TRIPLE BOTTOM LINE STRATEGIC PLAN: PEOPLE, PALAU, AND PROSPERITY 2021-2024
CONTACT INFORMATION

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**Bureau Descriptions**

- Bureau of Agriculture: 10
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The Ministry of Agriculture, Fisheries and the Environment has an important task of putting Palau on a path of becoming a food secure nation. In ensuring that the path we set benefits the people of Palau, MAFE will uphold these four core values: People, Environment, Science, and Service (PESS); these are values that reminds us of how we set our priorities and serve our stakeholders that will have positive impact on People, Environment, and Prosperity. Our approach will focus on 6 thematic areas: Policy, Institutional Capacity, Applied Research & Development, Extension Services, Accessibility to Market, and Knowledge Management. In this approach, the Ministry will strengthen its capacity as an institution to provide credible leadership in working with communities and the private sector to increase local capacity and investment toward increasing local food production. We emphasize that to become a food secure nation is our responsibility, #keledAngercheled. We believe that farmers, fishers, and those involved in our food system process are important actors in our community, livelihood, and economy, #respectProducers.

We recognize that to become a food secure nation is not an easy process and it will not take overnight to achieve. We are focusing on creating an enabling environment for the people of Palau and the government to get there. Achieving food security is ensuring that Palau’s Food System becomes a whole of government and whole of society’s approach. MAFE’s team will work diligently with other ministries, partners, communities, and private sector to establish a resilient Food System that supports people, livelihood and the economy bolstered by sustainable food production and wise management of our natural resources. Together as a ministry, we will hold ourselves accountable to this plan and to the people of Palau that we serve, #ngSebechel.

Sincerely

[Signature]
VISION, MISSION, VALUES, AND GOALS

**VISION**

The Ministry envisions a Palau where sustainable food production and wise stewardship of our marine and terrestrial resources enhances the wellbeing and economic livelihoods of all.

**MISSION:**

Provide clear direction and leadership in natural resource management that optimizes benefits to our people, economy, and environment.

**VALUES:**

**People:** We believe empowered people become good stewards of the environment and drivers of equitable economic opportunity.

**Environment:** We affirm that a healthy environment contributes to a thriving society and a resilient economy.

**Science:** We aspire to create a work culture that promotes innovation, sound science, and knowledge-sharing.

**Service:** We commit to accountability and transparency in all the work that we do.

**IMPACT AREAS:**

**People:** Palauans are active participants and beneficiaries of the food production sector.

**Palau:** Food production sector adopts and utilizes best practices that safeguard the environment and ensures sustained ecosystem services.

**Prosperity:** Successful food production sector improves Palau’s food security and enhances the Economy.

**IMPACT AREAS:**

**Policy:** Inform and promote sound policies that enable our Vision.

**Institutional Capacity:** Deliver an innovative, high-performing, and proficient Ministry.

**Extension Services:** Empower people to engage in and benefit from sustainable food production and resource use.

**Applied Research & Development:** Deploy appropriate evidence-based technologies and practices to accelerate development of programs.

**Accessibility to Market:** Secure market access for local commodities.

**Knowledge Management:** Capture, retain, interpret, and share relevant data and information to support goals.
This strategic plan was developed by Ministry staff through a consultative process following the creation of the new Ministry Agriculture, Fisheries, and the Environment. Existing ministry staff were assembled to identify a (1) planning process, (2) align approaches with the new administration priorities, (3) re-define Mission, Vision, and Values, (4) conduct a SWOT Analysis, and (5) and perform a comprehensive review of all bureau, office, and project objectives. Through these exercises the Ministry identified 6 thematic areas with impact indicators to assess its performance. It is expected that this strategic plan will be reviewed in the year 2024 or earlier when necessary for adaptive management purposes.
## SWOT Analysis

Through discussions with key staff from Bureaus and programs, we identified internal strengths and weaknesses, as well as our external opportunities and threats. This analysis is important for us to prioritize what we can do best to achieve our vision as well as address areas of weakness that pose risk to our team and programs to achieve progress.

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<th>S</th>
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<tbody>
<tr>
<td>STRENGTHS (INTERNAL)</td>
<td>WEAKNESSES (INTERNAL)</td>
<td>OPPORTUNITIES (EXTERNAL)</td>
<td>THREATS (EXTERNAL)</td>
</tr>
<tr>
<td>Strong, committed partners (national, regional, and international)</td>
<td>Lack of a consistent, coherent overall production development strategy or policy that is owned and institutionally supported</td>
<td>Food Security has been prioritized as an important justification to promote growth</td>
<td>A decline in Palauan interest in farming or fishing as an occupation</td>
</tr>
<tr>
<td>Access to external funding opportunities</td>
<td>Lack of public awareness of our services (defines extent of service and follow up monitoring)</td>
<td>The National Development Bank of Palau provides lending to agriculture and aquaculture ventures</td>
<td>Aging population in the production sector</td>
</tr>
<tr>
<td>Support from the environmental community</td>
<td>Programmatic gaps with no dedicated staff</td>
<td>Local demand for locally produced commodities (tourism, gov’t food programs, etc.)</td>
<td>Lack of interest in pursuing agricultural, fisheries, and related fields</td>
</tr>
<tr>
<td>Equipped facilities</td>
<td>Research capacity to support development (i.e., determine species for development)</td>
<td>Imports are increasing and the overall demand for local commodities greatly outstrips domestic supplies.</td>
<td>A significant amount of unused land with the prevalence of poor soils and pests</td>
</tr>
<tr>
<td>Diverse specialized skill sets and capacities</td>
<td>Transfer of knowledge from technical experts</td>
<td>Training to improve capacity</td>
<td>An apparent conflict between conservation and production</td>
</tr>
<tr>
<td>Good teamwork with committed staff</td>
<td>Short/limited staff and capacity</td>
<td>Develop SOP’s integrating staff succession and development plan as well as disaster risk plans</td>
<td>Formal mechanism in which management staff are not part of larger coordinated national planning</td>
</tr>
<tr>
<td>Presence of revolving funds to support programs</td>
<td>Lack of SOPs for the Bureau operations</td>
<td>Cooperative and Associations present with goals of increasing food production</td>
<td>COVID19 (limited border closures – decreases in green fee and disruptions of supplies needed to support programs)</td>
</tr>
<tr>
<td></td>
<td>Limited monitoring and evaluation</td>
<td></td>
<td>Natural Disasters and hazardous weather conditions disrupting productions programs</td>
</tr>
<tr>
<td></td>
<td>Lack of legal counsel to support management</td>
<td></td>
<td>Unexpected utilities interruptions causing potential equipment failure</td>
</tr>
<tr>
<td></td>
<td>A lack of public market access and middlemen</td>
<td></td>
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</tr>
</tbody>
</table>

# RespectProducers
5. STRUCTURE

- BUREAU OF AGRICULTURE
  - DIVISION OF HORTICULTURE
  - DIVISION OF LIVESTOCK

- BUREAU OF FISHERIES
  - DIVISION OF COASTAL FISHERIES
  - DIVISION OF AQUACULTURE
  - DIVISION OF OCEANIC FISHERIES

- BUREAU OF ENVIRONMENT
  - DIVISION OF PROTECTED AREAS & SPECIES
  - DIVISION OF FOREST, LAND & WATER MANAGEMENT

- OFFICE OF THE MINISTER
  - OFFICE OF STRATEGIC SUPPORT SERVICES
TEAM PROFILE

65 EMPLOYEES WORKING TOWARDS PEOPLE, PALAU, PROSPERITY

37 MEN  28 WOMEN

Committed to Upholding our Values of People, Environment, Science and Services

Ranging from recent graduates to professional experts. Average of employees is 44 years:

- 15% 24-31 Years
- 22% 32-39 Years
- 22% 40-47 Years
- 23% 48-55 Years
- 18% 56-60 Years

Employee retention and opportunities to grow:

Length of Service

- 3% 0-5 Years
- 15% 6-11 Years
- 12% 12-17 Years
- 15% 24-29 Years
- 35% 30-35 Years

Experience and skill sets are valued and are equally part of the team

- MS/Msc - 12%
- Trade School Graduate - 3%
- BS/Bsc - 12%
- AA/Asc - 22%
- HS Diploma With Professional Certificate - 12%
- HS Diploma With on the Job Training - 22%
BUREAU DESCRIPTIONS

BUREAU OF AGRICULTURE

The Bureau of Agriculture’s mission is to promote, develop, protect, and conserve Palau’s land-based natural resources and to assist families to have the skills, resources, and opportunities to ensure sustained food production, nutrition, food security and wise stewardship of ecosystems.

Division of Horticulture

- Technical support and extension services for produce and fruit tree farmers
- Nursery Operations
- Maintain seed bank for fruit Tree seedlings
- Work with partners to conduct horticulture & best agricultural practices
- Regular extension and farm visits
- Develop database for farmers

Division of Livestock

- Provide technical support and extension services to livestock farmers
- Develop best practices for livestock farming
- Breeding of livestock
- Produce livestock feeds
- Develop Certification for livestock products
- Operation of livestock slaughterhouse
- Develop database for livestock farmers
BUREAU OF FISHERIES

The Bureau of Fisheries shall be responsible for exploring, surveying, developing, managing, and conserving all near shore and offshore marine resources for the benefit of the people of Palau.

Division of Aquaculture

• Maintain and operate national aquaculture facilities
• Conduct aquaculture research and development
• Produce seedlings and fingerlings for priority finfish and invertebrate species
• Facilitate the development of sustainable and economically viable aquaculture fishery
• Provide technical and extension services to aquaculture farmers
• Develop database of aquaculture farmers
**Division of Coastal Fisheries**
- Plan, develop, manage, and enforce regulations on coastal fisheries
- Support development of coastal fisheries management plans
- Collect data on key coastal fisheries
- Assist and participate in research and monitoring activities related to all coastal marine resources
- Explore and research sustainable development of fisheries resources
- Maintain a Fish Aggregating Device (FAD) program
- Develop database of coastal fishers
- Develop appropriate coastal fisheries harvest control rules and regulations

**Division of Oceanic Fisheries**
- Explore, survey, develop, manage and conserve offshore living and non-living resources
- Establish the total allowable level of catch and fishing effort/set limits
- Allocate/sell fishing days
- Negotiate & issue fishing agreements
- Support the development of offshore domestic fishery
The Bureau of Environment is responsible in the protection of Palau’s natural environment, conservation of our precious resources, and promotion of sustainable development through regulatory oversight and enforcement.

**Division of Protected Areas & Species**
- Conserve biodiversity, maintain critical ecosystem functions, and sustain cultural and natural resources through a network of protected areas with representation of key areas defined by science and traditional knowledge.
- Arm State Programs with relevant/appropriate tools to further enhance effectiveness of protected areas
- Promote research and management of key indicator species
- Promote protection of endangered species through collaboration with key partners
- Control and if possible, eradicate Palau’s priority invasive species through collaboration with NISCO and other relevant MAFE Divisions and/or NGO's
- Coordinate the National Invasive Species Coordination Office
- Coordinate the Protected Areas Network Office

**Division of Forest, Land, & Water Management**
- Improve the understanding, use, management, and protection of natural resources.
- Protect land and water through reforestation and rehabilitation actions.
- Promote Best Practices and integrated management approaches.
- Mainstream biodiversity, food production, and natural resource concepts into land and seascape planning.
The Office of Strategic Support Services will provide coordinating support across the 3 Bureaus in the Ministry and will be established directly under the Office of the Minister. This office shall work in parallel with all MAFE Bureaus to provide the following coordinating support:

- Communications & Partnerships – this position will provide communications support to all Bureaus and support for each Bureau in building and managing partnerships
- Monitoring & Evaluation
- Central data management
- Bureau coordination & Budget planning Support
- Policy & Regulatory
- UN Conventions- International & Regional partnerships/commitment
**STRATEGY MATRIX**

<table>
<thead>
<tr>
<th>GOALS</th>
<th>OBJECTIVES</th>
<th>INSTITUTIONAL INDICATORS (TO BE SPECIFIED AT BUREAU LEVELS)</th>
<th>IMPACT INDICATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sound Policy                                                       Inform and promote sound policies that enable our vision.</td>
<td>Institutional indicators aim to assess MAFE’s institutional performance in the key thematic areas and goals.</td>
<td>Impact indicators aim to assess the impacts of MAFE’s work on empowering society, growing the economy, and sustaining the environment</td>
<td></td>
</tr>
<tr>
<td>1.1 Review, update, or develop Republic of Palau Agriculture, Fisheries, and Environmental regulations and policies</td>
<td>Number of policies reviewed, i.e. - regulations, SOP, permitting process</td>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td></td>
</tr>
<tr>
<td>1.2 Participate in and report on relevant United Nations Conventions and other Regional and International Agreements</td>
<td>Ministry Bureaus and Office of Strategic Support Services established</td>
<td>Ministry Bureaus and Office of Strategic Support Services established</td>
<td></td>
</tr>
<tr>
<td>1.3 Strengthen Ministry monitoring, compliance, and enforcement programs</td>
<td>Number of staff trained</td>
<td>Number of staff trained</td>
<td></td>
</tr>
<tr>
<td>2. Institutional Capacity                                             Deliver an innovative, high-performing, and proficient ministry.</td>
<td>Knowledge management system developed</td>
<td>Knowledge management system developed</td>
<td></td>
</tr>
<tr>
<td>2.1 Seek capacity training to ensure well-trained staff</td>
<td>Maintenance Plan for facilities and equipment developed</td>
<td>Maintenance Plan for facilities and equipment developed</td>
<td></td>
</tr>
<tr>
<td>2.2 There is an administrative and operational system, and an organizational structure and culture that ensures that MAFE meets its mandate</td>
<td>Ministry Bureaus and Office of Strategic Support Services established</td>
<td>Ministry Bureaus and Office of Strategic Support Services established</td>
<td></td>
</tr>
<tr>
<td>2.3 Maintain and improve MAFE facilities and assets (offices, slaughterhouse, feed mill, hatchery, nurseries)</td>
<td>Regular coordination meetings to ensure coordination</td>
<td>Regular coordination meetings to ensure coordination</td>
<td></td>
</tr>
<tr>
<td>2.4 Coordinate the implementation of MAFE strategies and other Action Plans</td>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td></td>
</tr>
<tr>
<td>2.5 MAFE ensures its operations are financed through a mix of Government appropriation and external funding sources (e.g., grants, revolving fund schemes, project development funds).</td>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td></td>
</tr>
<tr>
<td>3. Applied Research &amp; Development                                     Deploy appropriate evidence-based technologies and practices to accelerate development of programs.</td>
<td>Quarterly report of production outputs from nurseries and hatcheries</td>
<td>Quarterly report of production outputs from nurseries and hatcheries</td>
<td></td>
</tr>
<tr>
<td>3.1 Increase production and distribution of existing breeding/propagation programs</td>
<td>Updated prioritized list of livestock, plant, and fisheries species/varieties</td>
<td>Updated prioritized list of livestock, plant, and fisheries species/varieties</td>
<td></td>
</tr>
<tr>
<td>3.2 Identify and trial propagation of plant, livestock, and fisheries species/varieties</td>
<td>Number of propagation trials of new species</td>
<td>Number of propagation trials of new species</td>
<td></td>
</tr>
<tr>
<td>3.3 Understanding socio-economic factors in the production sector</td>
<td>Improved understanding of the use, management, or protection of natural resources and/or key species</td>
<td>Improved understanding of the use, management, or protection of natural resources and/or key species</td>
<td></td>
</tr>
<tr>
<td>3.4 Improve understanding and use of natural resources and to promote research and collaboration on protection of endangered, indicator species</td>
<td>Increased awareness of management and protection of priority endangered species</td>
<td>Increased awareness of management and protection of priority endangered species</td>
<td></td>
</tr>
<tr>
<td>3.5 Identify at least three pelagic species and associated fishing technologies to support livelihoods</td>
<td>Number of people benefiting from pelagic fishing</td>
<td>Number of people benefiting from pelagic fishing</td>
<td></td>
</tr>
</tbody>
</table>

**#RESPECTPRODUCERS**
## 4. Extension Services
Empower people to engage in and benefit from sustainable food production and resource use.

| 4.1 | Develop information, products, and technologies for livestock, horticulture, fisheries, and aquaculture extension programs |
| 4.2 | Regular and consistent extension services provided to stakeholders |
| 4.3 | Mitigation of priority threats to land and water |
| 4.4 | Support farmers, fishers, and producer cooperatives & associations to ensure the efficient delivery of extension services and receive feedback |

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of communication products developed</td>
<td>No. of extension services provided annually (these can be translated in the form of trainings, acreage of land tilled, etc.)</td>
</tr>
<tr>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td>Number of stakeholders trained</td>
</tr>
<tr>
<td>Number of services provided to stakeholders</td>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
</tr>
<tr>
<td>Number of stakeholder agreements/training</td>
<td>Number of services provided to stakeholders</td>
</tr>
</tbody>
</table>

## 5. Accessibility to Market
Secure market access for local commodities.

| 5.1 | Improve linkages between producers and fishers to the supply chain |
| 5.2 | Improve understanding of the market supply chain |
| 5.3 | Develop marketing incubation program that supports fishers and farmers in collaboration with relevant partner agencies |

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service feedback mechanism established</td>
<td>Number of stakeholders trained</td>
</tr>
<tr>
<td>Number of agreements and/or funding support that streamline efforts across bureaus and with local, national, regional, and international partners</td>
<td>Number of services provided to stakeholders</td>
</tr>
<tr>
<td>Supply chain for various products mapped out</td>
<td>Number of stakeholders trained</td>
</tr>
<tr>
<td>Number of producers with improved marketing capacity</td>
<td>Number of services provided to stakeholders</td>
</tr>
</tbody>
</table>

## 6. Knowledge Management
Capture, retain, interpret, and share relevant data and information to support goals.

| 6.1 | Develop knowledge management system |
| 6.2 | Develop the capacity and systems to efficiently collect and analyze relevant forms of data |
| 6.3 | Build information network with partners to share and disseminate data and information |

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge management system developed</td>
<td>Number of staff trained</td>
</tr>
<tr>
<td>Relevant data being collected and managed</td>
<td>Number of stakeholders trained</td>
</tr>
<tr>
<td>Number of information products developed</td>
<td>Number of services provided to stakeholders</td>
</tr>
</tbody>
</table>
STRATEGY OBJECTIVE DESCRIPTIONS

1. POLICY: INFORM AND PROMOTE SOUND POLICIES THAT ENABLE OUR VISION

1.1 Review, update, or develop Republic of Palau Agriculture, Fisheries, and Environmental Regulations and Policies.

Current MAFE regulations exist to protect natural resources and protect biodiversity. This objective aims to review, develop, and update regulations:

- In subsidy programs to keep and engage local producers.
- To strengthen programs on local subsistence and or commercial purposes.
- To explore opportunities for lowering and costs and appropriate pricing for Ministry products and services.
- To continue to safeguard the environment and resource users.

This objective intends to review and update policies that:

- Promote and strengthen the local agricultural and fisheries sectors.
- Increase the engagement of subsistence farmers/fishers in the food production sector
- Promote policies that safeguard the environment and resource users.
- Needed to accelerate MAFE programs and initiatives.
- Address conflict between conservation and production and the need for planning mechanisms to resolve society preferences (USA Graduate School, 2014).

A 2015 policy document titled: Achieving Resilient Agriculture and Aquaculture: A national policy for strengthening food security in Palau as a priority for climate change adaptation measure, recommended that this policy document be revisited to align with current priorities and MAFE Strategies.

1.2 Participate in and report on relevant United Nations Conventions and other Regional and International Agreements.

MAFE represents Palau on two United Nations Conventions and various International Treaties and Agreements. This objective intends to strengthen participation through:

- Participation in Conference of the Parties and or other meetings
- Transparent communication and collaboration with the Ministry of State.
- Ensure the timely submission of national reports required under Conventions or agreements.

1.3 Strengthen Ministry monitoring, compliance, and enforcement programs.

Provide opportunities to address gaps in capacity, processes, and collaborations.

The aim of this objective is to strengthen the Ministry’s performance through policy directives that improve institutional capacities and collaborations.

Establish a Monitoring and Evaluation program to track progress and performance
2. INSTITUTIONAL CAPACITY: DELIVER AN INNOVATIVE, HIGH-PERFORMING, AND PROFICIENT MINISTRY

2.1 Seek capacity training to ensure well-trained staff

Delivering services and satisfying public expectation occurs on the capability and competency of staff. Through this objective MAFE intends to:

- Provide opportunities for staff to improve skills, knowledge, and leadership through professional development programs
- Train staff in methods and practices that are relevant to their work and is consistent with the nature of the work and the needs of the community
- Staff Cross training to enhance service delivery

2.2 There is an administrative and operational system, and an organizational structure and culture that ensures that MAFE meets its mandate.

Through this objective MAFE intends to improve its organizational structure and the delivery of this strategic plan. MAFE will deliver:

- An approved organizational structure for MAFE
- Coordinated and communicated administrative and operation support decisions
- Staff succession plans that are aligned with the Bureau of Human Resource to remedy bouts of long-term vacancies.

2.3 Maintain and Improve MAFE facilities and assets (offices, slaughterhouse, feed mill, hatchery, nursery)

Delivering services and satisfying public expectation is also dependent on the performance of facilities and assets. This objective aims to:

- Ensure MAFE Facilities and Assets are operational, equipped, and safe
- Ensure that all assets are accounted for.
- Provide for the maintenance and up-keep of facilities and assets.

2.4 Coordinate the implementation of MAFE strategies and other Action Plans

Multiple action plans exist for Bureaus, Divisions, Offices, and relating to the protection of a natural resource or a species. Going forward this objective will provide:

- Bureau level action plans developed aligned with the MAFE Strategic Plan
- Ensure that other approved action plans or any other approved MAFE document will align with this strategic plan.

2.5 MAFE ensures its operations are financed through a mix of Government appropriation and external funding sources (e.g. grants, revolving fund schemes, project development funds).

This objective ensures that there are adequate funds to carry out operations.
3. APPLIED RESEARCH & DEVELOPMENT: DEPLOY APPROPRIATE EVIDENCE-BASED TECHNOLOGIES AND PRACTICES TO ACCELERATE DEVELOPMENT OF PROGRAMS

3.1 Increase production and distribution of existing breeding/propagation programs

This objective is needed to address food security livelihoods.

Producing enough food is a challenge to growing economies.

Accessibility, limited stocks, and supply pose challenges to producing beyond consumption.

3.2 Identify and trial propagation of plant, livestock, and fisheries species/varieties

Unused land with poor soils and presence of pests. There are opportunities to diversify crops and livestock under certain environmental and husbandry conditions.

Mitigating risks from aquaculture can be addressed through marine spatial planning with the right species variety.

3.3 Understanding socio-economic factors in the production sector

Decline in interest in farming and fishing (USA Graduate School 2014)

2015 census reported 390 people employed in the skilled agricultural, forestry, and fishery workers. Further breakdown of this report revealed:

- 30 Palauans in market-oriented skilled agriculture workers.
- 40 Palauans in market-oriented skilled forestry, fishery, and hunting workers.

This objective is needed understand the interaction social processes and economic activities to improve services and engage stakeholders.

3.4 Improve understanding and use of natural resources and to promote research and collaboration on protection of endangered, indicator species

Natural resources are generated from the earth and two types exist: renewable and non-renewable.

Baseline information must be gathered and analyzed to capture the current status of our natural resources (water, soil, forests etc.).

Understanding what is available, what we can utilize, and how to do so, can help MAFE more efficiently manage our natural resources.

Efforts are needed to protect natural resources from anthropogenic threats and from invasive species.

Biodiversity refers to the variety of species living on Earth, including plants, animals, bacteria, and fungi.

A biodiverse environment can help humans by offering ecosystem services such as clean water sources and timber for construction/traditional practices (itabori).

Biodiversity can also support recreational activities that both locals and tourists can enjoy.

Endangered species are a type of organism that is threatened by extinction, therefore directly affecting biodiversity.
Endangered species are important because they support biodiversity and help maintain balance in the environment as all parts of the ecosystem are connected.

Conservation efforts are essential for preserving biodiversity and protect endangered species and their habitats (National Geographic).

Efforts are needed to protect endangered species from anthropogenic threats and from invasive species.

It is not possible to monitor all forests and marine ecosystems, therefore, indicator species are important as data gathered about them over time can showcase changes in an environment.

Indicator species can be used as proxies to gauge certain environmental conditions as well as the overall health of an ecosystem.

A change in species population growth, decrease, density, or other factors could possibly indicate a change in environmental conditions such as pollution levels, habitat loss, or species competition.

Certain species, such as birds, can be health indicators for forests and water sources (rivers/streams etc.).

Learning about and managing key indicator species can give BOE a greater understanding of those species and the overall health of our nation’s ecosystems.

3.5 Identify at least three pelagic species and associated fishing technologies to support livelihoods

Pelagic fish inhabit the water column and can be categorized as coastal and oceanic fish depending on the depth of water they inhabit.

Examples of oceanic fish are tuna, mackerel, and swordfish; an example of coastal pelagic fish are sardines.

Too much dependence on reef fish has caused Palau’s nearshore stocks to decrease – Palau’s long-term fisherman agree that the abundance and size of reef fish has decreased in the last two decades (Lindfield, 2017.).

This has caused a movement to encourage consumption of pelagic species.

More information must be gathered concerning the status of pelagic stocks.

Information about various fishing technologies must be gathered and studied to find the most efficient ways that can be used by BOF and disseminated to current and potential fishers.
4. EXTENSION SERVICES: EMPOWER PEOPLE TO ENGAGE IN AND BENEFIT FROM SUSTAINABLE FOOD PRODUCTION AND RESOURCE USE

4.1 Develop information, products, and technologies for livestock, horticulture, fisheries, and aquaculture extension programs

A threat identified in the Ministry’s SWOT exercise include the lack of public information and awareness on the services that the Ministry provides. Through this objective, the Ministry aims to improve on this through effective communication and dissemination of services and products. Furthermore, this objective is linked with Goal #3 Applied Research and Development – advances, set-backs, lessons-learned will facilitate knowledge transfer and improve the delivery of the Ministry’s extension services to meet this goal.

Applied traditional practices, trialed, and verified propagation / culture methodologies, and best practices will be disseminated in the right format to different users.

4.2 Regular and consistent extension services provided to stakeholders

A list of extension services will be provided through different platforms and avenues to reach a wide variety of users.

Customer and resource user satisfaction will be taken seriously to evaluate and improve on services.

4.3 Mitigation of priority threats to land and water

People directly depend on land and water resources not only for survival, but also for a certain standard of life.

Some of the priority threats that Palau faces are climate change, wildfires, habitat degradation, and species loss.

The priority threats directly harm both land and water and therefore must be addressed by actions and initiatives, such as:

- Protected Areas
- Reforestation and rehabilitation
- Invasive species and Pests
- Wildfire Prevention

The National Invasive Species Committee (NISC) was established to manage, responds, and promote awareness regarding invasive species. In 2003, Through Executive Order 251, NISC was converted into an independent body – advisory to the President and his cabinet. Furthermore, through this Executive Order 251 the NISC Coordinator was moved from the Office of the Environmental Response and Coordination (OERC) to the Bureau of Agriculture (BOA).

4.4 Support farmers, fishers, and producer cooperatives & associations to ensure the efficient delivery of extension services and receive feedback.

Palau’s Food production network, ranging from the individual producer to cooperatives and associations are important partnerships that support the nutritional diets, environmental awareness, and the economic productivity of Palau. These groups are important as they provide market access to local producers and at the same time provide local commodities to consumers. The Ministry supports these groups by providing extension services that increases their output as well as providing supply market chain advice.

In conjunction with objective 4.1, extension services will be made available, and evaluations will be made in how to be better provide services and capture needs and challenges.
5. ACCESSIBILITY TO MARKET: SECURE MARKET ACCESS FOR LOCAL COMMODITIES

5.1 Improve linkages between producers and fishers to the supply chain

Finding ways to link producers and farmers to the market is important for food security but is also key to improving livelihoods of local producers and farmers.

There is a distinct disconnection from the producers and fishers to the supply side of the market.

Effort should focus on identifying potential market opportunities that enable producers and farmers to provide produce actively and consistently to the market.

5.2 Improve understanding of the market supply chain

Analyzing the market helps producers and farmers identify the market demand, thus, enabling them to produce economically viable products that meet market needs.

There has not been an assessment or study conducted on the market to identify the needs and demands of the local market.

To work with/hire a consultant to determine highly valued products or demanded services from the local community.

5.3 Develop marketing incubation program that supports fishers and farmers in collaboration with relevant partner agencies

Marketing incubation program aims to provide services required to help fishers and farmers develop and jumpstart their small-scale businesses.

Most startup fishers and farmers have difficulties creating a value chain promotion around key staple food commodities.

Work with/support relevant partner agencies (e.g., Bureau of Development, Ministry of Human Resource, Culture, Tourism and Development) to implement plans and/or activities that help create new and growing fisher and smallholder businesses by providing the necessary financial and technical services.
6. KNOWLEDGE MANAGEMENT: CAPTURE, RETAIN, INTERPRET, AND SHARE RELEVANT DATA AND INFORMATION TO SUPPORT GOALS

6.1 Develop knowledge management system

The aim of this objective is to have a knowledge management system that improves the permitting processes and the overall efficiency, productivity, and ability to retain critical information within the Ministry.

All data and permitting processes are managed independently either at the division or bureau level.

To develop a Ministry-level system that requires quality data collection, information sharing and communication, monitoring and evaluation, and reporting.

6.2 Develop the capacity and systems to efficiently collect and analyze relevant forms of data

Having the appropriate training and capacity building is fundamental to developing a system that is capable of collecting and analyzing relevant data.

One of the main challenges is limited staffs to carry out continuing programs to collect and analyze data.

To develop a system with skilled staff capable of collecting accurate data that is essential to maintaining the integrity of technical research and informed management decision-making.

6.3 Build information network with partners to share and disseminate data and information

Creating partnerships to share data and information can help fill information and data gaps to ensure coordination and increase efficiency of work.

Information gap has been a long-standing issue wherein partners have fragmented information that are not coordinated accordingly.

Building a functioning network with partners that routinely share data and information.