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NSW INDEPENDENT FLOOD INQUIRY
GPO Box 5341, Sydney, NSW, 2001
inquiry@floodinquiry.nsw.gov.au

Dear Professor O’Kane and Mr Fuller

I write this as a former Northern Rivers resident of twenty years with some knowledge of the Richmond River catchment and the challenges of settlement in this environment over the last two centuries.

I left the area seven years ago, partly due to health issues with the ubiquitous moulds and partly due to safety issues in a region where mobile reception is unreliable and roads are dangerous at the best of times and because frequent storms can be life-threatening and hazardous to both people and property. I survived several storm and flood events myself in that time, experiences I do not wish to repeat.

Many of my friends and former associates suffered terribly in the recent flood and landslide events, some with the added grief of mourning for those who died as well as loss of homes, pets, livestock, goods & chattels, business, jobs, wildlife and gardens.

THE RICHMOND RIVER CATCHMENT

The catchment is bounded by hills and mountains to the north and west with many creeks feeding into a large floodplain - a thousand square kilometres – running to the swampy coastal plain and the river mouth at Ballina.

Prior to European settlement, the local indigenous people had knowledge of flood events and at least one memorable destructive tsunami, many hundreds of years ago.

They were not consulted when Europeans came to cut cedar and then cleared the Big Scrub and rainforests for farming, bringing camphor laurels and lantana, among other changes to the country.

The loss of forest cover increased erosion, silting up the previously navigable rivers to Lismore and Casino and the floodplains downstream of those settlements.

The loss of forest ecosystems reduced the water holding capacity of many parts of the upper catchments, leading to lower water tables in drier drought periods and more severe flood events when rains were abundant.

Camphor laurels and lantana encroached into the rainforests, drying soils and increasing bushfire hazards, so that forests which never burnt were decimated in the 2019-2020 fire events and suffered major landslides in this La Ninia rain event.

Then the 2017 Pacific Highway upgrade effectively built a dam where river floods once ran out to sea, preventing flood waters from running except along the river path down to Ballina.

Unwittingly, 150 years of ignorant European settlement decisions have accumulated to create a perfect storm for these terrible flood events to unfold.

At best, we can learn from these mistakes and begin to repair the damage to the catchment so that it can again provide resources, food, and healthy habitats for humans and wildlife, buffeted from weather extremes by robust vegetation and water management systems.

CATCHMENT RECOVERY

Upper Catchments

The aim of upper catchment restoration is to slow rain water flow downstream by holding the moisture in the soil and vegetation. The resulting higher groundwater table is also effective to reduce fire risks in dry times.

To do this properly will involve several decades of dedicated landcare in the upper catchments to increase their water-holding capacity: revegetation with native plantings, phasing out of weed trees and vegetation, rebuilding and adjusting roads and causeways to withstand extreme rainfall events, and building leaky weirs and bunds to hold water back from gushing into floods downstream.

Larger permanent dam structures generally do little to reduce flooding as they are filled by preceding rain and there is a risk of them overtopping or bursting, adding to downstream woes. For flood mitigation purposes, smaller dams and weirs are more effective and less prone to catastrophic failure.

Upstream 'leaky weirs' that can hold water back without disrupting normal flow levels do work, but the northern rivers systems would need a lot of them to make any real difference to the towns and villages by the waterways. They would mitigate smaller floods, but in an extended wet season such as this, they would be almost full before a large or extended rainfall event, even if they still reduced the flow speed of the water.

Swales with tree plantings on the floodplains upstream of towns and villages might, over time, mitigate water flow speed, but would simply be another debris hazard if flooded before vegetation reached maturity.

Floodplain

It is hard to imagine the big scrub and tea-tree forests, open grasslands with mobs of emus, wallaby and kangaroos and fertile wetlands that once covered this floodplain. Coastal emus are now extinct and cattle graze where macropods once roamed.

Sugar cane grows on former wetlands and swamps were drained for farming, grazing and riverside township settlements, notably Casino, Coraki, Lismore and Ballina.

There are several aspects to consider to effectively mitigate flood impacts here.

River Restoration

The Richmond River has suffered immensely since European settlement. The silt and pollution have killed off the fish and other riparian creatures that once thrived there. The river is no longer navigable for boats bigger than a tinnie.

Flood waters must be enabled to reach the sea. This flood event has demonstrated that blocking that egress across the delta is catastrophic. The first thing that must happen is to restore the outflows to the sea that were dammed by the ill-conceived Pacific Highway upgrade.

There has been much talk of dredging. Dredging removes silt, but only until the waterways silt up again. It is at best an emergency measure to be used sparingly. Restoring the upper catchments permanently reduces the amount of silt in flood waters, but that will take at least a decade to have a significant effect.

Levees break. Bigger better levees also break. Not one levee in the region was able to stop these floods from inundating settlements. Since they are already there, repair them but they will fail again, and building bigger ones will only invite future disaster.

Some have suggested channels to divert flood waters from tributaries onto higher parts of the floodplain to reduce the speed and height of floods. There is some merit in this and the floodplain may benefit from building or restoring wetlands to slow flood waters and reduce the polluted silt that damages flooded agricultural lands. Renewing wetlands also enhances groundwater capacity to sustain vegetation and crops in dry times.

HUMAN RECOVERY

The immediate need is medium term housing and trauma recovery. Too many people are still basically homeless as winter approaches. Displacement and insecure housing compound trauma causing other health issues. A safe and secure abode and a sense of hope are the first medicines on the path to healing. People need both choices and processes to find their way to a new (or rebuilt) home, as soon as possible.

In addition to the temporary pods etc being set up by State Government, can landholders on larger urban and smaller rural allotments be encouraged to build granny flats or tiny homes for low-income tenancy and/or host folk living in vans, buses and portable buildings on their properties? (State and Council development rules could be relaxed for this purpose as long as health and safety standards are met.)

EMERGENCY SYSTEMS

It is vital to restore lost faith in our government run emergency and recovery systems.

Communications

Both telephone and internet systems failed in this event: power failures, multiple towers affected by landslides and underground cables damaged everywhere.

A national dedicated emergency satellite system is needed to cover such contingencies until normal systems can be repaired. (Federal responsibility?)

First Responders

Much as we love our SES, RFS and other first responders, they are all under-resourced for catastrophic events, primarily a State government responsibility.

Several thousand civilian heroes courageously filled much of the breach this time, rescuing thousands, but our official emergency services must be adequately funded and resourced. Improving systems to co-ordinate and support civilian assistance in such crises could save many lives in future extreme events, as clearly seen in this one.

Rural Roads and Access

Landslides wrought havoc in the hinterland with roads, bridges, causeways and homes swept away, some communities totally cut off, accessible only by helicopter. Flying foxes and makeshift repairs in many places enable movement of food, fuel, medicines and supplies, but other farms and communities may face six to twelve months without road access. Extra funds and resources are needed to restore access in the affected upper catchment areas (Lismore, Kyogle, Byron and Tweed LGAs).

RESETTLEMENT

Settlement in the direct path of floods must be reconsidered. The danger to human life and the damage to infrastructure outweigh the economic benefits of continuing to live and work in the flood zones. Further development should be banned and voluntary buyback schemes must enable people to move to higher ground. This is a complex and difficult matter that will need a range of solutions over the next decade or so.

Some areas, such as most of South Lismore, are too flood-prone (and contaminated with fuel, oil, gas, asbestos etc) for rebuilding of homes and most business uses (even with contaminant remediation). Landholders will need some kind of compensation scheme for voluntary Council/State government resumption of these properties.

Some homeowners will be able to return to their homes, either immediately or once repairs are completed. Others may not have the resources to rebuild. Some may need to 'camp' on their land for a time (with or without caravans and other removable structures) until they are able to recover their finances to rebuild or move on. (Thank you Lismore Council for permitting this.)

As with businesses, a pro-active plan is needed to compensate their losses and enable them to rebuild or relocate as needed.

FUTURE FLOODPRONE BUILDING STANDARDS

Properties below the current flood level may need adaption, starting with retrofitting some kind of inbuilt roof opening so people are not trapped in their ceilings and a functional ladder to the ceiling manhole to enable safer access.

Any new buildings in the extended flood zone will need stronger foundations to withstand major flooding events.

FUTURE LAND USES

If Council/State government resumes severely flooded properties, then decontamination will be needed: bioremediation and revegetation of some areas, space for another flood levee or bunds to slow water flow, if that would help, eventually: playing fields, event centres, sale yards, agistment, gardens, wetlands, fair weather camping grounds?

RECYCLING BUILDING MATERIALS

Instead of bulldozing all the remains of condemned or resumed buildings, they should be assessed for potential to recycle hardwood frames, flooring and roofing tin and maybe windows and doors. Anything that can be rescued should be as Covid has severely impacted building supplies and timber for rebuilding is hard to get. There is scope here for employment for some who have lost work.

BUSINESS AND SERVICES

Much of the Lismore CBD needs to be moved out of the flood zone. Lismore Council sensibly did so some years ago and, at the time, encouraged CBD businesses to do likewise. Vested interests held sway.

Although some buildings constructed after the 1840-1870 floods have proven to be designed to withstand such events (solid brick, hardwood, high pressed metal ceilings etc), many need waterproofing and more robust refurbishment. Some later buildings may also be suitable for waterproofing and robust refurbishment, while others may never recover from the damage to foundations and the persistence of mould.

Given that many public buildings (civic hall, library, churches, gallery etc) are found in the CBD, perhaps it can be retained as a cultural precinct while essential commercial business and services relocate so that banking, essential supplies and government agencies can operate without disruption in any future flood events.

If there is Council or Crown land available in suitable locations for retail, office and light industrial precincts, government assistance would enable businesses to rebuild in those areas (by purchase, exchange with condemned lands or long term lease). Initially, some businesses may be able to reopen in their current location ... until the next flood and insurance issues force them away. Many will not be able to do so. A pro-active relocation plan is needed, spanning at least a decade.

Other factors in other LGAs also need attention. In Byron LGA, blocked drains caused unnecessary flooding in several towns. Most of the drainage infrastructure is old (build in the 1950s to 70s) and needs replacement beyond Council capacity to effect.

In conclusion, whatever decisions are taken, a significant economic outlay will be needed for quite some time. However, the situation presents an opportunity for renewal with a healthier more flood-proof catchment, strong communities and a vibrant city.