republic of Marshall Islands to assist the Ministry of Resources and Development, through the Environmental Protection Agency to develop a National Biodiversity Strategy and Action Plan (NBSAP). The aim of the NBSAP is to facilitate the protection and sustainable use of Marshall Islands' biodiversity. Biodiversity and biological resources are fundamental to so many aspects of our lives - for example, health and medicine, food and nutrition, energy, land use, education and employment and thus the decision to prepare an NBSAP was a crucial one for the future of the nation and the people.

The project entitled *National Biodiversity Strategy and Action Plan and Report to the Conference of Parties* has been managed by the Environmental Protection Agency with many other Ministries and community groups since 1997. The plan was intended to reflect national aspirations and to build upon existing national strategies and plans. It has involved wide consultation with many sectors of the community and has resulted in a strategy and plan which are practical, implementable and sustainable, with a high level of community ownership.

The background to this process extends over some years. The Republic of the Marshall Islands was an early signatory to the United Nations Convention on Biological Diversity which opened for signature during the United Nations Conference on Environment and Development - the Earth Summit - in Rio de Janeiro, Brazil, in 1992. Long before the Earth Summit, of course, people were very concerned about the exploitation of biodiversity. The conflict between short-term exploitation of our resources and the pressure of use through new technologies and scientific activity, has placed a great deal of pressure on flora and fauna, particularly in developing countries.

The CBD, which came into force in 1993, represents a major step toward conserving natural resources in that it places the responsibility for conservation on respective nations. Other issues addressed include intellectual property rights, technology transfer, access to genetic resources, incentives, and the development of financial mechanisms to assist governments to implement the Convention.

In ratifying the Convention, the Government of the Republic of the Marshall Islands recognizes that it is responsible for conserving national biodiversity. It also agrees to take actions ensuring that natural resources will not be used in a non-sustainable fashion that would jeopardize the country's own biological diversity or that of neighbouring countries. The effectiveness of this Convention therefore depends to a large extent on the manner in which it is implemented at the national level.

The Convention has three main objectives:

- the conservation of biodiversity;
- the sustainable use of its components; and
- fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

To achieve its objectives, the Convention, which includes 42 articles, emphasizes national actions and details some techniques to achieve its goals. These include integrating biodiversity concerns into national decision-making, developing incentive measures, and promoting wider public and private sector involvement in the conservation and sustainable use of natural resources.

We must be careful to avoid the trap of thinking that merely by acceding to the Biodiversity Convention and by preparing reports and plans, that we will solve the problems concerning the preservation of certain species, or non-sustainable use of natural resources. The real responsibility rests with the communities – the governments, NGOs, the scientists, businesses and civil society. Only with full participation and co-operation of all groups, can our natural heritage be protected and sustainably managed for the benefit of future generations.

The Republic of the Marshall Islands must be congratulated for being the first Pacific Island country to develop its Biodiversity Strategy and Action Plan. The excellent document – ‘The Marshall Islands – Living Atolls Amidst the Living Sea’, gives a colorful and serious scientific base upon which the Strategy and Plan have been built. The Strategy and Plan reflect closely the outcomes of atoll and national consultations and point to a strong awareness in Marshall Islands that community resource management, formal and non-formal education, and recognition of traditional culture and practices, are the key to sustainable management of biodiversity.

What comes next for the Republic of the Marshall Islands? It is important that the momentum gained in the development of these documents be maintained and put to practical use. In the national workshop for example, the protection of marine biodiversity was identified as a strategic theme, with training and capacity building in resource conservation, and sustainable fishing practices the means to achieve the goal. In order to realise the goal of protecting the marine environment, Republic of the Marshall Islands will now have to commit resources and time to ensure that biodiversity is well managed for our children and our children’s children and beyond. How this may be done is for the nation to decide, but there are some valuable possibilities which may be considered and utilized. Several countries are working very seriously towards the establishment of Trust Funds for the Environment, and others have attempted Debt for Nature Swaps. The challenge is how to make the activities environmentally and economically sustainable. We have to deal with these long-term issues and as responsible citizens, not be content with merely producing a report and action plan which may never be implemented or enforced.

The real challenge now is to have the political will to see the Strategy and Plan translated into meaningful activity. We at UNDP are confident that the Republic of the Marshall Islands can meet this challenge.



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All of us who were involved with this project are very appreciative of the support and assistance that was given by the United Nations Development Programme/Global Environmental Facility in Suva, Fiji. The funding and technical support, as well as other assistance and advice that we received from this agency, enabled us to produce this report, and hence, be able to compile and preserve important knowledge about the biodiversity of the Marshall Islands in a way that will be accessible to many people.

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## Purpose

THE purpose of this *Biodiversity Strategy and Action Plan* (BSAP) is to Assist the Marshall Islands to Plan for the Conservation of its biodiversity and for in the sustainable use of its biological resources. This is the first time that such a strategy and action plan has been formulated for the country. It provides an opportunity for the government of the Republic of the Marshall Islands to integrate principles of sustainable resource management and biodiversity conservation into the national development planning processes. As the Marshall Islands is heavily dependent on its natural resources, and its people have a close relationship with their biodiversity, the need for integration is very important. Sustainable development in the Marshall Islands is conditional upon the conservation of its biodiversity and sustainable management of its natural resources.

The BSAP has been prepared in response to Article VI of the Convention of Biological Diversity, which requires all contracting parties to:

“(a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological resources . . .”

and “(b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.”

## Process for Preparation

THE Biodiversity Strategy and Action Plan was prepared through a process of consultation with the communities in six representative atolls and islands of the Marshall Islands and with the various stakeholder groups in Majuro.

These consultations culminated in a National Workshop, attended by representatives of 26 atolls and islands. The following strategy – Vision, Goals, and Action Plan – was decided by the participants of the National Workshop. This was formulated in Marshallese and have been translated into English for this report. In order to keep the meaning conveyed in Marshallese, the English translation sometimes appears to be trivial or simplistic. This is due to the difficulties of conveying the subtleties and complexities of meaning inherent in a language such a Marshallese, where a simple word can convey a whole range of meanings to fluent speakers of the language.

For example, the word “mo” can be translated as “conservation site”. It can mean the concept of conservation, as well as traditional skills and knowledge about the conservation of a particular site, including the way in which that conservation site is protected.

## Principles for Biodiversity in the Marshall Islands

THE following principles are proposed to guide the conservation and sustainable use of biodiversity resources in the Marshall Islands:

### ② Values

The Constitution of the Republic of the Marshall Islands states “all we have and are today as people, we have received as a sacred heritage which we pledge ourselves to safeguard and maintain.” This places an obligation on the country to conserve its biodiversity resources as a sacred heritage from our forefathers, for the benefit of present and future generations.

### ② Governance and Sovereignty

Responsibility to set the direction for conservation and sustainable use of the Marshall Islands’ biodiversity is a joint responsibility of the central government (Cabinet, Nitijela, and Council of Iroij), and the local governments.

### ② Responsibility

For conservation and sustainable use of biodiversity lies with all stakeholders: central government (ministries, statutory agencies and authorities), the traditional system (iroij, alap and dri jermal), and the private sector.

### ② Participation

By all stakeholders in the planning, implementation and monitoring of the BSAP is essential for conservation and sustainable use of biodiversity

### ② Access to Information on Biodiversity and Biological Resources

Is necessary for all stakeholders to enable them to make informed decisions on resource management issues. This information would bring together traditional knowledge and skills with modern scientific methods and principles.

### ② Capacity Building

Is necessary to enable all stakeholders to carry out their responsibilities effectively by bringing together traditional knowledge and skills with modern scientific methods and principles.

### ② Right to Develop

All the people of the Marshall Islands have the right to development based on the conservation and conservation and resource management practices.

### ② Conservation of the Nation’s Biodiversity

Requires recognition of the contribution of traditional culture, customs, and values to conservation and resource management.

### ② A Holistic Approach

Is necessary to integrate conservation and sustainable use of biodiversity with the planning processes at the national and local levels is necessary to promote sustainable development.

### ② Precautionary Principle

The lack of scientific certainty should not be used as a reason for postponing actions to prevent or minimize threats to biodiversity, or the sustainability of biological resources.

## Priorities

WORKSHOP participants decided on the priority goals for the BSAP through an analytic matrix-ranking exercise. This exercise was carried out after two days of analysis to draw out the various issues involved, followed by a planning exercise to work out how the problems identified are to be addressed by the action plan.

The participants, after formulating the goals, assessed each goal against the following criteria:

- ②The urgency of the problem
- ②The numbers of people affected
- ②Whether the goals were achievable and realistic
- ②Their potential contribution to sustainability of biological resources

Participants gave each goal a score out of 10 for each criterion, with extensive discussion about the issues before each of the scores was decided. These priorities provide the guidance for the drawing up of the action plans so that those issues considered to be the most important by the workshop participants are given the highest priority during the implementation.

rank	goal	goal #	score
1	Activate traditional “mo” conservation sites	A1	40
2	Training and capacity building toward conserving our resources	B1	35
3	Apply traditional skills and knowledge	C1	34
4	Imposition of fines and penalties on those who destroy our resources	A2	33
5	Sustainable fishing practices	B2	30
6	Self-reliance through traditional values and cultures	D1	–
7	People taking the initiatives in planting trees and crops	A3	30
8	Population awareness	D2	29
9	Institute learning of the culture through the traditional way of passing knowledge from elders to the young, through schools, community meetings and workshops	C2	29
10	Working cooperatively and justly with one another	D3	26
11	A move toward more uses of local products	C3	26
12	Clean up the environment	D2	–

The main concern of the workshop centered on the breakdown of existing order, particularly the loss of controls over the use and conservation of their resources. The traditional system has been weakened by the introduction of modern governing systems, which have not yet been able to put into place the necessary controls and practices. The first priority is therefore a revival of the traditional system in conjunction with the modern system of government.

The workshop recognized that this required action and selected three priority goals, which would address this.

These goals are to do with capacity building, the application of traditional skills and knowledge, and the enforcement of rules and controls.

## Biodiversity Goals Proposed by the National Workshop

DURING the National Workshop, which brought together participants from inhabited islands and atolls, twelve goals were proposed. These fell into four strategic themes –

### **A – Conservation of Biodiversity and Biological Resources**

- A1 – Activate traditional “mo” conservation sites
- A2 – Imposition of fines and penalties on those who destroy our resources
- A3 – People taking the initiatives in planting trees and crops

### **B – Protection of the Marine Environment**

- B1 – Training and capacity building toward conserving our resources
- B2 – Sustainable fishing practices

### **C – Traditional Culture and Practices**

- C1 – Apply traditional skills and knowledge
- C2 – Institute learning of the culture through the traditional way of passing knowledge from elders to the young, through schools, community meetings and workshops
- C3 – A move toward more uses of local products

### **D – People and Biodiversity**

- D1 – Self-reliance through traditional values and cultures
- D2 – Population awareness
- D3 – Working cooperatively and justly with one another
- D4 – Clean up the environment

The National Workshop participants were from all outer-island communities and Majuro, and included traditional leaders, representatives from local governments, women’s groups, youth and church groups. No government officials or private sector representatives from the major urban areas attended the workshop. As a result, the discussions focused on resource management and conservation issues at the grassroots level.

Subsequent discussions with the planning group and the BSAP Steering Committee identified two further strategic themes that were considered to be urgent issues facing the country in terms of biodiversity conservation and the sustainable use of biological resources. These issues are likely to have a significant impact on the four strategic themes identified by the National Workshop, and particularly on those goals considered to be a priority.

The BSAP Team therefore formulated four additional goals, based on discussion with the relevant government agencies. The additional goals were circulated with the results of the workshop so that all participants were able to see for themselves how these additional goals relate to, and impact on, those goals identified by the National Workshop.

### **E – Biotechnology and Biodiversity**

- E1 – Conservation of genetic diversity
- E2 – Protection of intellectual property rights (IPR)

### **F – Biosafety and Biodiversity**

- F1 – To have in place legislation and regulatory frameworks for biosafety
- F2 – Establish systems to implement new or revised legislation and regulation of biosafety

## Strategic Theme A – Conservation of Biodiversity and Biological Resources

THE National Workshop decided that the desired outcome for the Marshall Islands (expressed in the Vision) was to have lush, green vegetation. This is derived from the Marshallese word “kitokmaro”, which applies to vegetation and has come to mean “green and fruitful”. A well tended land will be “kitokmaro”, bearing full and healthy fruits for use as food and vegetation providing a pleasant environment for the people.

People of the Marshall Islands have a strong bond with the sea and its many biodiversity resources because their existence has always depended on them. This close bond is expressed by the second part of the desired outcome: a marine environment that is healthy, clean and full of resources.

The third part of the desired outcome is to maintain the resources in a fashion that will allow future generations to harvest and enjoy them as well. The overriding factor for achieving the sustainable use of these resources is for the community to have full cooperation between all users of the resources.

Achieving this outcome would require action on three fronts:

- ②All people taking responsibility for their own actions
- ②Enforcement of rules and controls by all three systems (National, Local, Traditional)
- ②The revival of traditional knowledge and skills in combination with modern scientific principles

### GOAL A1 – Activate Traditional “Mo” Conservation Sites

*This view was expressed to point out that caring for our resources has been neglected as the society goes through a transitional period from traditional systems of governance. When the modern system of government was established, it inherited some of the duties and responsibilities of the former governing system, but not all. Some functions, such as maintenance of “mo” have ‘fallen through the cracks’ during the process of shifting between the two systems.*

#### Key Actions –

1 – An awareness-raising program to promote knowledge and awareness of “mo” among all stakeholders, especially youth. This would be part of the general program of awareness-raising on biodiversity through workshops on all atolls and islands, building on the atoll consultations during the BSAP process

2 – Collecting of information on knowledge and practices of “mo”. During the preparation of the National Report, the BSAP, and the atoll workshops began the task of collection information and knowledge about traditional practices of “mo”. However, a more extensive effort is needed to ensure that this information is comprehensive and complete.

This comprehensive information will need to be stored in a safe but accessible place. This will require a program to strengthen the Alele Museum to enable them to archive knowledge and information about “mo” and other traditional systems of conservation and resource management.

3 – Start a national consultation process to look at the relationship between “mo”, the sustainable use of natural resources, and land tenure systems. The result of this consultation would

contribute to the revision of legislation and ordinances.

4 – Incorporate “mo” into legislation and ordinances so that those areas considered to be of biodiversity importance could be designated as conservation areas or “mo”. This would be done through a review and revision of existing legislation and ordinances (see goal A2) to identify those that impact on resource management and biodiversity conservation

### **GOAL A2 – Imposition of Fines and Penalties on Those Who Destroy Our Resources**

*This harsh statement was voice at the National Workshop to express the serious situation whereby there is a breakdown of enforcement of rules and controls for the sustainable use of resources at all levels – national, local government and traditional systems*

#### **Key Actions –**

1 – Review and revise existing national legislation and local government ordinances. The review will look at how traditional systems can be incorporated into all legislation to do with resource management. The revision of legislation and ordinances would aim to bring together traditional systems and modern scientific principals of resource management.

2 – A program to review and revise enforcement procedures at the national and local levels. This would include ensuring that fines and penalties are adequate, the enforcing authorities are adequately resourced, roles and responsibilities are clarified, and training is provided for enforcement staff.

### **GOAL A3 – People Taking the Initiatives in Planting Trees and Crops**

*The National Workshop felt that people had neglected planting of trees and crops. They therefore emphasized that all individuals should take responsibility for planting of trees and crops to restore the original lush vegetation and replenish food crops.*

#### **Key Actions –**

1 – A program to increase community awareness of the importance of planting trees and crops, and organizing communities to initiate community-based actions in Majuro and in the outer islands and atolls. This program would begin with families and involve young people, working through NGOs, church groups, women’s groups, and the land tenure system.

2 – Strengthen the existing Agriculture Extension systems so that they have an active presence in the outer islands and they are able to provide the community-based program with the necessary support.

3 – More research on indigenous crop species and farming systems to provide the community based program with plant cultivars suitable for the local environment.

## **Strategic Theme B –**

## Protection of Marine Biodiversity

THE National Workshop recognized the importance of a healthy marine environment that has enabled the people of the Marshall Islands to reap the benefit of their country's abundant resources. In order to pass on the same opportunity to the future generations, the present generation has to develop resource use practices that are sustainable, and not use the marine environment as a disposal site for solid and liquid waste.

In order to achieve this, resource users and policy makers need to have a better understanding of the marine ecosystem. This will require capacity building at many levels. Decision makers at national and local levels, policy makers, resource owners and users.

The Workshop formulated two goals for this strategic theme –

### GOAL B1 – Training and Capacity Building Toward Conserving Our Resources

*Workshop participants conveyed the need for training in both traditional practices as well as the modern and scientific principles to help revive “mo”. This is necessary because many of the traditional practices and knowledge about management of marine resources are lost. The reliance on modern methods at the expense of traditional knowledge has led to unsustainable practices. The Workshop recognized that both systems are necessary, and training and education that bring together the knowledge and methods of the two systems are needed.*

#### Key Actions –

- 1 – Incorporate principles of sustainable resource management, based on traditional and modern knowledge, into the education system. This will require curriculum changes at primary and high school levels, as well as a provision of education resources for students and teachers, such as the National Report. The government should encourage people to study resource management at the university level by providing scholarships.
- 2 – Encourage all university students to take courses in resource management practices in addition to the main areas of study.
- 3 – In-house training for all government staff and decision-makers in the principles of modern and traditional systems of resource management.
- 4 – Combine the program for community awareness with training for resource users in sustainable resource use practices. The trainers for this would include those having traditional knowledge as well as those with modern scientific knowledge. This will enable the training to combine the best practices from both systems.

### GOAL B2 – Sustainable Fishing Practices

*Since traditional fishing practices were not always effective, and because of pressure of increased population, they were abandoned in favor of modern fishing methods. These modern methods are more efficient, but unsustainable. The National Workshop recognized that there is a need to develop systems that bring together effective modern methods, while applying traditional concepts of sustainability.*

#### Key Actions –

- 1 – A program of research on fishing methods that combine modern methods with traditional

knowledge and skills about sustainable methods of fishing. This program would need to focus on local conditions so that the results are applicable to a particular environment and use of knowledge of local people.

2 – A program of community-based education and training in sustainable fishing practices. This could be combined with the community awareness and education program. The training would involve local people holding traditional knowledge, as well as fisheries staff from national agencies and other organizations.

3 – Improved enforcement of legislation and ordinances at the national and local levels. This would be done as part of the review and revision of legislation and ordinances in Goal A2. The emphasis would be on combining modern methods with traditional knowledge and skills about sustainable practices of resource management.

## **Strategic Theme C – Traditional Culture and Practices**

IN THE PAST, traditional systems had enabled people to have a sustainable lifestyle. However, due to changes in lifestyles, expectations, and increase in population, these traditional systems are no longer able to cope. As a result, they are being neglected and considered no longer to be relevant. Combined with the breaking down of the extended family system, the change whereby traditional knowledge was pass on from generation to generation has been broken. There is a need to strengthen research and development on resource use practices so that traditional knowledge is fully integrated with more modern scientific principles.

### **GOAL C1 – Apply Traditional Skills and Knowledge**

*The National Workshop stressed that a number of areas needed to be addressed if traditional skills and knowledge are to be applied for the sustainable use of biodiversity resources. These include the education, empowering legislation, clear delineation of roles and responsibilities for resource management issues, and research to bring together traditional skills and modern scientific methods.*

#### **Key Actions –**

1 – Support current systems of vocational and academic training to incorporate skill development in local house-building, canoe-making and handicraft made from local products.

2 – Support current NGO initiatives in promoting local canoe-building skills, and other traditional arts and craftsmanship.

3 – Revise school curricula to promote an understanding of the benefits of using local products.

4 – Review and revise resource management legislation to incorporate traditional concepts of resource management. (This would be done as part of the actions for Goal A2).

### **GOAL C2 – Institute Learning of the Culture Through the Traditional Way of Passing Knowledge from Elders to the Young, Through Schools, Community Meetings and**

## Workshops

*The National Workshop recognized that modern lifestyles means that young people no longer had contact with their elders. This was due to migration from the outer islands and rural areas to the urban centers for education and employment, resulting in a breakdown of traditional systems for passing on knowledge and skills from one generation to the next. The solution suggested was to bring in elders to help pass on their traditional knowledge to young people through the school systems, community meetings and workshops.*

## Key Actions –

1 – Strengthen the curriculum in elementary and high schools by bringing in elder men and women to pass on traditional knowledge about resource management and traditional use of biodiversity. These elders should be provided with training in classroom methods.

2 – Strengthen and support current NGO initiatives such as Youth to Youth and the Ministry of Internal Affairs Mobile Team to enable them to extend their activities to include resource management issues.

## GOAL C3 – A Move Toward More Use of Local Products

*Traditional skills for building of houses, boats and fishing gear are not used any more as new materials are being used instead. Imported tin roofing, plywood, and lumbers have taken the place of traditional thatch roof houses. Outboard boats have replaced outrigger canoes in much of the urban centers as well as outer island communities. Traditional fishing traps and other methods have been set aside for modern fishing methods. R & D is needed to make better use of local products by combining traditional knowledge and modern technology.*

## Key Actions –

1 – Research and development to make more effective use of local material to meet the country's needs.

2 – Strengthen current government initiatives to promote more use of local products for food, handicrafts, housing, fishing boats and fishing gear.

## Strategic Theme D – People and Biodiversity

THE main threats to the sustainable use of biodiversity resources identified by the National Workshop were overpopulation and changing lifestyles. As the population increases beyond the carrying capacity of the environment and society, a number of changes have occurred. These include increased pollution and waste, and unsustainable exploitation of resources. At the same time, there is a breakdown of social values, mores and extended-family structures, and the loss of social cohesion. These have contributed to a dependency syndrome.

## GOAL D1 – Self-reliance Through Traditional Values and Culture

*The National Workshop felt strongly that the people of the Marshall Islands need to stand on their own two feet. Changes in lifestyle and values had resulted in consumerism and a dependency on outside resources. Reactivation of traditional culture, in partnership with*

*modern technology, would help promote self-reliance.*

### Key Actions –

- 1 – Strengthen public awareness and education campaigns to promote understanding of traditional knowledge and skills. For example, suitable role models could be used to promote specific ideas. This would be done with actions under Goals A1 and A3.
- 2 – Support government to initiate policies on reduction dependency on imported food and materials. This would be done in consultation with all stakeholders (communities, traditional leaders, landowners, local governments, NGOs, churches, and the private sector).
- 3 – Strengthen research and development to develop and demonstrate practical benefits of using products and technologies that combine traditional knowledge and modern methods.

### GOAL D2 – Population Awareness

*Overpopulation was identified as the major problem affecting the sustainability of the biodiversity resources of the country. There is an urgent need to reduce the rate of both population increase and urbanization. The population policy needs to be revised and implemented so as to involve all sectors of the community through an intensive program of awareness-raising and education. This would enable all people to take responsibility for their own actions.*

### Key Actions –

- 1 – Revision and implementation of population policy, combined with allocation of adequate resources and monitoring. A more intensive public awareness campaign and education to ensure that all sectors of the community are involved.
- 2 – Improve employment prospects and services in the outer atolls and islands. This would require greater allocation of government funding and external aid, and promotion of private sector investment for outer island development to promote resource based industries such as agriculture, fisheries and handicrafts.
- 3 – Review the immigration policy to determine impacts on increases in the urban population

### GOAL D3 – Working Cooperatively and Justly With One Another

*Participants at the National Workshop felt strongly that there needs to be a bond in the community for it to function effectively. Leaders need to be trustworthy. All people need to respect each other. This would help to build unity and partnership so that people work together for the common good of the country as a whole. This is an issue that affects the system of governance and social structures. Actions in this area are part of a wider debate and therefore outside the scope of this BSAP. Possible areas for action would include:*

*trust building at all levels of governance – traditional and community, local and national  
accountability and transparency at all levels*

*clarification of roles and responsibilities of different sectors and levels of government*

*(These could be developed into specific actions during the consultation phase).*

## **GOAL D4 – Clean Up the Environment**

*People need to act right away to rid their environment of rubbish and harmful substances. They must start this process by cleaning their own immediate surrounding and to change their personal habits of carefree disposal of rubbish. All sectors, including government and private sector, must exercise greater efforts in addressing the degradation of the environment.*

### **Key Actions –**

- 1 – Strengthen public awareness and education programs for people to clean their immediate environment and reduce their dependence on imported food, non-disposable packaging and other pollutants.
- 2 – Strengthen current initiatives in the major urban areas to improve solid waste management.
- 3 – Government policy to discourage use of imported non-decomposable packaging materials.
- 4 – Allocate adequate resources to regulatory agencies to ensure enforcement of existing legislation and ordinances on pollution and waste disposal.
- 5 – All public and private sectors to work together to promote “reduce, reuse and recycle”.

## **Strategic Theme E – Biotechnology and Biodiversity**

BIOTECHNOLOGY is in its infancy in the Marshall Islands. Conventional breeding techniques have been used for the improvement of food crops, and to a more limited extent, some marine species. However, there is considerable potential for improvement potential for improving the quality of food crops, marine food resources, and other species through biotechnology. We also need to ensure that the genetic diversity of traditional crops, native plants and marine species is somehow conserved for future use.

Biotechnology also offers significant potentials for the use of products from biodiversity for pharmaceutical and other purposes, such as scientific research, cosmetics, and sources of resistance to pests and diseases. The benefits from the use of biodiversity for biotechnological purposes should be shared with the people of the Marshall Islands. These issues are to be addressed through two goals.

## **GOAL E1 – Conservation of Genetic Diversity**

*The country has limited but significant genetic diversity which provides resources for the people. The diversity of species such as pandanus and coconuts, as well as marine species, provides both food as well as having cultural importance. These could easily be lost through the accidental or deliberate introduction of invasive species.*

*The country is not fully aware of issues such as the importance of genetic diversity and the impact of biotechnology. For example, there may be significant potential in many of the native species for scientific research for a variety of purposes. It is important that the existing genetic diversity is not lost. This requires research on conservation and the use of genetic diversity.*

### **Key Actions –**

1 – Research, including consultation with elders to document the genetic diversity of significant plant, animal and marine species. This will look at both the scientific potential and the cultural importance on the biodiversity.

2 – Establishment of “in situ” and “ex situ” gene banks of significant genotypes, of both scientific and cultural importance.

### **GOAL E2 – Protection of Intellectual Property Rights (IPR)**

*At the present, there is no legislation on IPR in the Marshall Islands. The issues to do with IPR concern the protection of traditional knowledge, the use of, and access to, indigenous sources of genetic materials for biotechnology purposes, and the sharing of benefits from bioprospecting. It is important that due attention be given to the protection of traditional knowledge and skills, particularly those that are likely to have a commercial potential, such as traditional medicines. There is also a need to ensure that access to the genetic resources and traditional knowledge is not denied for biotechnology purpose, but that provision is made for the equitable share of benefits of their use between the traditional owners and those developing the biotechnology potential.*

### **Key Actions –**

1 – Research to document traditional knowledge and skills on the uses of biodiversity. This research would be carried out with the informed and prior consent of the owners of this knowledge. The aim of the research would be to identify those skills and knowledge with a potential for further exploitation and application.

2 – Preparation of legislation on IPR that:

a – protects the rights of indigenous owners of genetic resources and traditional knowledge

b – provides access to that knowledge and resources with the prior informed consent of the owners and provided that these owners have an equitable share of the benefits from the use of that knowledge and genetic materials.

## **Strategic Theme F – Biosafety and Biodiversity**

FOR the Marshall Islands, there are a number of biosafety issues. The most urgent issue at the moment is that of quarantine – the deliberate or accidental importation of organisms that

may or may not have been genetically modified. This would include exotic species being introduced or native species that have been modified outside the country and reintroduced. Both types of introduction are threats to marine and land biological resources and biodiversity. (See Chapter 3 of National Report). Invasive species pose one of the biggest threats to the sustainability of biodiversity resources in the country.

The second issue is the possibility of field testing in the Marshall Islands of genetically modified organisms (GMOs), that have been modified overseas. At present, there are no restrictions or controls on the importation of these organisms. Biosafety issues to do with these would have to be dealt with along with quarantine issues.

The third issue is that of the biosafety of imported foods. As a country heavily reliant on imported foods, the Marshall Islands is particularly vulnerable. The country does not have the resources to test the safety of genetically modified foods, neither does it have access to information that allows authorities to know whether imported foods are genetically modified or not, and the potential risks to the environment and human health.

## GOAL F1 – To Have in Place Legislation and Regulatory Framework for Biosafety

*The current legislation is outdated. It does not deal with the issues of biosafety such as the importation of GMOs or food products derived from GMOs. The legislation does not provide for either environmental or social impact assessments, nor does it clearly define roles and responsibilities of different government agencies.*

### Key Actions –

1 – Review and revise existing legislation on biosafety would include:

a – Quarantine provisions for the importation of new or genetically modified organisms.

b – Controls over the field testing of genetically modified organisms in the Marshall Islands by local and/or foreign organizations.

c – Controls over the importation of food products from genetically modified organisms. This includes mandatory labeling requirements, or the banning of imported genetically modified foods as appropriate.

d – Provisions for environmental impact assessments and social impact assessments as well as defining responsibilities so as to avoid conflicts of interest.

2 – Strengthen enforcement procedures for infringement of legislation and regulation.

## GOAL F2 – Establish Systems to Implement New or Revise Legislation and Regulation of Biosafety

*At the present, the system that is responsible for biosafety issues is not adequate for a number of reasons. There is a lack of capacity of accessing risks and dealing with technical issues, such as assessment of possible hazards from genetically modified organisms. This is aggravated by a lack of technical resources and of adequate financial resources. There is a conflict as regulatory functions are assigned to the agency also responsible for production. For example, MIMRA has the mandate for the development of marine resources, while at the same time, it is responsible for the quarantine of imported marine species.*

### Key Actions –

- 1 – Ensure that provisions for regulatory and productions are assigned to separate agencies and to different Ministers.
- 2 – Ensure that adequate training of staff is provided in risk assessment, risk management, environmental impact assessments and social impact assessments procedures.
- 3 – Awareness raising about biosafety issues for political leaders, relevant senior government officials, and the private sector.
- 4 – Ensure funding of biosafety systems through user pay charges or government funding.
- 5 – Establish linkages with national or regional organizations to supplement the technical know-how of biosafety in the Marshall Islands

## ACTION PLAN

THE Action Plan is the means by which the goals identified by the National Workshop are achieved through concrete actions. This plan takes into account the priorities identified by the National Workshop as well as the priorities in the additional goals on biotechnology and biosafety.

The Action Plan recognizes that there are there are certain common themes that run through the goals and key actions identified by the National Workshop. These are grouped under a number of key result areas, which are interlinked and interdependent. They bring together key actions from the priority goals which can be carried out together, as part of a concerted effort to implement the BSAP. These Key Result areas are –

- A – Awareness-raising and capacity building at the community level for resource users and owners.
- B – Strengthening the educational system.
- C – Review and revision of legislation and enforcement procedures
- D – Research and development

Within each Key Result, the goals are listed in the order of priority decided at the National Workshop, with the additional goals listed after those formulated by the workshop participants.

**Key Result A –  
Awareness Rising and Capacity Building at the Community Level for Resource Users and Owners**

Key Action	Responsibility
<b>Goal A1 – Activate “Mo”</b>	
promote knowledge and aware on “mo”	MIMRA, Agriculture, AI Mobile Team, EPA, local governments, NGOs
collect and document information on “mo”	CMI Library, Alele Library, MIMRA, Agriculture, EPA
consultation on “mo” and land tenure	Justice, Alele Museum, COI, Nitijela

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<b>Goal B1 – Capacity Building for Conserving of Resources</b>	
training in sustainable resource management	MIMRA, Agriculture, IA Mobile Team, EPA, local governments, NGOs, NTC
<b>Goal C1 – Apply Traditional Skills and Knowledge</b>	
support NGO training in traditional skills	MIMRA, Agriculture, IA, Alele, CMI, NTC
<b>Goal B2 – Sustainable Fishing Methods</b>	
community based training in sustainable fishing practices	MIMRA, IA Mobile Team, EPA, local governments, NGOs, NTC
<b>Goal D4 – Self-reliance</b>	
strengthen understanding of traditional skills and knowledge	MIMRA, Agriculture, IA Mobile Team, EPA, local governments, NGOs, NTC
<b>Goal A3 – Initiatives in Planting Trees and Crops</b>	
awareness of the importance of the planting of trees and crops	MIMRA, Agriculture, IA Mobile Team, EPA, local governments, NGOs, NTC
strengthen agriculture extension system	Cabinet, MIMRA, CMI
<b>Goal D2 – Population Awareness</b>	
strengthen community education on population	Population Council, MOHE, NTC, IA Mobile Team, NGOs, churches, women’s groups
<b>Goal C1 – Passing on of Knowledge from Elders to the Young</b>	
strengthen NGO initiatives and IA Mobile team	Cabinet, MIMRA, Agriculture, CMI, Population Council
<b>Goal D4 – Clean Up the Environment</b>	
awareness and education to reduce dependence on imported foods	MIMRA, IA Mobile Team, EPA, local governments, NGOs, NTC
<b>Goal F2 – Biosafety Systems</b>	
awareness rising about biosafety and biotechnology for political leaders, government officials, private sector	MIMRA, EPA, Agriculture, MOFAT, CMI

**Key Result B –  
Strengthen Education Systems for Principles for the Teaching of Sustainable Resource  
Management**

Key Action	Responsibility
<b>Goal B1 – Capacity Building for Resource Conservation</b>	
revision of curricula to incorporate principle of sustainability	MOE, MIMRA, Agriculture, EPA, local governments, churches
provision of education resources	CMI, MIMRA, EPA, NTC

encourage resource management at college and university level	Cabinet, National Scholarship Board, CMI, MOFAT
in-house training for government staff and decision makers	NTC, MIMRA, Agriculture, EPA, CMI, USP
<b>Goal C1 – Applied Training Skills and Knowledge</b>	
incorporate traditional skills into vocational and academic training	NTC, MOE, CMI, community elders, NGOs, churches
revision of school curricula to promote the understanding of benefits using local products	MOE, local governments, churches, MIMRA, Agriculture, EPA, private sector
<b>Goal A2 – Enforcement of Legislation</b>	
training for enforcement staff	MOJ, AG, COI, local governments
<b>Goal B2 – Sustainable Fishing Practices</b>	
combine traditional and modern concepts of resource management in school curricula	MIMRA, CMI, MOE, community elders, NGOs, local governments
<b>Goal D2 – Population Awareness</b>	
require school curricula to include population issues	MOE, Population Council, local governments
<b>Goal C2 – Passing on of Knowledge from Elders to the Young</b>	
use elders in the community to teach traditional knowledge in the schools	community elders, local governments, CMI, MOE, NTC, churches
<b>Goal D4 – Clean Up the Environment</b>	
school curricula to include environmental studies	MOE, EPA, CMI, local governments, churches
<b>Goal F2 – Biosafety Systems</b>	
training for staff in risk and IA procedures	EPA, MIMRA, CMI

**Key Result C –  
Review and Revise Legislation and Policies, and Strengthening of Enforcement Systems**

Key Action	Responsibility
<b>Goal A1 – Activate “Mo”</b>	
review and revise legislation to incorporate “mo” into resource management and biodiversity legislation	Cabinet, Nitijela, COI, AG, MIMRA, Agriculture, EPA, local governments
<b>Goal C1 – Applied Traditional Skills and Knowledge</b>	

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review and revise resource management and legislation management to incorporate traditional concepts	Cabinet, Nitijela, COI, AG, MIMRA, local governments
<b>Goal A2 – Imposition of Fines and Penalties</b>	
review and revise legislation national legislation and local government ordinances to incorporate traditional systems	Cabinet, Nitijela, COI, AG, MIMRA, Agriculture, EPA, local governments
bring together traditional systems and modern scientific principles of resource management	MIMRA, Agriculture, EPA, CMI, Alele Museum, community elders, NGOs
review and revise national ordinances and enforcement procedures	MIMRA, Agriculture, EPA, AG, Cabinet, COI, local governments
<b>Goal B2 – Sustainable Fishing Practices</b>	
improve enforcement of legislation and ordinances on national and local levels	MIMRA, Agriculture, EPA, AG, Cabinet, COI, local governments
<b>Goal D1 – Self-reliance</b>	
policy and legislation on reducing dependence on imported foods and materials	Nitijela, Cabinet, MIMRA, Agriculture, EPA, AG, local governments, Chamber of Commerce, private sector
<b>Goal D2 – Population Awareness</b>	
revision and implementation of population policy	Cabinet, OPS, MOHE, IA, NGOs
review of immigration policy	Cabinet, Nitijela, MOFAT, COI
<b>Goal D3 – Working Together Cooperatively</b>	
trust building at all levels of governance	Cabinet, Nitijela, COI, local governments, churches, NGOs
accountability and transparency at all levels	Cabinet, Nitijela, COI, local governments, churches, NGOs
Key Action (continued)	Responsibility (continued)
<b>Goal C3 – More Use of Local Products</b>	
government initiatives to promote more use of local products	MIMRA, Agriculture, EPA, private sector, local governments, COI, Chamber of Commerce
<b>Goal D4 – Clean Up the Environment</b>	
policy to discourage the use of non-decomposing packaging	Cabinet, EPA, local governments, private sector, Chamber of Commerce
allocate adequate resources for enforcement	Cabinet, EPA, local governments
<b>Goal E2 – Protection of Intellectual Property Rights</b>	
legislation to protect the rights of genetic resources and traditional knowledge	Cabinet, Nitijela, COI, AG, MIMRA, EPA, MOHE, Agriculture, COI, NGOs
<b>Goal F1 – Legislation and Regulation for Biosafety</b>	
review and revise the existing legislation for the importation of new or genetically modified organisms, including environmental impact assessments and social impact assessments	Cabinet, Nitijela, COI, AG, MIMRA, EPA, MOHE, Agriculture, COI, NGOs
legislation for field testing in the Marshall Islands	Cabinet, Nitijela, COI, AG, MIMRA, EPA, MOHE, Agriculture, COI, NGOs

legislation for importation of food products from genetically modified organisms	Cabinet, Nitijela, COI, AG, MIMRA, EPA, MOHE, Agriculture, COI, NGOs
<b>Goal F2 – Biosafety Systems</b>	
provisions for regulatory and production functions to be separated	Cabinet, Nitijela, AG

### Key Result D – Research and Development

Key Action	Responsibility
<b>Goal A1 – Activate “Mo”</b>	
collect and document knowledge and practices of “mo”	MIMRA, Agriculture, EPA, Alele, CMI
analyze information on “mo” so as to contribute to the review of legislation	MIMRA, Agriculture, EPA, CMI
<b>Goal B2 – Sustainable Fishing Practices</b>	

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research on fishing practices that combine modern methods and traditional knowledge	MIMRA, EPA, CMI
<b>Goal D1 – Self-reliance</b>	
demonstration of practical benefits of using products and technology that combine traditional knowledge and modern methods	MIMRA, Agriculture, NGOs
<b>Goal A3 – Initiative in Planting of Trees and Crops</b>	
strengthen research on indigenous crop species and farming systems	MIMRA, Agriculture, local governments, CMI, NTC
<b>Goal C3 – Promote Local Products</b>	
strengthen research into using local materials to meet country's needs	MIMRA, Agriculture
<b>Goal E1 – Conservation of Genetic Diversity</b>	
research to document the genetic diversity of plant, animal and marine species	MIMRA, Agriculture, CMI, Alele, NGOs, local governments
establishment of gene banks for significant species	MIMRA, Agriculture
<b>Goal E2 – Protection of Intellectual Property Rights</b>	
research to identify skills and knowledge with the potentials for further application	MIMRA, Agriculture, CMI, NGOs

## Monitoring

Article 7 of the Convention on Biological Diversity requires all members of the Conference of Parties to –

- a – “Identify components of biological diversity important for its conservation and sustainable use . . . .”
- b – “Monitor, through sampling and other techniques, the components of biological diversity”

There has not been any coordinated program of monitoring biological diversity components in the Marshall Islands. There have not been any consistent efforts at monitoring in the past, apart from the attempts made in the 1950s to monitor the impact of nuclear testing on biological

diversity in the atolls used for the tests.

The national consultation process for the BSAP project, including the atoll and national workshops, has identified the significant components of biological diversity that are considered to be important by the traditional owners and other users of these resources. The National Report brings together traditional knowledge and concepts of biodiversity and the use of biological resources with known scientific information on biodiversity and biological resources. The report, along with the information gathered at the atoll and national workshops, provides baseline information on the components of biological diversity that are of scientific importance as well as having cultural value and significance.

## BIODIVERSITY COMPONENTS

The components of biological diversity identified during the BSAP process include –

- 1 – Ecosystems of scientific and cultural significance, such as the northern atoll of Bikar
- 2 – Species of biodiversity significance from a traditional viewpoint and from a scientific perspective, such as the Micronesian pigeon
- 3 – Biological resources that are significant in the Marshallese culture, as well of being of scientific interest, such as the cultivars of pandanus in the country
- 4 – Traditional concepts and practices about conservation of biological diversity, such as “mo”
- 5 – Traditional knowledge about biological diversity and biological resources, their origin and cultural significance
- 6 – Traditional knowledge about resource uses, such as the different types of fishes and their uses, medicines, and food preparation
- 7 – Traditional skills and resource use practices, such as boat building and fishing methods

Although the National Report provides this baseline information, its limitations have to be recognized. The report was prepared from information collected through consultation on only six atolls and islands, less than 25% of the inhabited atolls in the Marshall Islands. The information summarized in the National Report will need to be augmented and completed as part of the follow-up to the BSAP. The awareness-rising and training activities in Key Result Area A, combined with the Research and Development Activities in Key Result Area D, will help to complete the picture of the significant components of biological diversity in the country.

## THREATS TO BIODIVERSITY

The National Report and the atoll and national workshops, along with information on biological diversity collected by the CMI Library, also identified the current threats to the conservation and sustainable use of biological diversity in the Marshall Islands. Some of these, such as the loss of traditional knowledge and skills caused by urbanization and migration and the

loss of family structures are of critical importance to the future sustainability of biological diversity resources in the Marshall Islands. Similarly, the spread of invasive imported species threatens both the survival of species and important ecosystems in the country.

Therefore, there is an urgent need to monitor the state of the country's biological diversity components to ensure that remedial action can be taken to prevent irretrievable losses. This monitoring would help to provide early warning systems to help the country manage its biological diversity resources.

In trying to introduce systems to monitor the state of the country's biological diversity components, there are a number of constraints –

②A lack of comprehensive information about the state of biological diversity in all the atolls of the country. Some have been extensively studied, while there is little or no information on others.

②Lack of trained people to monitor the biological diversity components, especially in some of the smaller and more remote atolls.

②The distance involved between the different atolls in the country, which causes logistical problems

②Lack of financial resources to monitor these components and the economics of whether monitoring of the more remote areas is justifiable in terms of scientific or cultural value

The greatest need for monitoring of biological diversity is within communities in the various atolls and islands of the country. Threats to biological diversity components, such as ecosystems, species and genotypes from invasive species and unsustainable practices, as well as threats to traditional knowledge and skills, are likely to be manifested first in these outlying areas and communities. This

is also the level of monitoring where the greatest constraints are – lack of trained personnel, resources, and communication. However, within these constraints also lies an opportunity to harness the local commitment shown at the atoll and national workshops. Resource owners at the community level are also very much aware of the value and importance of these components to their livelihood. However, they lack the training to fully understand the implications of changes and the actions needed to manage these changes. In the past, many of the controls over the use of biological diversity components were exercised at the community level through the traditional systems, which have now fallen into disuse.

## LEVELS OF MONITORING BIOLOGICAL DIVERSITY COMPONENTS

In order to overcome these constraints, the followed tiered approach is suggested for the monitoring of biological diversity components in the country –

1 – The first tier of biological diversity monitoring in the Marshall Islands would therefore be revived and strengthened systems based on traditional concepts, such as “mo”, and values, reinforced through their recognition in national legislation and local government ordinances. This would require an awareness-raising and capacity building program at the community level,

as outlined in the various activities under Key Result Area A in the Action Plan. This would need to be augmented by education of youth through the formal education system and research to document and demonstrate the benefits of traditional systems working alongside modern scientific techniques.

2 – The second tier of monitoring of biological diversity components would be at the local government level. The system of local government in the Marshall Islands provides an existing structure that maintains a presence and control in each of the inhabited atolls and islands. These local governments are also the avenues for communication between atolls, and with the national government. The local governments also have the authority to control and influence resource management decisions with each atoll through local government ordinances.

The need at this level is for training of personnel in the relevant issues and methodologies (e.g., through Key Result Areas A and C). Adequate resources will also need to be allocated for them to be able to carry out their functions effectively. Strengthening of both national legislation and local government ordinances would enable them to carry out monitoring and enforcement functions (e.g., through Key Result Area B).

3 – The third tier of monitoring would be at the national level, where national government agencies and statutory bodies would take overall responsibility for setting up an enabling legislation and policy framework. This tier would also provide appropriate research and development activities on threats to biological diversity components, particularly the very real threat posed by invasive species.

Criteria and indicators for monitoring of biological diversity components in the Marshall Islands would have to be developed through a public consultation process, which could “piggyback” on the public awareness-raising and capacity building activities outlined in Key Result Area A of the BSAP

## Conclusion

THE CONVENTION on Biological Diversity requires contracting parties to: “*Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.*” The BSAP for the Marshall Islands provides an opportunity to lay the foundation for long-term change through integrating the conservation and sustainable use of biological diversity into national plans. This would be done by harmonizing the key result areas of the BSAP with relevant sectoral plans, programs and policies, rather than taking a project oriented approach to implementation.

In order to achieve this, it will be necessary to have political commitment from the highest levels of government – Cabinet, Nitijela, Council of Iroij, and mayors of local governments. The initiative for this will be taken by the Minister of Resources and Development. A Cabinet Paper would be presented to

Cabinet by the Minister, setting out the rationale and process for the integration of the BSAP with other national and sectoral plans. The Cabinet Paper would direct the office of the Chief Secretary to coordinate a working group comprised of the relevant government ministries and statutory bodies that would consider, analyze and bring together sectoral plans, policies and programs. These would include the BSAP along with policies on population, agriculture and fisheries, as well as the initiatives agreed upon at the at the First National Economic and Social Summit in January 1998.

Once the common links and synergies between the different plans, policies and programs have been identified, an integrated national plan could be developed that brings together all these different sectoral initiatives. This process would help the government to identify national priorities for sustainable development.

Achieving these national priorities will require full cooperation and agreement from all stakeholders – the community groups, private sector, churches, and local government.

The BSAP will be implemented within the context of this national framework as set out by the four key result areas. All resource owners and users will have to fully understand and appreciate the importance of conserving the country's resources for their own benefits as well as for the whole community. Since the resources have been inherited from past generations, special consideration needs to be given to value and respect traditional systems of resource management and conservation. This would be done through all four of the key results areas of the BSAP –

- ②Capacity building for resource users and owners, to enable them to bring together traditional knowledge and skill with scientific principles
- ②Review of legislation to ensure that conservation and resource management legislation included provisions for traditional systems
- ②Strengthening the education system to enable youths to learn about traditional cultures, knowledge and skills
- ②Research and development to integrate traditional knowledge and modern scientific principles, and to demonstrate the practical benefits of such a process