

West-Papua: Only the village people can save their reefs and rainforests

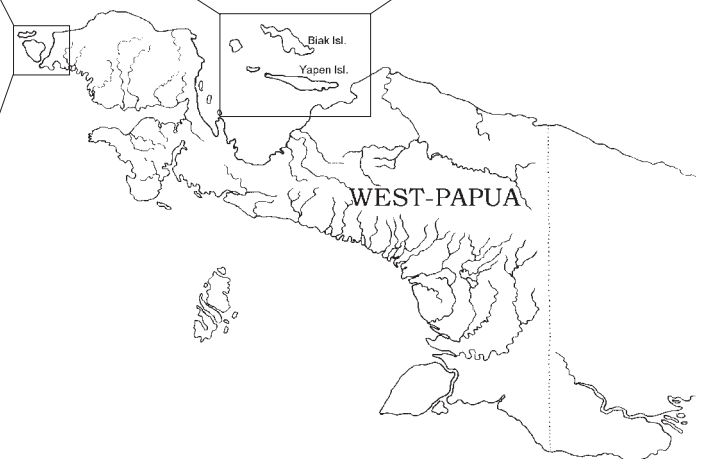
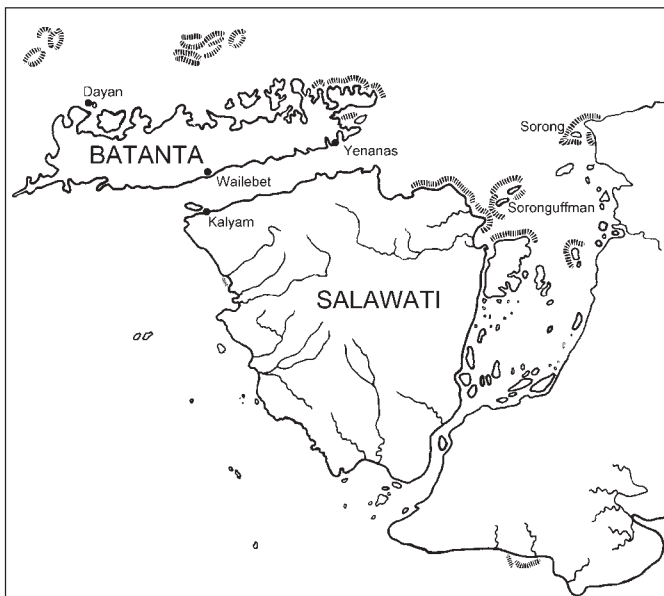
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In this paper, Thomas Schultze-Westrum describes how closely reefs and rainforests are interconnected in the easternmost province of Indonesia, and he suggests that the efforts to sustain their combined unique and incredible biodiversity can only be successful if they involve the local communities. Benefit for the villagers is an essential factor in any such conservation strategy. For the time being, the best approach appears to be ecotourism - as long as it keeps to strict rules and is not consumer-biased. Rather it should comprise lasting beneficial effects for the communities concerned, such as local participation and income, improved living conditions, and social stability, as well as adequate protection of the wild-life species and habitats in the very large village land and sea territories—the forests and the reefs. Schultze-Westrum is the founder of the ECOCULTURE movement that spreads messages about the spiritual perceptions and environmental practices of traditional village peoples and their role in conservation worldwide.

Professionally, over the last forty years, as a zoologist and conservationist, I have been mainly concerned with the magnificent tropical forests of New Guinea (both in Papua New Guinea and in West-Papua). Despite this viewpoint from the land, who could not get fascinated by the sea and the marine life beyond? Just snorkeling over the reefs of West-Papua (formerly Irian Jaya) or Halmahera in Eastern Indonesia allows one to step into an unbelievable, magical dream world of colours, shapes, and abundance of marine creatures of all kinds!

The high diversity of habitats and life forms found in the islands off the coast of West-Papua is remarkable—and, amazingly, still intact. Through ecotourism projects, local villages are working to keep it that way.

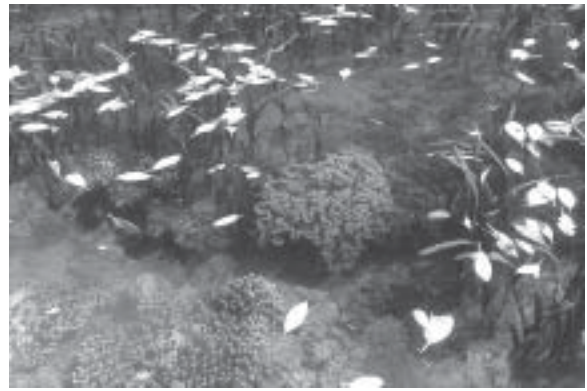


Along the coastline of West-Papua and the islands offshore: Biak and Yapen to the north and the Raja Ampat Archipelago to the southwest, many reefs almost touch the rainforest. Their multiple dependencies upon intact forest cover seem obvious, but are in fact still little explored. Just a few observations about the interconnectedness of reefs and rainforests:

Floating leaves, soft corals, and sea grass in front of mangrove forest, Batanta Island. (Photo by Konrad Wothe)

- Massive clouds accumulate above the forest.
- The big trees precipitate the rainfall, which partly evaporates into the atmosphere and partly drains away into the ground and towards the sea. As it flows into the sea, it carries nutrients that benefit the reefs and other marine biota.
- The forest canopy also prevents overheating of the terrestrial areas below and hence has an overall equalizing effect on the regional climate.
- The roots hold the soil that otherwise would be washed into rivers and smaller waterways and eventually could silt up and kill coastal reefs, and even reefs farther away from the land.
- Under undisturbed natural conditions, these smaller freshwater streams usually run clear, but they carry certain minerals and organic substances that are essential for various marine life systems and affect the chemical composition of coastal waters.
- Some larger rivers are regularly loaded with mud; others carry soil only seasonally or after heavy downpours. Much of this mud is contained by mangroves in estuaries, but murky water diffuses along the coast and out into the open sea, even around some small islands offshore where mangroves associate with soft and some hard corals.
- There is a delicate balance between water composition and the distribution of the reefs, mangroves, and intermediate life communities. Large floats of leaves and other forest debris are carried by the currents along the shores; these build long bands of organic materials that reach out into the open sea and provide food for a great variety of marine life.

● The network of currents acts as a life support system. To some extent it depends in its strength and direction on effluents from the forests inland. These currents are not only crucial for the transportation of food for the reefs and other marine biota, they also regulate water temperatures. As some scientists have pointed out,



overheating causes coral bleaching and may have other negative effects. In the region of West-Papua, for instance in the Raja Ampat Archipelago where currents are strong, there is very little coral bleaching.

- Many species, such as sea turtles and crabs and seabirds, depend on both ecosystems for important parts of their life cycles. If we cannot protect the forest, there will be no future for the reefs offshore.

Good news! Here, in Eastern Indonesia, mainly in West-Papua, the multiple ecological interrelations and the resulting high diversity of marine habitats are still largely intact. More systematic research may reveal that there is the highest biodiversity anywhere in the world here in this zone where reef and rainforest meet in West-Papua. Without question this extraordinary near-pristine treasure trove of biodiversity must be protected. Such enormous natural wealth and the outstanding variety of life forms form the basis of attractive diving enterprises and exploration tours into the forest. However, without adequate conservation measures that work in tandem with tour operations, this unique potential cannot be sustained. Only carefully designed ecotourism that considers the overall importance of integrated conservation can have a long-term future here. Because of the complex inter-relationships with terrestrial ecosystems, especially the forest that is unfortunately under threat by logging, the coastal ecosystems prove more vulnerable than the reefs distant from the land.

By definition ecotourism aims to preserve the natural assets upon which the tourism operation is based. Carrying capacity and appropriate behaviour by divers are therefore important aspects of eco-diving. However, equally important to the concept of ecotourism is the participation of local communities in any tourism operation. In Eastern Indonesia, particularly in West-Papua, the villages' traditional land rights now receive full official recognition and

The very fragile life community (with soft corals) in front of mangrove forest, Batanta Island. (Photo by Konrad Wothe)



they extend to the reefs offshore. These reefs are usually owned by the respective entire village communities. The advantages for conservation and sustainable tourism operations are obvious. As long as the land tour and diving operators respect these territorial rights and give a fair share of income to the local communities, the natural assets (both terrestrial and marine) are effectively protected. There is no need to seek income from commercial logging, and



Tourist camp Wailebet, Batanta Island. Built on abandoned garden land and owned by the village community of Yenanas. (Photo by the author)

there is strong motivation for patrols to prevent the bombing of reefs by intruding fishing boats or their use of poisonous chemicals to catch fish on the reef.

Papuans, on the village level, still retain a strong attachment to nature and would not sacrifice their resources without need. Until now, however, the only means to obtain more than a meagre income was from destructive activities like logging and over-exploiting marine resources. True ecotourism offers an alternative income, but the new venture must be on-going and well balanced between the local people and the operators. For example, cruise ships such as live-in diving boats should consider territorial rights on the reefs that they visit. A fair fee should be paid to the community in respect of these rights. Only then can one talk of overall marine ecotourism.

RAJA AMPAT ECOTOURISM PROJECT

Raja Ampat is one of two pilot projects for marine and terrestrial ecotourism in West-Papua currently in progress. In the Raja Ampat Archipelago, which is composed of the Papuan Islands off Sorong at the Bird-Head tip of the New Guinea mainland, eight villages are setting up their own foundations for ecotourism, conservation, and compatible small-scale developments. There will be one foundation in each of these villages, which are found on Batanta, Salawati and Waigeo islands. Initial financial support for this scheme came from the German tropical forest foundation Oro Verde. These village foundations have now

set up their own company, P.T. Raja Ampat Pesona, for better coordination and more efficient operation. Each village is creating a camp, which will form the operational base for the divers' adventures and inland tours.

Village people, however, are not experienced in handling tourists, and so they need advice, training, and help in promoting their tourism potential abroad. Therefore another company called Papua-Explorer (P.T. Mata Rimba Bahari) is being established, in order to professionally design tour programs, prepare information packs, take bookings, do the coordination and advertising, and be a liaison with tour and diving operators. One of the fundamental rules set by P.T. Raja Ampat Pesona is that any operator can bring groups to the village camps, provided that the visitors observe the conservation rules and show respect towards the local people. Even single divers are welcome and can be integrated into the operation. While the camps are owned by the village foundations, the tanks, compressors, other gear, and local dive guides are available from the service company Papua- Explorer. There will be a fully qualified PADI diving instructor in charge, but groups also have the choice of bringing their own instructor. The aim is to create a flexible system that serves both the guests and the village people, whilst helping to protect one of the last remaining true wilderness areas of reefs and rainforest.

BIAK ECOTOURISM PROJECT

The second project is being implemented in the wider region of Biak Island, north of the mainland. This region includes the Padaido Islands and Supiori Island (the sister island to Biak) as well as several small islands offshore, namely, Numfor, Mios Num and the sea area between Biak and Yapen Island. The oceanic islands of Mios Befondi, Aiawi, and Mapia are also part of this project. In previous years, the regional Rumsram Foundation provided funds for several villages to build simple "home stays" for tourists. However, without a professional agency to consistently promote and manage tourism, there were not enough tourists to use these facilities and eventually the houses deteriorated. This was a good idea that

Planning of new tourist guest house by land owners and village headman (kepala desa; in the centre) at place Amunauw (former village site), northern Biak Island. (Photo by the author)



reached a dead end and caused considerable disappointment in the villages.

The new approach considers both the village people and the professional handling of tourists. Again, tourist camps will be built at selected locations throughout the region. The village communities will own 50% of them and the central agency (P.T. company) in Biak town will own 50%. The villagers are providing materials and labour, and the necessary financial investment is coming from the outside (public sources, NGOs, and private funding). It is a joint venture with the village communities that is being tailored according to the specific conditions in the Regency of Biak-Numfor. Because of Biak's special status as an "Integrated Economic Development Zone" and its location, it is the main "gateway" for West-Papua and there's considerable economic activity to be expected. Also, here, the underlying condition of true ecotourism is fully met: namely, there is the greatest possible benefit for both communities and habitat. Together with the central agency, which is the same as for Raja Ampat (Papua-Explorer), the village communities will design the conservation activities. There will also be strict rules under which the entire operation is being promoted and run, both in the marine sector and on the islands. These rules will originate from the people with only supportive advice from the outside. The Association of Tour Guides of Biak has already started a community project to stop the further destruction of reefs due to the use of explosives and poisonous chemicals. This Association, whose members come from various villages in the region, will have a share in the company Papua-Explorer. Eventually, the scheme will be extended to other parts of West-Papua with high conservation value and ecotourism potential. All the company shares will reach Papuan hands. The aim is to prevent commercial exploitation by single or groups of business people. The scheme should always retain its original conservation scope, communal character, and focus on villages.

NATIONAL SUPPORT AND SIGNIFICANCE

The Indonesian government fully supports the Raja Ampat and the Biak ecotourism projects because they promote several major public policy goals: economic growth for the village communities; promotion of the Regencies of Sorong and of Biak Numfor as valuable tourist destinations (which also clearly benefit the businesses in Sorong and Biak towns); and nature conservation. The priorities for the latter are to develop practices for the sustainable utilization of natural resources and to preserve the outstanding

biodiversity of the two regencies. Actually, under the current socio-economic situation in Indonesia, the effectiveness of conservation on this grassroots level is far greater than in state-controlled marine and terrestrial conservation areas.

As in other countries, the Indonesian government has "declared" national parks, nature reserves, and other conservation areas. By doing so, the government has taken over the traditional rights of village people over reefs and forested land. One result is that conservation only works in these "protected" areas, if the authorities can provide well-trained and motivated rangers, their salaries, outfits, speedboats, and other gear necessary to patrol the area continuously. A second consequence is that the village people oppose rather than support conservation measures in these "protected" areas, because they have lost their traditional rights and access to the natural resources on their traditionally owned land without any adequate compensation.

Worldwide very few governments can afford and fulfill the task of enforcing the law in protected areas. Indonesia is no exception. Right now, due to the effects of her economic crisis, but also for other reasons, Indonesia is far behind her obligations in this respect. Eighty percent of the reefs in Ujung Kulon National Park have already been destroyed (*Jakarta Post*, 25 January 2000). There is not enough manpower, transportation, and other facilities to safeguard one of the world's most recognized conservation areas. Illegal logging threatens national parks in Kalimantan and elsewhere. Poachers kill even Orangutans and birds of paradise.

Clearly the global conservation strategies and activities have gone down the wrong road for a long time by not considering and including the active support of local people, village communities in particular. In 1978, in a survey report for PHPA (Indonesian Conservation Authority)/F.A.O./W.W.F., I proposed the marine conservation area (now a Marine National Park) Teluk Cenderawasih for the first time. In this report I stressed the great significance of village communities in practical conservation. Yet today, more than twenty years later, the Papuan fishing communities in the marine park are still not integrated or even consulted adequately. In later surveys when designing a management plan for the park, the W.W.F. recommended that certain uninhabited islands and the surrounding reefs should be declared "sanctuary zones." These zones mean that no one, including the local fishermen who are the traditional owners, can go there. The term "sanctuary" sounds good,



but what has been achieved? Because there are no regular patrols by park rangers, and because there are no longer any incentives for the local Papuan fishermen to protect these reefs, foreign boats carrying explosives and chemicals have easy access now—much easier access than before the area was declared a “protected” zone.

The State even has difficulties in enforcing conservation laws in her own bodies. Ships of the state line PELNI regularly dump their garbage and plastic overboard on their route through Teluk Cenderawasih! Plastic, in particular, is a hazard for marine life. Generally, waste disposal is a serious problem, even in the large Province of West-Papua with its low population. One only has to stroll along the shores near Biak town to view plastic everywhere, and hardly any beaches in the archipelago are actually clean. This state of affairs is a threat to both marine biota and tourism. No foreign traveler tolerates pollution any more and no diver wants to return

to reefs that are littered with plastic and other garbage.

It will require considerable effort worldwide (and within both government and NGOs) to shift the level of active conservation “downwards” to local communities. In regions such as West-Papua where traditional systems still work, however, I feel it is the only way to implement practical, self-motivated (as opposed to “enforced”), and self-organized protection and sustainable utilization of natural resources. Ecotourism has a significant role in this process. In many areas it is the prime, if not the only, means of generating income for local communities whilst preventing further destruction of the reefs and the forests. State legislation must take more account of this potential. Of course tourism in sensitive areas should be restricted and special rules should apply, but to impose unnecessary restrictions on tourism is counterproductive. It eliminates a considerable conservation potential: the local peoples’ support.

There are few regions left on Earth where “reef and rainforest” are still as little explored, utilized, and opened up for tourism as in Eastern Indonesia, especially in West-Papua. There are equally as few regions where people still retain their traditional close relationship with their natural environment, their intimate knowledge about the natural world and even its limits in their traditional utilization, as well as a clearly defined system of rights on land and in offshore waters. Combining and respecting these factors create a unique and wonderful opportunity for both Indonesia and the world: to do it right from the beginning for the first time!

Garbage left on the beach of Jefman Island, where the airport of Sorong is situated and where all tourists for the Raja Ampat Archipelago arrive. Salawati and Batanta Islands in the background. (Photo by the author)

Foureye Butterflyfish, *Chaetodon capistratus*.

This is one of the most common butterfly fishes in the wider Caribbean but ranges as far north as the Carolinas and as far south as Brazil. The large eye-like spot on the hind body, dark bands on the scale rows (with yellow in between), and a black band with yellow margin across the eye help distinguish this from other butterflyfish species.

Foureye Butterflyfish are reported to feed on tubeworm tentacles and sea anemones. Maximum length is usually 10 cm, but sometimes reaches 15 cm. This species is collected for the aquarium industry.

The Purple Seafan, *Gorgonia ventalina* (Front cover illustration by Roelof Idema).

Divers in the wider Caribbean have been impressed by this fan-like life form, the Purple Seafan, 0.6 to 2 m high. The tightly-meshed network of branches lies in a single plane that faces into the current to gather zooplanktons. Symbiotic algae provide a portion of the seafan’s energy needs. Seafans need clear water on the seaward side of shallow reefs, slopes and patch reefs. Although it ranges from 1 to 30 m, it is seldom found deeper than 15 m.

In the Caribbean, seafans are sometimes sold or taken as souvenirs, a practice to be discouraged. Monitoring and conservation of seafans is needed if they are to survive. Gorgonians in the Indo-Pacific have been harvested for their biomedical potential - those in India have been harvested so much that they have become smaller in size and rarer.

The seafans have few enemies, but in recent decades they have been attacked by diseases, one of them a land-based fungus perhaps carried into the sea by erosion. Mass mortalities have been reported in Colombia, Panama and Costa Rica.-- Don E. McAllister.

