

Executive summary

The Pacific Islands GIWA region 62 includes all of the 23 island nations or territories of the tropical Pacific Ocean that embrace the cultural areas of Melanesia, Polynesia and Micronesia. The region covers about 12% of the world's ocean space. These island states and territories range from very large, high continental islands, to countless offshore large and small islands that may be generally grouped as high islands, coral limestone islands and atolls. The total land areas vary from 12 to 26 km² for groups of low-lying coral-limestone islands like Tokelau and Tuvalu to over 400 000 km² for the continental island areas of Irian Jaya and Papua New Guinea. Terrestrial, freshwater and marine ecosystems are highly variable, and there is also a wide range of geographic, demographic and developmental diversity. Some, like Easter Island, Guam, Kosrae, Nauru and Niue, consist of one single small island. Others like Fiji, Tonga and French Polynesia are comprised of numerous large and small highly dispersed islands. Papua New Guinea and West Papua (Irian Jaya) are parts of high continental islands. These geographic and topographic differences are paralleled by differences in climate, geological resources, topographical features, soil types, mineral and water availability, extent of coral reefs and diversity of terrestrial, freshwater and marine flora and fauna.

As the boundaries of the region are largely adjoining other large oceanic spaces, transboundary effects are minimal on this scale. The unpopulated Coral Sea situated to the west of the region minimises any transboundary effects from the continent of Australia, but to the northwest the region is influenced by land-based factors such as run-off from land-based activities (forestry, mining) and sedimentation originating from Papua New Guinea, Irian Jaya, and the Philippine Sea. Given that there are large areas of deep ocean space separating the island states and territories, any transboundary effects are minimised. Within the larger archipelagic states, however, local transboundary effects are potentially significant, as urban impacts, large watershed effects and other anthropogenic disturbances such as mining, forestry, agriculture and coastal development may affect adjacent areas.

Population densities range from extremely low to numbers comparable with some of the densest metropolitan areas in the world. The range is from just over 8 persons per km² for Pitcairn Island to 505 persons per km² for Nauru. In the most populous islands, the densities rise to over 100 per km² for four islands, over 200 for three islands, and 421 for Koror in Palau, 757 for Funafuti in Tuvalu, 1 179 for Majuro in the Marshall Islands, and 2 190 for Tarawa in Kiribati. The estimated population for Betio Islet of Tarawa atoll was 40 000 in the year 2000, which will give it a population density rivalling those of Hong Kong and Singapore. On Ebeye, one of some 90 islets comprising Kwajalein Atoll in the Marshall Islands, and to which people have been relocated by the U.S. military to free the atoll's lagoon for intercontinental ballistic missile testing, the population density increases to over 25 000 per km²!

Although some of the larger island groups with significant mineral, forestry, fisheries and agricultural land resources have some potential for development, most Pacific Island states and territories do not. Their options for modern economic development are extremely limited because of their small size, geographic isolation and extremely limited natural resources. Thus most island countries, territories and local communities will, for the foreseeable future, have to depend on the sustainable use of their local resources as a basis for their survival and development. The Pacific Island region is unique in that most of the islands of the region are inhabited by indigenous peoples who have close links with, and great cultural, economic and spiritual dependence on their island terrestrial and marine environment. Generally speaking, these indigenous people are the owners and users of these resources and ultimately control decisions related to their conservation and sustainable use. This is a very different situation compared with that in other GIWA island regions, such as the Indian Ocean and the Caribbean Sea, and continental areas where there is more private or public land and governments can play a much greater role in resource management.

It was noted during the assessment of GIWA issues that there was a great disparity in the impacts of various issues across the region because of the diverse range and varying characteristics of the islands comprising the region. For example, freshwater shortage may be ranked highly in atoll states, but lower in the high island states. Important socio-economic issues in the region include high population growth rates, urban drift, breakdown of traditional lifestyles, a strong dependence on aid and the rapid adoption of the cash economy.

The Causal chain analysis concentrated on selected case studies:

- Freshwater shortage: Viti Levu, Fiji and South Tarawa, Kiribati;
- Unsustainable exploitation of fish: Fiji.

Root causes for freshwater shortage include rapid economic development, increases in population density (and hence demands for water) through migration and urban drift, lack of adequate policies on land and water use and the necessary capacity for their enforcement, and natural phenomena including changing weather patterns and other aspects of climate change. Pollution of water supplies is potentially region-wide, due to inadequate treatment of domestic waste water and inadequate solid waste disposal. Changes in the water table from over-use and climate-related issues are widespread, but the most threatening are in atoll countries. There are some significant examples of habitat modification leading to loss of ecosystems: some are attributable to unregulated coastal development, destruction of mangroves, forestry, mining and poor wastewater discharge. Economic development and market demand (eg. logging, mining, tourism) are also root causes.

Unsustainable exploitation of fish is universal throughout the region, and most serious close to urban areas. A root cause is the need to generate income to support family needs, this causing a decline in coastal resources. Destructive fishing, overexploitation, lack of enforcement, lack of Marine Protected Areas (MPAs) and over-licensing are all evident from the analysis, and the root causes include market demand, lack of regulations and/or their enforcement, and economic demand. Access to technology was also seen as a root cause. Pollution is affecting living resources in some heavily populated areas like Suva, Fiji. This includes heavy metals, human waste, solid waste and agricultural run-off. A lack of regulation and increasing population pressure are among the most important root causes. There is often also a lack of political will.

With respect to policies, it is clear that stakeholders should be involved in their development and implementation. Where adequate policies do exist, enforcement is rarely successful and governments are driven by expedience or economics. Above all, lack of knowledge (which leads

to a lack of appreciation of the long-term effects of current actions) is a pervasive problem and capacity building needs to be given a high priority now and for the foreseeable future. Integrated planning is rarely, if ever, practised throughout the region and there is a long timelag between signing and ratifying global conventions and agreements, and then developing the national laws and regulations needed to regulate and enforce them. In some areas, such as land and resource ownership issues, dispute resolution is an on-going need. In the area of resource overexploitation, the same governance and regulatory issues are important. A lack of data describing the status of fisheries is a major problem for stakeholders and regulators alike. Co-management is seen as an important strategy to be adopted for the future. A lack of MPAs gives the countries little protection against loss of resources and biodiversity.

The recommendations are designed to address the root causes identified in the GIWA assessment. They are not listed in any particular order of priority. It is noteworthy that most of them are also reflected in the Pacific Islands Regional Ocean Forum, held in Suva, Fiji on February 2-6, 2004.

1. All Pacific Island countries urgently need to develop and implement laws and regulations necessary for their compliance with global conventions and agreements to which they are signatory. Existing legislation should be properly enforced, and where new legislation is required, this will require substantial outside assistance, since many countries lack the necessary legal expertise.
2. Capacity building in all areas of ocean, coastal and watershed management is a priority for the region. This will require a concerted effort on the parts of national, regional and international education and training institutions, and significant funding. All future projects should be required to include a capacity building component and should engage local communities.
3. The raising of public awareness on all coastal and ocean-related topics is badly needed, from the level of the village to that of government, planners and decision-makers. Schools, NGOs and the media should all play a part in this process. For the schools, this would require a significant investment in the development of national school curricula that reflect local needs.
4. Integrated planning and decision-making is a necessity for all governments. This requires a new paradigm in government, and involvement of all parties in the process, especially the stakeholders. For most countries, the development of an integrated coastal management plan should be a national priority.
5. There is a great need for research on and monitoring of the coastal and ocean environments of the region. The strengthening

of research and monitoring capacity is an a priore need and, where necessary, regional and international cooperation and involvement of communities, NGOs and the private sector should be encouraged. The need should be expressed in all future bi-lateral and multi-lateral aid projects, and funding sought to support it. The strengthening of the research and monitoring capacity of national and regional universities should be encouraged, as well as cooperation with developed country institutions through partnership arrangements.

6. The regional and global lobbying of the Pacific Island countries is commendable, well organised and effective. This now needs to be brought down to the local community level, and proper feedback mechanisms between researchers, managers, government and communities need to be developed.
7. Environmental sustainability needs to be given greater emphasis by governments, many of which lack a relevant ministry or department for the environment. Implementation of sustainability policies will require political will, cooperation, and the provision of appropriate resources.
8. All Pacific Island countries developed National Environment Management Strategies (NEMS) as a lead-up to UNCED. Yet, many of the recommendations have yet to be implemented, and the NEMS are a decade out of date. The NEMS should be dusted off, revised if necessary, and translated into actions. The recommendations contained within NEMS could be linked to economic development plans, in the form of National Sustainable Development Plans.
9. Pacific Island countries must take greater ownership of projects managed by regional organisations, as it is the countries themselves who will have to implement sustainable practices. Countries must strive and seek support to bring this about, because if they fail to do so it could at their peril for the future.