Some lessons learned on managing multiple stressors from Japan and the Pacific

Marjo Vierros
UNU-IAS
About ecosystem approaches

- Many different ecosystem approaches/ecosystem-based management:
  - The Convention on Biological Diversity (CBD) ecosystem approach
  - The ecosystem approach to fisheries (FAO)
  - Integrated marine and coastal area management/Marine spatial planning
- There is no one “correct” way to implement an ecosystem approach
- **Flexible**: Methods and tools depend on the specific problem
- All approaches acknowledge that humans and their cultural diversity are an integral part of the ecosystem
- As societies change and evolve, so do their relationships with nature
Context – Traditional understanding of the coastal area

- Land, sea, freshwater and atmosphere are interconnected and part of one system
- Northern Australia Sea Country: Mixing of fresh water and seawater (Ganma); Flow of water connects different places and people (Gurrūtu)
Holistic management systems

- Ahupua’a in Hawaii; vanua in Fiji; tapere in Cook Islands

Satoumi (Japan)
Traditional management systems in the Pacific islands

- Based on intimate, long-term knowledge of how local coastal systems operate
- **Flexible: can be applied quickly in response to changing environmental conditions (adaptive management)**
- Approaches include tabu (closed) areas, species/catch restrictions, watershed management (tree planting), traditional agriculture systems, cyclone preparation, etc.
- Tabu areas: size and length of time varies, often harvested once tabu over
- Improved sustainable food supply for communities, biodiversity benefits
Revival of traditional management systems in Pacific Islands

- Environmental degradation, habitat loss, land-based pollution, fisheries decline
- Loss of traditional knowledge systems during the colonial period – recent revival
- From village-led to government supported. Many integrate science and local knowledge
- Locally managed marine areas (LMMAs) - managed by local communities and resource-owning groups
- MMAs currently cover approximately 30,000 km\(^2\) of MMAs in the Pacific Islands
- **Successful results in many places:** In Fiji, since 1997, 20-fold increase in clam density in tabu areas, a 200-300 % increase in harvest in adjacent areas, tripling of fish catches, 35-45% increase in household income
Japan: high population density, highly altered coastline, multiple impacts (fisheries decline, pollution, loss of coastal habitat) and human uses
Defining satoumi

- In satoumi, human interaction with the coastal environment nurtures nature and contributes to the enhancement of biodiversity
- Concept based on cultural heritage ("branding")
- Complements restriction-based conservation
- Looked at 10 satoumi projects
- A mixture of top-down and bottom-up
- Flexibility and inclusiveness
- Provides for local community self-initiative
- Cooperation between the local fishing community, scientists and the local government.
- Modest funding from government for some activities
- Part of Japan’s national policies (allows for mainstreaming)
Satoumi stewardship – users have a management responsibility

- Local fishers seen as integral components of ecosystems, with an active role in ecosystem-based management

“Mori wa umi no koibito” (the forest is the sweetheart of the sea)

- Ancient (17th century) tradition of the uotsukirin, or fish-breeding forest: connection between sea and the mountain, inshore and offshore

- Fishers involved in habitat restoration:
  - Replanting of forests in watersheds to manage run-off
  - Restoring coastal spawning/nursery habitat (e.g. seagrass and sargassum)
  - Voluntary no-take areas

- Sharing costs and benefits of caring for a resource
Tree planting by fishers
Environmental monitoring - ongoing monitoring is carried out by a partnership of citizens, scientists and local governments.

Scientific research – long-term commitment of scientists to the local community

Use of local knowledge in addition to science

Environmental education through participation of community and schools in restoration and monitoring activities
Satoumi - mechanisms

- **Coordinating structures or bodies** include a broad range of stakeholders
- Many projects have applied **zoning schemes** and/or marine spatial planning
- **Compliance mechanisms** based on peer monitoring and sanctions by community stakeholders who share the cost and benefit of conservation activities.
- Users must be interested in the **sustainability** of the particular resource so that the expected long-term benefits will outweigh current costs
Do these approaches transfer?

- There is no “one size fits all” solution
- The right approaches depend on local circumstances: cultural history, resource dependence, environmental pressures, ownership structures.
THANK YOU!