This is a publication of the Farqharson Institute of Public Affairs

10 ANSWERS

to Hard Questions about Hurricane Melissa

NOT FOR SALE

ISBN 978 976 96371 4 6
Author: Angela Ramsay, PhD. Environmental Specialist and Applied Psychology Educator

Reviewers:
Georgia Donaldson, Celebrated Regional Leadership Expert
Tiamoyo Lyn-Pagon, Award-winning Environmental Management Specialist
Ava Maxam, PhD, Multiple-award Winning Oceanographer
Hillary Westmeier, PhD, former Chief Scientist, The International Centre for Environmental & Nuclear Sciences.

PUBLISHER INFORMATION
Farquharson Institute of Public Affairs (FIPA)
5 Lyncourt, Kingston 6, Jamaica
Email: fipamgmt@gmail.com
Web: www.fipaglobal.com

Book Design/Layout by Denise Johnson–Anderson

10 Hard Questions About Hurricane **Melissa** (and Future Storms)

1. What building materials and designs can actually survive severe hurricanes?

2. Which crops can withstand hurricanes and feed us during recovery?

3. How should we manage money differently when we live in hurricane zones?

4. Why must we build stronger communities to survive disasters?

5. Should we reject the idea that God is punishing us with hurricanes?

6. If this is climate change, what does that mean for us?

7. Can small actions like waste sorting really matter when the problem feels so big?

8. Why must we plan for disasters even when it feels like inviting trouble?

9. Should we still invest in coastal communities, or is it time to retreat?

10. How do we talk to children about hurricane risk without traumatizing them?

1

Building Materials : What Construction Can Survive?

Dome structures: Buildings designed with smooth, curved shapes are among the most hurricane-resistant, because they do not give the wind flat surfaces to push against. Their aerodynamic shape allows wind to flow over rather than push against flat surfaces.

Several dome homes in Florida survived Category 5 hurricanes with minimal damage while conventional houses around them were destroyed. The continuous structure has no corners or edges for wind to catch. Note that FIPA has been recommending domes for some time now.

The Old Hope Road thatch roof paradox: During Hurricane Gilbert in 1988, a traditional African-style thatched roof on Old Hope Road survived while modern structures failed.

This wasn't accident - traditional thatch, when properly constructed with the right materials and techniques, can flex with wind rather than resist it rigidly. The individual strands move independently, dissipating force.

However, this requires specific knowledge that's been largely lost - not all thatch construction is equal, and poorly done thatch is highly vulnerable.

Other resilient materials:

- **Reinforced concrete with proper engineering:** Insulated Concrete Forms (ICF) construction, where concrete is poured between foam forms, creates exceptionally strong walls
- **Steel-frame construction** with proper anchoring and hurricane straps.
- **Ferrocement:** Thin shells of cement over steel mesh, used successfully in boat building and increasingly in housing
- **Traditional stone construction** with lime mortar (more flexible than modern cement)
- **Properly designed timber frame** with metal connectors and hurricane clips - the key is the connections, not just the material

> **The critical point: It's not just materials - it's design and connections. Roofs must be properly anchored to walls, walls to foundation. Many houses fail because the roof lifts off, then wind enters and explodes the structure from inside.**

While these domes might appear futuristic, they are an example of climate-smart architecture we must urgently explore to strenghthen our resistance to hurricanes.

Which Crops can Withstand Hurricanes?

Root crops are your insurance:

- Cassava (yuca): Can be left in the ground for months, even after hurricane damage to leaves
- Sweet potato: Similar resilience, regrows quickly
- Dasheen/taro: Survives underground
- Yams: Protected below ground, traditional food storage

Trees that bend and recover:

- Bamboo: Incredibly flexible, regrows rapidly, provides construction material
- Breadfruit: Deep-rooted, often survives when other trees fall
- Coconut palms: Designed to bend in wind (though they can still fail in extreme conditions)
- Plantain/banana: While the plants blow down, the root systems survive and regrow within months - quick food recovery

Quick-growing recovery crops:

- Pigeon peas: Can be planted immediately after hurricane, produces within 3-4 months
- Leafy greens (callaloo, amaranth): Ready in weeks
- Fast-maturing corn varieties: 60-90 days to harvest

The diversification principle: Don't put all your food security in one type of crop. Traditional Caribbean kitchen gardens mixed ground crops, climbing crops, and tree crops at different heights - if one layer fails, others may survive. After Hurricane Gilbert, people who had diverse gardens recovered food security much faster than those dependent on single crops or external supply chains.

Salt tolerance matters: After storm surge, soil salinity is a problem. Salt-tolerant crops like certain varieties of sweet potato, coconut, and moringa become especially valuable.

3

Should we Manage Money Differently?

The Discipline of Emergency Reserves

The Hard Truth: In hurricane and earthquake zones, treating "extra" money as truly disposable is a luxury you cannot afford. What feels like surplus today is tomorrow's survival fund.

The Tight Budget Wisdom: The videos recommended by FIPA on living within your means are not about deprivation - they're about security. When disaster strikes, those who have been saving 10-20% of income have options: temporary housing, replacing essentials, maintaining children's education, avoiding predatory loans. Those who spent everything face impossible choices. Note, however, that we also understand that some incomes are so small that savings becomes very difficult.

The Calculation: If major hurricanes hit your region every 5-10 years on average, you need reserves equal to 3-6 months of expenses. This is not pessimism but mathematics. Insurance helps, but doesn't cover everything, and payouts take time.

Community savings approaches: Some Caribbean communities have revived "partner" or "sou-sou" systems specifically for disaster preparation - structured group savings where members can access funds for hurricane preparation or recovery. These

work because of social accountability and shared risk.

Protecting Cash and Critical Documents: It is important to have cash on hand during a disaster, as you, and any affected friends or family, may be unable to access bank accounts. Remember also that important documents represent money: replacing them can be costly and time-consuming. Store all essential cash and documents in sealed plastic containers, and if possible, in a fire-resistant safe.

Why should we build Stronger Communities?

Why community strength matters more than individual preparation:

Government response is always slower than you hope. External aid takes time to arrive and coordinate. In the critical first 72 hours to two weeks after a major hurricane, your survival often depends on your neighbours and the general community.

What strong communities do differently:

- **Pre-identified skills and resources:** Who has a chainsaw? Who has medical training? Who has a generator? Who has pickup trucks? Who has the most practical experience in protecting people, pets, and other animals before a hurricane? Strong communities know this before disaster strikes.

- **Established communication systems:** When cell towers fail, communities with ham radio operators, established meeting points, and neighborhood check-in systems save lives. After Hurricane Maria in Dominica, communities that had regular town meetings and knew each congregant fared much better than atomized neighborhoods.

- **Social capital prevents exploitation:** After disasters, price gouging and scams proliferate. Strong communities share resources, information about fair prices, warnings about predators. They also hold each other accountable - community pressure prevents some from hoarding or profiteering.

- **Collective trauma processing:** The psychological impact of hurricanes is severe. Communities where people gather to share experiences, check on the vulnerable, and maintain normal social rhythms (church services, domino games, community cooking) recover mental health faster than isolated individuals.

- **Rebuilding capacity:** One person with a tarp struggles. Ten people can roof a house in a day. Communities that organize work parties, share tools, and pool labor rebuild faster and better.

- **The Investment required:** This does not happen automatically. It requires regular community meetings, knowing your neighbours' names, participating in community organizations, contributing when you have capacity. The time you spend at community events now is the social capital that saves your life later.

5

Is God Punishing Us?

Why this mindset is dangerous:

When disaster strikes, some voices will claim it is divine punishment - for sin, for insufficient faith, for moral failings. This theology is not just wrong, it's harmful.

The Theological Problem: Jesus explicitly rejected this thinking. When asked about people killed when a tower fell (Luke 13), he said they weren't worse sinners than anyone else. When disciples asked if a man's blindness was punishment for his or his parents' sin, Jesus said no - that's not how God works.

The Practical Damage:

- **It paralyzes action:** If disaster is punishment, why prepare for the next one? Why build stronger? Why save money? You're just waiting for the next divine blow.

- **It destroys community:** If disaster means God is angry at us, communities fracture as people blame each other for bringing divine wrath.

- **It adds trauma:** Survivors already carry grief, loss, and physical trauma. Adding guilt and spiritual terror makes healing impossible. Children especially internalize this - they believe their badness caused their home to be destroyed.

- **It enables exploitation:** Religious authorities who preach punishment theology often position themselves as intermediaries who can appease God - for a price. This theology enables spiritual and financial abuse.

The Alternative: Hurricanes are meteorology, not morality. They follow atmospheric physics, not divine anger. Living in their path requires wisdom and preparation - not self-flagellation. God's presence in disaster is not in sending the storm, but in the neighbor who shares water, the stranger who pulls you from rubble, the community that rebuilds together.

Faith that helps: Belief that gives strength, hope, and resilience to face natural disaster and rebuild. Faith that drives you to prepare wisely, care for neighbours, and maintain hope. Not faith that makes you passive or guilt-ridden.

6

Is This Climate Change?

Yes, Very Likely, Because...

The evidence specific to hurricanes:

- **Warmer ocean water = stronger storms:** Hurricanes draw energy from warm ocean water. Caribbean sea surface temperatures have increased measurably over recent decades. Warmer water means storms can intensify more rapidly and reach higher categories.

- **Slower-moving storms:** Research shows hurricanes are moving more slowly across regions, which means they dump more rain in one place. Hurricane Dorian (2019) nearly stalled over the Bahamas - this pattern is becoming more common.

- **Rapid intensification:** Storms are strengthening faster than historical patterns. Hurricane Maria went from tropical storm to Category 5 in about 15 hours. This rapid intensification makes preparation harder - you have less warning time.

- **Extended season:** Hurricane seasons are starting earlier and ending later than historical records show. The "off-season" is shrinking.

- Rainfall intensity: Even when hurricane frequency does not necessarily increase, the amount of rainfall from each storm is increasing. Warmer air holds more moisture.

What this does not mean:

- It does not mean you can blame every specific hurricane on climate change - hurricanes have always existed in the Caribbean

- It does not mean adaptation is a waste of time

- It does not mean individual action is pointless

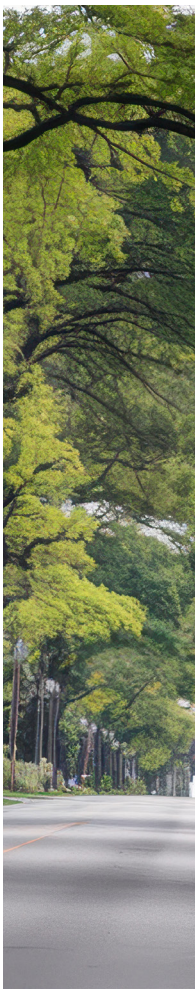
What it does mean:

- Building codes need to assume stronger storms than historical records

- "100-year storms" might happen every 20-30 years now

- Emergency reserves need to be larger because disasters may be more frequent

- Climate adaptation must be part of all planning - agriculture, construction, insurance, everything



The Caribbean-specific reality:

Small island nations contribute almost nothing to global emissions but face disproportionate impacts. This is fundamentally unjust. However, while advocating for global action and climate finance, communities must also adapt to the reality they face now.

7

Do Small Actions Really Matter?

The Power of Reputation and Demonstrable Care

The psychological paralysis: Climate change feels too big. Hurricane damage feels overwhelming. Poverty feels intractable. So people do nothing, believing their small actions are meaningless drops in the ocean.

Why this thinking is wrong:
A school that implements proper waste sorting - plastics in one bin, compostables in another, recyclables in a third - hasn't solved climate change. But they have done something more important: they have demonstrated they care, they're organized, they take responsibility for their environment.

The reputation effect: After a disaster, when aid organizations and donors are deciding where to direct resources, they look for communities that show capacity and care. A community with a track record of environmental stewardship, organized systems, and demonstrated follow-through becomes more "investable."

Real examples:

- Communities in Jamaica with established waste management programs received faster NGO support after storms because donors saw them as "serious" and likely to use resources well

- Schools with environmental programs often get chosen for local and international pilot projects, grants, and partnerships

- Individuals known for community leadership get tapped for training and resources

The Internal Effect: Taking action on what you CAN control - even small things like proper waste disposal - builds agency. It's the psychological opposite of helplessness. A community that says "we can't stop hurricanes, but we can keep our drains clear and our environment clean" is practicing resilience.

The Cascading Effect: One household separating waste influences neighbours. A school teaching environmental responsibility shapes students who influence their families. Small visible actions create social proof that caring about the environment is normal and valued.

The Practical Connection: Blocked drains from plastic waste worsen flooding during storms. Deforestation (often starting with small-scale clearance) reduces natural storm barriers. Environmental carelessness and disaster vulnerability are directly connected - small responsible actions have real protective effects.

8

Why Plan for Disasters?

The Psychological Resistance: Planning for disaster feels like inviting it, tempting fate, being pessimistic, or not having faith. This is magical thinking, and it kills people.

Why planning isn't pessimism - it's love:
You wear a seatbelt not because you expect to crash, but because you love yourself and your family enough to take simple precautions. Hurricane preparation is the same.

What disaster planning involves:

Insurance (if possible):

- Homeowner's insurance with hurricane/windstorm coverage
- Flood insurance (separate from hurricane coverage)
- Business interruption insurance
- Understand your deductibles - many hurricane policies have percentage-based deductibles (2-5% of home value) not flat amounts
- Photograph everything you own for claims
- Keep policies in waterproof containers, with copies elsewhere

Physical preparation:

- Storm shutters or plywood cut to size (measured and labeled for each window)
- Generator or alternative power source
- Water storage (minimum 3 gallons per person for 3 days, but aim for 2 weeks)
- Non-perishable food supplies
- First aid supplies and essential medications
- Important documents in waterproof containers
- Battery-powered radio
- Cash (ATMs and card readers fail)

Property hardening:

- Trim trees near house
- Secure or store loose items in yard
- Know how to shut off utilities
- Reinforce garage doors (major failure point)
- Clear gutters and drains

Family planning:

- Evacuation routes identified
- Meeting points if separated
- Contact person outside the impact zone
- Plans for elderly family members, those with disabilities

- Pet evacuation plans (please do not forget your pet!)
- Children know the plan

The timing: Do this during calm weather, not when storms are forecast. Make it routine, like fire drills. Practice your evacuation route. Update your supplies annually.

The cost barrier: Not everyone can afford insurance or extensive supplies. This is where community planning matters - communities can collectively store supplies, share resources, and ensure vulnerable members are covered.

The cultural shift needed: Make hurricane preparation as normal and undramatic as maintaining your vehicle. It's not catastrophizing - it's responsible adulthood in a hurricane zone.

9

Should We Still Invest in Coastal Communities, or Is It Time to Retreat?

The question nobody wants to ask:

If hurricanes are intensifying and sea levels rising, does it make sense to keep rebuilding in the same vulnerable coastal areas? Or should there be planned retreat and relocation?

Why this is so difficult:

Economic reality: In Caribbean nations, the coast is where the economic activity is - ports, tourism, fishing, hotels, restaurants. Retreating from the coast means retreating from livelihoods.

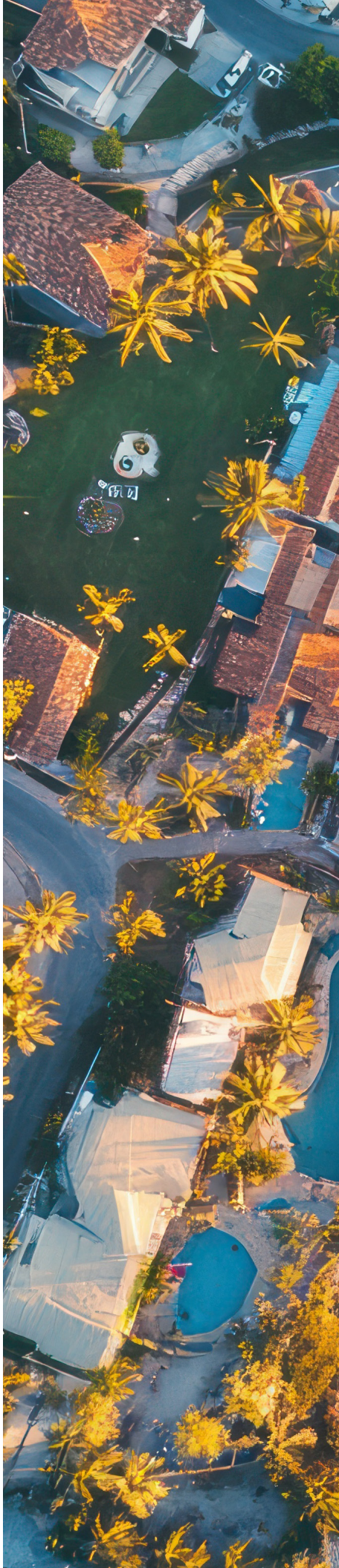
Cultural and ancestral ties: People are not just living on the coast by accident. Families have been there for generations. Churches, cemeteries, community histories are rooted in place. Asking people to move isn't just logistics - it's asking them to abandon identity.

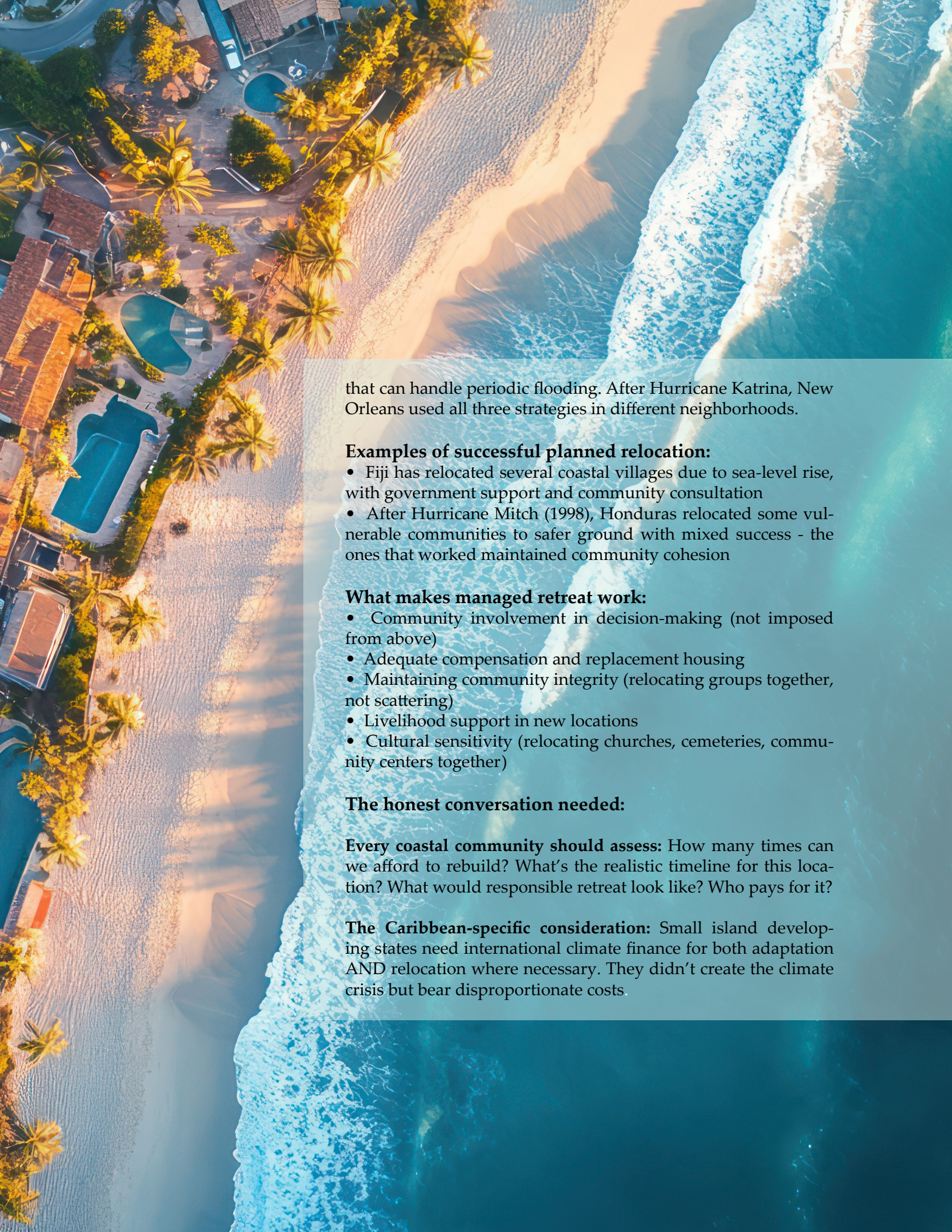
The spectrum of approaches:

Full rebuilding: Some argue that with proper building codes, infrastructure investment, and insurance systems, coastal communities can be made resilient enough to withstand increased storm activity.

Examples: Post-Andrew Miami strengthened building codes dramatically; Netherlands engineered sophisticated coastal defenses.
Strategic retreat: Some communities should relocate entirely, particularly low-lying areas with repeated severe damage. This requires: government land acquisition, replacement housing, livelihood support, community input in planning.

Hybrid approach: Rebuild with higher standards in some areas, retreat from the most vulnerable, create "amphibious" communities





that can handle periodic flooding. After Hurricane Katrina, New Orleans used all three strategies in different neighborhoods.

Examples of successful planned relocation:

- Fiji has relocated several coastal villages due to sea-level rise, with government support and community consultation
- After Hurricane Mitch (1998), Honduras relocated some vulnerable communities to safer ground with mixed success - the ones that worked maintained community cohesion

What makes managed retreat work:

- Community involvement in decision-making (not imposed from above)
- Adequate compensation and replacement housing
- Maintaining community integrity (relocating groups together, not scattering)
- Livelihood support in new locations
- Cultural sensitivity (relocating churches, cemeteries, community centers together)

The honest conversation needed:

Every coastal community should assess: How many times can we afford to rebuild? What's the realistic timeline for this location? What would responsible retreat look like? Who pays for it?

The Caribbean-specific consideration: Small island developing states need international climate finance for both adaptation AND relocation where necessary. They didn't create the climate crisis but bear disproportionate costs.

10

How Do We Talk to Children About Living with Hurricane Risk Without Traumatizing Them?

The psychological tightrope: Children need to understand hurricane risk to be prepared, but not be so afraid they develop anxiety disorders. They need to take it seriously, but not feel helpless.

What doesn't work:
Denial: "Don't worry, nothing will happen" - then when a hurricane hits, children's trust is shattered and they feel betrayed.

Graphic fear-mongering: Showing traumatic images, dwelling on worst-case scenarios, or using hurricanes as discipline ("If you're bad, the hurricane will come") creates pathological anxiety.

Adult anxiety spillover: When parents are visibly panicking or constantly catastrophizing, children absorb that fear without the context to process it.

What works - by age group:

Young children (3-7):

- **Simple, concrete information:** "Sometimes there are big storms with strong wind and lots of rain. We have a plan to keep safe."
- Focus on what adults do to keep them safe, not what could go wrong
- Use stories where characters prepare for and survive storms
- Make preparation activities game-like (not scary drills)
- Maintain routines as much as possible during storm season

School-age children (8-12):

- Age-appropriate explanation of hurricane science (not punishment, not random - meteorology)
- Give them specific preparation jobs (checking flashlights, organizing supplies) - competence builds confidence
- Teach them the family plan step-by-step
- After hurricanes, let them help with age-appropriate recovery work
- Create space to talk about fears, but balance with action steps

Teenagers (13+):
- Full information about risks and preparation
- Involve them seriously in family planning and preparation
- Teach them skills (first aid, basic repairs, emergency communication)

- After events, let them volunteer in community recovery - agency counters helplessness
- Discuss climate change honestly, but emphasize adaptation and action, not doom

After a hurricane - processing trauma:
Normalize reactions: Fear, nightmares, clinginess, regression, anger - all normal after scary events.
Maintain routine: School, regular meals, family activities - predictability helps recovery.
Let them process through play and art: Young children especially process trauma through repetitive play about the event.
Don't force talking, but be available: Some children talk through trauma, others need time. Both are okay.
Watch for signs of serious trauma: Persistent nightmares, inability to function, self-harm, extreme withdrawal - get professional help.
Community processing: Schools and churches can host age-appropriate group sessions where children realize their feelings are shared.

The Japanese model: In earthquake-prone Japan, disaster preparation is integrated into education from early childhood - regular drills, safety instruction, community preparation days. This normalizes preparedness without creating anxiety. Children grow up seeing disaster readiness as responsible adulthood, not paranoia.

Building resilience, not fear: The goal is children who:
- Understand hurricanes are natural events they can prepare for
- Know their family has a plan and they have a role
- Feel capable and competent, not helpless
- Can balance awareness with normal childhood joy
- Trust adults to keep them as safe as possible

The language matters: "We're prepared" not "We're scared." "Here's what we do" not "Here's what might happen to us." "We'll take care of each other" not "We're on our own."