

# “CHURCH BELLS SOUNDING THE ALARM ON THE MOSQUITO COAST”

## Case Study: **Nicaragua**

In September 2007 Hurricane Felix presented the Red Cross climate change projects in Nicaragua with both vindication and their greatest challenge.

Vindication because the projects, throughout their four-year history, have been tightly focused on preparing people for the unexpected; and about one aspect of the hurricane all Nicaraguans were in agreement: it was a total shock.

A new challenge because, although disaster preparedness workshops held up and down the Mosquito Coast undoubtedly saved lives (as is evidenced below), the effort of the Red Cross and others to prepare Nicaraguan society for the impacts of climate change did not include a group more vulnerable even than the long-neglected villages of the Atlantic coast: the seasonal lobster fishermen of

the Cayos Miskitos (the Miskito Keys) and their families, who were decimated by the hurricane as it swept across them early Tuesday morning, 4 September.

Simón McDavis Pablo, a Miskito captain who has spent 30 of his 44 years at sea and may emerge as the greatest unsung hero of Hurricane Felix in Nicaragua, bitterly regrets not being able to save more lives than he did. Anchored in the Maras Keys, just over 40 nautical miles from the mainland, McDavis was hoping to be able to ride out the storm with the 170 people – lobster catchers and their families – who had crammed onto his boat, the *Mrs Julies*, for shelter as the weather deteriorated on Monday evening.

Warned not of a hurricane but only “very strong winds”, he insisted to *El Nuevo Diario* a week later, he realized he would have to weigh anchor and take his chances in open water: Felix was tearing up anything solid and turning trees into airborne battering rams. A five-hour struggle for survival followed that

astonishingly brave decision. “We thought, ‘We’re all going to die here’,” he recalled. “At about three in the morning the wind got stronger still, picking up the boat and rocking it to and fro. As one side fell, I yelled at people to move to the other as ballast.”

“At five I thought we probably had an hour to go. The wind felt like mortar fire, like a landslide, but I told them, ‘We’ve beaten it. Hang on’.”

When the worst of the storm passed, Simón initially thought they’d been carried somewhere else. “Everything had disappeared,” he said. “But then I recognized a wooden beam and we saw it all: bodies floating in the sea, injured people, a community that no longer existed.”

Bitter recrimination followed the disaster in the keys. Some Miskitos accused the government of doing too little to warn people, too little to evacuate them and too little to search for survivors and, ultimately, bodies.

But it seemed harsh to blame the Nicaraguan navy for the disaster: even a first-world navy equipped with enough fast, light patrol craft would have been hard pressed to find and evacuate all the divers and fishermen scattered among the keys in their small boats and *pangas*, in darkness.

The tragedy of the keys was that the lobster and hurricane seasons overlap: some reports said the lobster boats had refused to heed warnings; or that boatmen had been unable to turn for the mainland because divers were submerged.

A Nicaraguan officer leading the last search for bodies a week after Felix said only that the navy had evacuated “a large number of people” on Monday but that “others” had opted to stay put to look after their equipment. He added that many fishermen had been widely dispersed and out of radio contact.

More than a week after Felix, Miskito people were still congregating at the harbour of Puerto Cabezas – the capital of the Región Autónoma del Atlántico Norte, known as “the RAAN” in Nicaragua. They hoped

against hope their relatives might emerge from the keys alive; or that there might be some confirmation of their fate, or perhaps just a body.

### Krukira – a miracle?

The National Hurricane Center (NHC) in Miami placed the eye of Hurricane Felix “about 15 kilometres north-north-east of Puerto Cabezas”, and that, to the kilometre, is where Krukira lies. The Miskito village of some 2,500 souls took the full force of Hurricane Felix’s Category-5 winds – at least 250 kilometres an hour – after it scythed through the Mosquito Keys. Krukira is also one of the places where Red Cross disaster-preparedness workshops have been held as part of the climate change project.

Category-5s fit the popular stereotype of what a “hurricane” is – a massively strong *wind* – better than, for example, Hurricane Mitch in 1998, which made landfall only as a Category-1 but wrought destruction through the flash floods it caused in, above all, Honduras and Nicaragua.

One chilling fact, at the time of writing, makes the 2007 hurricane season exceptional: after Hurricane Dean, Felix was the second Category-5 storm in the region in less than a month, and the NHC said it was the first time two Category-5s had made landfall *in a single season* since record-keeping began in 1886.

Visiting Krukira a few days after Felix, it seemed nothing short of miraculous no one died there and only five people were injured. The village looks as if it has been carpet bombed: its few concrete structures – including a church and a school – lost their roofs and their windows. The villagers’ houses, many of them “*tambos*” on stilts, were either blown to tinder or demolished down to floor level (but, importantly, often not right down to ground level). Trees have been splintered or completely felled. The ground is soaked from rain but there was no flood.

“We’d been listening to the news about the hurricane since ten that morning, and by seven in the evening

it was getting serious,” recalls Junior Wislaw Radis, a teacher at Krukira’s school, now a roofless shell.

“The regional government was broadcasting advice about what to do if the storm reached hurricane strength. “At one in the morning, Puerto Cabezas sent us two buses to evacuate people who wanted to go to town. About 500 people went and 2,000 of us stayed here.

“No one was actually leading – it was really just the news that suggested what we needed to do. But emergency-committee members were warning people who didn’t have radios, and by seven people were taking shelter in the church and the school.

“There are lots of over-sixties in this village and none of them has ever seen anything like this before.”

## “Panic, terror”

Besides hearing from the radio, people in Krukira and other Miskito villages realized the situation was serious when the church bells were rung – the time-honoured way of sounding the alarm on the Mosquito Coast.

Krukira’s relatively imposing Moravian church is certainly the most obvious place to take shelter, but even that didn’t feel entirely safe, according to Pastor Romero Rivera Bayardo. “There were about 200 people here in the church and about a hundred in the parsonage,” he says. “Mostly women, children and the elderly.

“If the peak winds had lasted another hour or so, I really think people would have died of fright. They couldn’t have taken any more. The very walls were shaking. People were lying on the ground. There was panic, terror, and – after the rains came down – cold. Now they need psychological assistance to recover their spirits.

With 500 people evacuated by bus, some 300 sheltering in church buildings and possibly a similar

number in the school and elsewhere, a majority of Krukira’s people sat the hurricane out in (or under) their homes, doing whatever seemed sensible in the circumstances. In the absence of flood, the chief dangers were collapsing structures and flying debris.

“I didn’t come to the church or the school but stayed in my house with my family,” says Junior Wislaw Radis. “When it started to collapse we stayed under the *tambo* with several other families. There were five children in there, all under six – but thank God none of them was injured.”

Both men agree the Red Cross workshops were valuable: the disaster-preparedness sessions, focused on the consequences of extreme weather, will have planted a seed that grew into a glimmer of recognition when Felix began its run in and the wind became seismic. The workshops will have given people a bit more time to think; a little less cause to panic.

“They helped us prepare for an uncertain future, helped us to be willing to take refuge and save ourselves,” says Wislaw.

People evidently did not just panic; young men, for example, went round gathering up elderly people and shepherding them to the church. “The training organised here by the Red Cross helped a lot,” adds Pastor Rivera. “It gave us direction, information, strategies about how to act in a natural disaster – before and after.”

But the lesson of Felix, on this part of the coast at least, seems to be not only that people won’t evacuate – they will if adequately – but that evacuation in very high winds is meaningful only to the extent that transport is available.

## Only one bus

Puerto Cabezas had its own problems that night, as Guillermo Fox, a disaster-prevention official with the town council recalls: “The people honestly weren’t quite sure what was happening. This is the first time

in living memory we’ve been through anything like this. But now, after Felix, they’ve learnt a lot.”

With a total population of some 50,000 potentially needing to be moved to shelters “we faced limitations”, says Fox. “We didn’t have sufficient resources to evacuate everybody so some people arranged their own evacuation.

“I would say about 70 per cent evacuated and 30 per cent stayed put. But there just aren’t sufficient shelters for everyone in the built-up area.”

Another bus made it to Krukira’s neighbouring village, Twapy, which now also looks as if it has been systematically demolished with explosive charges, but is nevertheless just recognizable as a once-idyllic Miskito settlement. The bus made two runs to Puerto Cabezas.

Erlinda Urvina, president of Twapy’s emergency committee, relates essentially the same sequence of events: increasingly worrying radio news stories; people crowding into the concrete communal dining hall; some getting away by bus; then, for the rest, a night of almost paralyzing terror as the hurricane tore through.

“Just before eleven we started ringing the church bell,” she says, “and people came quickly, with their children and their old folk. We said the very young and the very old should be evacuated first, and everyone accepted that.”

Urvina is unsure how many people managed to shelter in the dining hall. On the Miskito Coast, populations are usually enumerated in terms of families rather than individuals. There are 145 families in Twapy.

“I couldn’t count, given everything that was happening, but it couldn’t take everyone and some people had to stay in their homes. I reckon there were about 300 people in there. It was full, completely full.”

Despite Miskito tradition, people in Twapy did not take refuge in the church, fearing its roof and perhaps its steeple would fall in on them, highlighting a

now-urgent need on the Mosquito Coast for buildings to be properly surveyed to determine which should be used as hurricane shelters. Or what people should do if they cannot get into shelters.

Had one of the concrete buildings in either Twapy or Krukira collapsed there would probably have been scores of deaths. Where adequate shelters cannot be built, research should be carried out to compare the safety of concrete structures and traditional *tambos* for people to face the threats of strong winds and floods.

## Radio alert

On one other aspect of the Hurricane Felix story there is widespread agreement: the main means by which news of the storm’s approach was disseminated was on ordinary FM radio.

One such station is Radio Caribe, a partner in the HIER climate-change project with the Dutch organization Freevoice. Director Kenny Lisby Johnson explained that the first forecasts saying Hurricane Felix would hit their part of the coast emerged on Saturday and were broadcast straight away. The red alert came around midnight on Monday.

“After the emergency committee was activated on Monday morning, the authorities started passing by to give official warnings and alerts,” he says. “We were on the air until the hurricane made landfall and hit our antenna, which was almost completely destroyed.”

Lisby believes the warnings paid off: “Many people were evacuated in time or had the common sense to evacuate under their own steam. The training people have received on what to do in disasters has helped.”

Other radio stations, like La Voz Evangélica de la Costa Atlántica, were in direct touch with the NHC in Miami. “Our antenna fell some time between four and five in the morning,” says director Salvador Sarmiento Alvarado. “But the roof is mostly intact.”

Francisco Osejo, a Red Cross volunteer and a technical assistant on the climate project based in Puerto Cabezas, spent much of the week immediately after Felix helping to ferry casualties from the airport and seaport to medical facilities in the town. In terms of community response, he saw one clear improvement over Hurricane Beta two years ago: the neighbourhood committees where the project has been working asked for proper data sheets they could use to provide information on damage and losses.

According to Osejo: “It’s very important that people know what climate change is and what they can do to meet the threat. It affects everyone at different levels,” he says.

“Despite the extensive damage, the human casualties have been minimal in the areas where we’re working.”

## The hurricane signal

All unprecedented disasters expose new areas of vulnerability.

What Hurricane Felix seems to have established in Nicaragua is that it is not enough just to prepare for storm surges and floods. Strategies have to be developed for coping with catastrophically high winds (the Netherlands-financed shelter in Betania collapsed because it was built on stilts, on high ground, with floods in mind) and for situations where evacuation is not possible.

In many Miskito villages in the RAAN, people stayed in or under their homes because there was nothing to evacuate in and nowhere to evacuate to – or the buildings thought safe were full.

Mauricio Rosales, director general of meteorology at the Instituto Nicaragüense de Estudios Territoriales (Ineter), says there’s been “an increase in the number of seasonal Caribbean hurricanes” – citing the record-breaking 2005 season – “but we’re

also getting more Category-4 and -5 storms in the region”. This as opposed to Hurricane Stan, for example, a relatively weak Category-1 that was actually embedded in a system of rainstorms that deluged the Central American isthmus in 2005 causing flooding and mudslides and up to 2,000 deaths.

Just before Hurricane Felix bore down on the Atlantic coast earlier this year, Ramon Arnesto Sosa, head of Nicaragua’s main disaster-prevention agency, told reporters in Managua that some 50,000 people were particularly at risk because, of necessity, they lived “beside rivers or on hillsides or small islands”. But he cannot have been sure whether the greatest danger was from wind or flood or both.

*Up In Smoke, Latin America and the Caribbean*, the third (2006) report from the working group on climate change and development in the United Kingdom, points out that Central American governments are less centralized than Cuba’s – often regarded as a model of compulsory evacuation in the face of hurricane threats – and “the risks faced are more varied and widespread, the populations larger and more dispersed. Corruption is also a problem.”

“There can be a lack of political will in national governments for reducing risks to the poorest,” the report adds. But (and the evidence of the Red Cross climate change programme surely bears this out in the case of Nicaragua) “willingness to improve preparedness often exists, particularly at local level”.

## Drought

Asked bluntly what he thinks the evidence for climate change in Nicaragua is, Mauricio Rosales’s answer is shifting agricultural seasons. “The main thing,” he explains, “is that in all parts of the country where they sow crops, the sowing season has changed.

“The air temperature is rising, and the difference between the minimum temperature and the maximum temperature is narrowing.”

Francisco Osejo also draws attention to the drought areas. “It’s affecting the north especially,” he says, “the area around the town of Ocotol, Estelí, Nueva Segovia, parts of Chinandega and León. In the last few years the drought has got worse and people have lost a lot of crops and that’s giving rise to nutritional problems too.”

A new Netherlands Red Cross-backed programme is getting underway in the north-east now.

Scientists at Ineter believe the most significant fall in annual precipitation might come in the already dry north-west. Rainfall in the central and southern Pacific region could fall from a maximum of 1,800mm per year to just 1,000mm – significantly increasing the total drought-affected area.

But the best data Ineter has shows the climate in parts of Nicaragua, at least, was already drying out, so climate change can only exacerbate this.

The bad news for the Miskito people is that the “dry” area actually snakes east, out from the broiling north-west to encompass many of their isolated and vulnerable settlements strung along the 800-kilometre River Coco that serves as the border with Honduras.

In May, journalist Annie Kelly of the *Guardian* reported from San Carlos – a river settlement deep in the Central American interior – that almost a month into the rainy season, when it would normally be “a swirling torrent”, the river was “ankle-deep and dugout boats struggle to negotiate their way upstream”.

In the village of Siksayari, home to 1,400 Miskito people, a volunteer technician from the Nicaraguan agriculture ministry said people had been without basic supplies like salt and drinking water for more than a month. “There are no roads,” he said.

“Nobody expected the river to dry up and now supply boats can’t get down here. At the moment the water is too polluted and diseases like cholera and tuberculosis are rising.”

## Fatalism

The Atlantic region of Honduras and Nicaragua is remote and inaccessible, hundreds of miles from the two countries’ capitals, on inadequate and not entirely safe roads, through jungle and mountain areas. It has long been below the radar of central governments in Managua and Tegucigalpa.

Nicaragua was originally chosen to pioneer the Red Cross climate-change project because of its geographical position, its poverty, and above all because of the acute vulnerability of its fragile coastal and riverside populations.

This was in keeping with the very good Red Cross idea that if better disaster preparedness in response to climate-change impacts can be put in place there, then it can be done anywhere.

When Cony Silva Martinez, a psychologist by profession, began work as the Managua-based coordinator of the project, she knew the Nicaraguan Red Cross in the field would need to meet the challenge of what she calls the “religiously-based fatalism” of all rural Central Americans.

“But on the Atlantic coast at least,” Silva adds, “where the danger comes from hurricanes, people are beginning to see that the disasters they need to worry about aren’t entirely natural.”

Cony Silva began working with the Red Cross as a psychologist in the immediate aftermath of Hurricane Mitch, helping people rebuild their lives. She is acutely aware of the importance of the psychological element in awareness-raising – crucial to the climate-change programmes on the Atlantic coast.

Despite the tragedy of the Miskito Keys, where people who missed a certain deadline to evacuate probably sealed their fate, the provisional conclusion after Hurricane Felix must be that it has highlighted the Miskitos’ will to survive in their isolated territories.

“Our Nicaraguan colleagues are telling us we must try to reach younger people with disaster preparedness messages,” says Esther Barend, the Guatemala-based coordinator of the Netherlands Red Cross climate projects in Central America, who arrived in Managua the day before Felix struck.

But, after Felix, which messages? “The original vulnerability assessments we carried out suggested people were most afraid of floods,” says Barend. “But Felix was a Category-5 wind, and on the coast at least there weren’t many floods.”

The reality now is that there might actually be a conflict between flood preparedness and high-wind preparedness. “The last place you want to be in a Category-5 hurricane is on high ground in a raised building,” Barend adds. “Felix has thrown down a major challenge to this project, but it’s one we’re determined to meet.”

Damage by Hurricane Felix in Krukira, Nicaragua. Virtually everything built of wood collapsed. The few buildings left intact were concrete. Photo: Alex Wynter/International Federation of Red Cross and Red Crescent Societies

