



**Protecting Raja Ampat...** widely considered to have the best diving in the World, it is one of the last, hyper-diverse marine environments still more or less intact. With local people we're working to protect Raja Ampat's remaining coral reef ecosystems, 'one reef at a time'.

## **RAJA AMPAT, PROTECTED REEFS PROGRAM** *so far..*

**Raja Ampat islands, West Papua, Indonesia**  
In the 'Coral Triangle', part of the 'Birdshead Seascape'

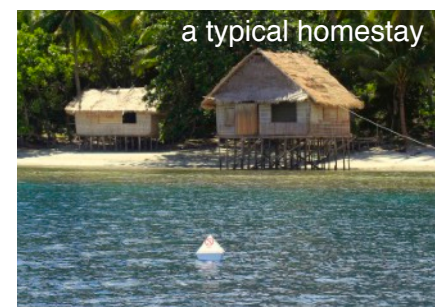
**WHY:** Raja Ampat is one of the most diverse marine environments in the World and many parts remain in good condition. Large parts of Raja Ampat are already heavily impacted by bomb fishing, unregulated fishing, boat anchors & chains, over-diving, rubbish and nutrient pollution. Those reefs still remaining in good condition are threatened and should (urgently) be saved.

Corals in famous dive locations are dead or dying, one major cause, excessive numbers of scuba divers and their boats. Rapid and poorly regulated development (with all its consequences) and unregulated fishing are now the major threats. Without realistic protection the remaining reefs will, almost inevitably, be destroyed.



**HOW:** A homestay owner wants to protect their 'house reef'. We approach village leaders and ask permission to give a presentation to the community. After the presentation we ask the community to support the new protected area/s. If they agree, they get the local church to declare 'Sasi', a form of environmental protection respected by Papuans.

After 'Sasi' protection is declared, fishing and anchoring are no longer allowed inside the protected areas which, are clearly marked and sign-posted. These very obvious marker buoys are a critical part of the success of protected areas *because no-one can claim they didn't know.*



We provide the marker buoys which, are attached by chain and rope to heavy sandbags on the bottom. The buoys are placed in deep water just outside the slope of the reef. They are placed in a line following the edge of the reef not the shoreline. The buoys require some maintenance.. monthly cleaning of marine growth off the buoys and lines. Once the marker buoys are installed and 'Sasi' is declared, ownership and management of the project devolve to the local landowner or community.



**WILL IT WORK?** Most of our protected areas are in front of locally-owned *homestays*. The owners are incentivized to enforce the protected areas by the direct benefits they get from ecotourism ie. Healthy 'house reefs' with numerous fish are a real attraction.

***Tourists come to Raja Ampat to see the marine environment so they are more likely to book a homestay advertising it has a protected house reef.***

Over time the difference between protected and unprotected reefs will become more and more obvious. Enhanced guest experiences and their videos and photos will become the source of more bookings for those homestays with plentiful sealife and intact corals. Homestays with unprotected reefs will soon see the benefits to their competitors and will quickly seek to copy them, indeed, this is already happening.

Island *communities* are incentivized to declare, and enforce, protected (communal) areas for three reasons:

1. They want locally-owned ecotourism to grow
2. They want reef fish populations to recover
3. They have a deep desire to control their own areas



**POLITICS:** Without adequate protection Raja Ampat's coral reefs are suffering from '*The Tragedy Of The Commons*'. Locals do not feel empowered to turn fishermen from other areas away or restrict their neighbor's unsustainable activities but preserving the environment and saving fisheries can transcend contentious politics. Declaring small protected reefs *empowers local people* to control and protect their areas *without* creating a political or social problem.

**WHO:** I am Norm van't Hoff, 60, Australian, living full-time in Bali for nearly 20 years. I've frequently been hired, by USAID, American Red Cross, British Red Cross, Swiss Caritas *et al.* as an expert on environmental management and design, but if we're going to turn things around, it won't be NGO's or even Government who will do it. Big picture, if we're going to save what's left, most of the solutions will have to come from business, especially, locally-owned business.

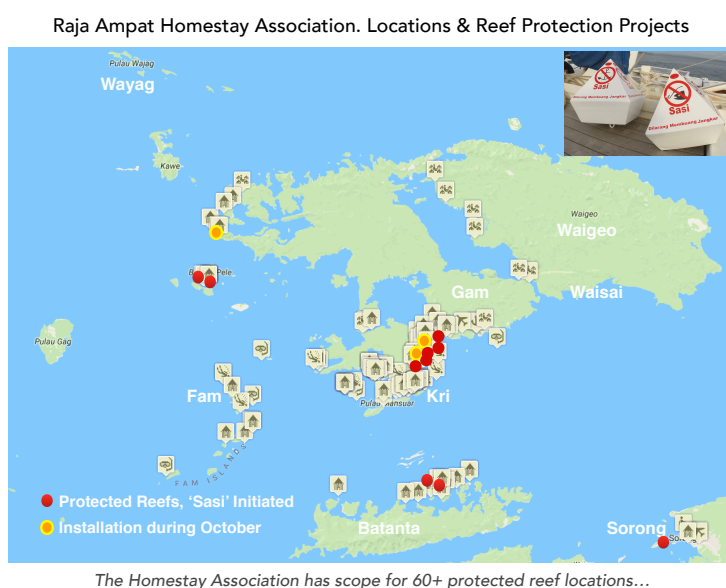
Nowadays, I occasionally consult on environmental management. I also design and construct various 'green' projects, see: [www.greenworldbali.com](http://www.greenworldbali.com)

My wife, Linda, manages our family business which, is seen on Bali as a leader in small-scale ecotourism. The business gives me a measure of freedom to pursue my passion for conservation, see: [www.baliecolodge.com](http://www.baliecolodge.com)

History: I began my activist career while working as a boat/yacht Captain in the Whitsunday Islands, on the Great Barrier Reef, some 30years ago. My first environmental campaign resulted in the Marine Park Authorities installing No-Anchor Zones, marked by the same pyramid-shaped buoys, up and down the length of the GBR.

**LOCAL NETWORK:** I am working closely with the leadership of the **Raja Ampat Homestay Association** which, has 100+ members and **60+ operating homestays** scattered around the northern section of Raja Ampat. The Association which, recently won a significant UN award, is active and well organised, see: [www.stayrajaampat.com](http://www.stayrajaampat.com)

**POTENTIAL:** The reach of the Homestay Association provides an opportunity to install a lot of protected areas, over a wide area, and in a short time. According to the leadership, they'd like to see protected areas at every homestay in the Association, that's potentially, 60 unique protected areas. Tangible benefits mean homestay owners are keen to cooperate (especially when they see neighbours installing marker buoys). The Homestay Association network is the social infrastructure that will allow this program to go (locally) 'viral'.



As a result of the work so far, I've been approached by two island communities who'd like to declare protected reefs. Communities have the potential to protect much larger areas so, in terms of reef conservation, this would be a significant leap forward for the 'Sasi' program.

**RISKS:** The biggest risk right now is *the small scale of the program*, ie. It is still fragile. Currently, we only have fifteen locations protected or in process. Any small failures right now seem significant, but with a big push during 2018, at some point the program will grow large enough to become more robust.

The next risk is *a lack of follow-up*. The ultimate goal is to hand the program over to locals and the Homestay Association, it's the only sustainable way, but first it needs well established standards and 'a life of it's own'. I predict that for the next 1-2years the program will require a driving force and adequate (outside) follow-up.



**RESULTS:** To date, with US\$35k generously provided by Bill Price, we've got fifteen protected locations, significant exposure and growing local credibility. While most of the protected areas are small, overall, including the larger projects, the visible effect on marine ecosystems over the next months and years will be inspiring.

We know what happens when we stop fishing and halt damaging physical impacts, especially in a hyper-fertile area like Raja Ampat, sea life comes back and in glorious profusion. According to the land owner at our first project on Soof Island (a difficult location very close to the regional city) in less than a year he has already seen a dramatic increase in fish numbers.

**GOVERNMENT:** To date, although we avoid getting them involved, we do have support from the relevant Ministries of the Regional and National Governments. Occasionally we invest in a community gathering with the local Heads of Departments, although I only do this when it seems really necessary or if it's tangibly beneficial to the program. It should be noted that Government in Indonesia is generally more accessible and less intrusive than in it is in Western countries.

**MOORINGS:** This discussion is incomplete without mention of the urgent need for a lot of public moorings scattered throughout Raja Ampat. Ideally, the current program would be broadened to include the installation (and maintenance) of moorings in strategic, and vulnerable areas that are frequented by charter boats and private vessels.

This problem cannot be overstated, ***anchor damage is a massive threat to Raja Ampat.*** Neither regulations or voluntary codes of behaviour will stop the damage. In this case the solution is infrastructure. Installing many public moorings, along with clearly-marked no-anchor zones, would rapidly solve most of the problem.



**A BUSINESS-BASED ENVIRONMENTAL SOLUTION:** Papuans, being 'rational agents', will pursue what they perceive to be their best interests. Even though Papuans have a healthy distrust of outsiders, this program works because it has several popular arguments.. growing tourism, restoring fisheries, and enshrining local control, meaning our projects are relatively easy to sell.

The National Government has identified Raja Ampat as a major tourism growth centre and it's fame is spreading fast through Asia and the international (diving) community. In terms of locally-owned business, homestays are seen as the most likely growth sector for island economies. Homestays are widely distributed through the islands and they benefit from protecting their house reefs, so they are positioned to have a sustainable, significant and long-term impact on reef conservation in Raja Ampat.

**Island resorts** are important and they're growing in number. We are now working with the first resort to install marker buoys on their house reef, and a big plus, they're also paying for the marker buoys for three adjacent homestays. Overall this will protect nearly a kilometre of reef. More resorts joining the program would substantially increase the areas under protection.



**A VIABLE WAY TO PROVIDE MOORINGS...** This is the sharp end of the stick. In the real world, nobody even looks like protecting what's left of Raja Ampat, so, if we have the capacity, we are morally compelled to do something. We have technical solutions, we know the costs, we have a functioning social network, and there is widespread agreement that moorings are critical if we're to protect Raja Ampat. The question is.. how do we pay for them?

**COST OF MOORINGS:** Placing and maintaining moorings in relatively deep water, usually deeper than 30m, is expensive. Given a work vessel and equipment are available, a mooring large enough to hold a large liveaboard dive boat or private yacht will cost US\$5.000+. A mooring large enough to hold a super yacht, \$8-10k. Where does this money come from, how much to charge users, and how to collect the fees?

*Moorings have some potential to earn income although it will not be sufficient to cover all the costs of installation, management and maintenance.*

**MANAGEMENT OF MOORINGS:** Once moorings are placed in a popular location, *all anchoring can be stopped which, creates a monopoly for the moorings*. All charter and private vessels will have to pick up a mooring and pay the price. To gain permission and cooperation, *mooring fees will have to be shared with the responsible community*.

If moorings are to be used/trusted, it is vital that they have annual inspections & maintenance. I have an economical plan for maintenance whereby charter boats contribute by using their divers to swap the mooring tackle annually. Easy for them and cheap for the overall program.



This ship grounding got world-wide headlines but it did very little damage to an already dead reef. The damage done by charter boats, fishermen, developments, resorts and hundreds of divers every day is enormously worse than that done by this cruise ship

**MANAGEMENT AND INSTALLATION COST OF PROTECTED AREAS:** Maintenance of the marker buoys is done by the homestay owner. I've come up with an averaged price of installation per buoy of US\$350. Protected areas, mostly homestays, vary from 3 to 20 buoys ie. From \$1050 to \$7000 per homestay, protected house-reef project.



Crown of Thorns Starfish and water pollution most likely killed these corals



A famous dive-site, 'Sardines Reef', is destroyed, anchors & too many divers are most likely culprits

**WHAT NEXT:** To continue the protected reefs program I'm going to attempt a crowdfunding campaign in Jan/Feb/March 2018. I'll be seeking \$150k which, would allow me to do 50-60 new locations plus a few small/medium size moorings, see video: <https://www.youtube.com/watch?v=fihGGNSbktE>



To move ahead on moorings, I'm in need of substantial assistance. Specifically, although I have some major pieces of the puzzle, *I haven't got a strong business plan*. For scale, I estimate installing sufficient moorings around Raja Ampat will cost US\$1-1.5mil

To start installing moorings, investments are required.. A small work boat, diving and drilling equipment, skilled crew, large anchors and/or reefs bolts and sand screws. *Minimally*, \$100-150k.. And management and operations would be funded how? I'm not seeing it, perhaps I'm too close to the whole thing, someone more objective might see a viable way to make this happen.

Putting aside the practical challenges, the consequences of doing nothing are horrible. Do we let Raja Ampat go the way of other previously great places or do we find solutions to save it? If we can find a practical way ahead, I'm certainly willing to do what I can to save one of the last great places left.

Potential funding sources: Government, charter boats, private yachts, resorts, NGO's

**Government** levies a local 'tax' on tourists coming to Raja Ampat which, generates a lot of money although how this is being disbursed is not transparent. It might be possible to negotiate contributions from this fund.

**Super yachts** come through Raja Ampat regularly, one owner, say Paul Allan who owns 'Octopus' could fund the whole program without breaking a sweat.

I sent a scoping proposal to USAID with no response. **Conservation International** has spent US\$6mil in Raja Ampat. Apparently, most of this money was from the Walton's Foundation. They're pulling out now although Raja Ampat remains extremely vulnerable.

Around **60 liveaboard dive boats** are permitted to operate during the dive season in Raja Ampat. It's notoriously difficult to get money from these guys, the most likely option is they simply pay fees to use moorings. They might also provide the solution for annual maintenance.

**Dive Resorts** *might* be convinced to pay for moorings where it's perceived to suit their interests.

**Norm van't Hoff**

Sarinbuana Eco Lodge, Bali, December 2017

email: normbali@yahoo.com

website: [www.greenworldbali.com](http://www.greenworldbali.com)

video (YouTube):

<https://www.youtube.com/watch?v=fihGGNSbktE>

