The New South Wales Flood Inquiry 2022: an appraisal

Chas Keys

Former Deputy Director General,
NSW State Emergency Service

As a country frequently and seriously affected by floods, Australia has seen many studies aimed at informing the management of flooding. Land use is perhaps the most critical issue at stake in the management of our floodplains.

Scores of studies have been undertaken over more than a century and a half, mostly in Queensland and New South Wales, which share about 80% of the national flood problem in terms of the dollar damage floods incur. In the Hunter Valley alone, between 1860 and 1914, 10 flood studies were commissioned by colonial and state governments to recommend measures that could reduce the harmful consequences of flooding on community interests.

The recommendations made by these and other studies have not always been taken up. Much advice has been ignored or implemented only at the margins. This outcome may largely be a result of the extreme costliness of mitigating the effects of floods. Flooding is a hazard that defies easy management and governments tend to look favourably on developmental initiatives without noting their downsides until after the severity of the associated costs has become apparent. Government involvement in levee building in NSW, for example, was limited until the 1950s and regulation to restrict housing on floodplains was largely absent before the 1970s.

The report of the NSW Flood Inquiry, the latest substantial flood study to be undertaken in Australia, was released in August 2022. It was commissioned after extreme flooding in NSW in Lismore and other Richmond River Valley communities in the state's north-east, together with repeated severe floods on the Hawkesbury-Nepean river system on Sydney's north-western fringe in 2021 and 2022.

The study, conducted by Mary O'Kane (former NSW Chief Scientist and Engineer) and Mick Fuller (retired Police Commissioner) had a very broad remit. It ranged more widely over the traditional emergency management elements of prevention, preparedness, response and recovery than previous flood studies had done. It investigated agency responses to the floods and made many recommendations about how flood problems should be managed at the agency level in the future. It found deficiencies in the performances of the State Emergency Service (SES) (the flood combat agency) and Resilience NSW, which had been charged with overseeing post-flood recovery. Recommendations were made to restructure the SES and to sharpen its future responses. The lack of planning for floods by the SES was highlighted along with a deficient regional structure. Resilience NSW, it was suggested, should be 'reshaped' into a new agency.

The inquiry's report holds out considerable promise, but it also disappoints in some respects. Pleasingly, the inquiry recognised the necessity of attacking the problems of flooding at their sources, which lie in the ways in which we use floodplains. Recommendations were made about buybacks and land swaps for people whose houses are subject to flooding: these are means of tackling the 'legacy' problems that have mounted over decades. The inquiry also recommended a explicitly risk-based approach to determining how future development on floodplains should proceed: this will reduce the reliance on statistical measures like the 1% Annual Exceedance Probability (AEP) standard that has dominated land-use decision-making in recent times.

It is abundantly clear that there has been (and still is) too much residential development on floodplains in NSW. We have not been sufficiently cognisant of how economically and socially unsustainable much of this development has been. Whole suburbs in Sydney's north-west have been, and still are being, built on land that will be little

affected by 'routine', frequently occurring floods but that will be hit disastrously by infrequent, but nevertheless inevitable, extreme floods. These will inundate the higher parts of the floodplains along the Hawkesbury River and the tributary South and Eastern creeks.

Less central than land use, but significant and also to be welcomed, is the recommendation that informal and 'unofficial' (that is, non-agency) response activity generated from within communities during floods should be facilitated. The recent example of Lismore's 'tinny army' showed what has always been known: people helping each other in dangerous times is necessary and can make a substantial contribution (including by saving lives). The provision of this help must be made as safe as possible, however, and the inquiry recommended training and resourcing to facilitate such assistance and ensure safety in its provision.

The recommendation that disaster (including flood) education be incorporated in school curricula is also welcome. People often fail to recognise that they live on a floodplain and, thus, do not understand the risk they are exposed to.

A number of the disappointing aspects of the report result from the extreme haste with which it was compiled. Little more than 4 months was allocated from the commissioning of the study to its completion, which allowed insufficient time to do the job justice. The result is that much detail remains to be filled in, for example, on how any buybacks and land swaps will be managed. What should be the eligibility criteria? How should risk-based assessments for future residential development be conducted?

There are many thousands of dwellings in NSW whose floor levels are below the levels reached by 1% AEP floods. This is the standard level above which residential floors of dwellings built today must be set (with a small freeboard). But much of our housing stock predates the era in which this standard has applied. In the Hawkesbury-Nepean, there are at least 5,000 dwellings whose floor levels are below assessed 1% AEP levels, and many more whose floors are above these levels but well within reach of extreme floods. The same problem applies on all the state's rivers, but the issue is most pressing in the valleys of the rivers that flow to the Tasman Sea.

Unfortunately, the report was unable to provide an answer to one of the biggest flood management questions currently facing the NSW Government – whether or not a raised Warragamba Dam would be appropriate as a measure to mitigate floods in the valley of the Hawkesbury-Nepean River. This important matter remains unresolved.

The report recommends that NSW Police be given an expanded role in the real-time management of floods. Police are vital in the conduct of many tasks that must be conducted in flood times, but their culture is one of law enforcement rather than the management of civil emergencies. It is doubtful that they can exercise better than the established, experienced combat agencies the leadership needed during emergencies.

Perplexingly, the inquiry struggled to come to grips with climate change in relation to flood frequency and severity. It calls for further research on the relationship; no bad thing in itself, but it seeks a verdict based on the legal principle of 'beyond reasonable doubt' rather than on 'the balance of probabilities'. The fact is that science has largely resolved the issue. It understands well that in a warmer world the atmosphere can hold more moisture to be triggered as rain when the appropriate weather drivers (such as fronts and east-coast low-pressure systems) appear. Thus, a warming atmosphere creates the preconditions for an intensification of existing flood problems. If more rain falls in a given period, the volume of floodwater produced will be increased, flood peaks will be higher and the problems created will be exacerbated. Likewise it is well established that sea levels are rising, with obvious consequences for coastal and estuarine storm surge flooding, erosion and the drainage of rivers.

The politics of floodplain management are difficult and Australia's history of policy diffidence in dealing with the consequences of flooding reflects this fact. The NSW Government has welcomed the recommendations of the inquiry, but we are still some way from knowing how far it will be prepared to go in actioning them. Given the politics involved, we should not be surprised if the response to the inquiry is marked by caution and a reluctance to go as far in accepting its recommendations as might be hoped. Nevertheless, the potential is there for the report to make a real and beneficial difference as far as the management of the flood problems of NSW is concerned.

The problems to be addressed are, of course, huge in terms of financial cost and they cannot be fully overcome. It is impossible to conceive of all residential properties on floodplains being removed and floodplains being sterilised from residential uses up to the level of the Probable Maximum Flood. Long-standing towns and suburbs would have to be abandoned if these outcomes were to be sought. Given this, the real question is how far government can go. Any move towards addressing the worst of the problem of past developmental mistakes on floodplains should be welcomed, as should more stringent restrictions on future floodplain development. But the lessons from the history of government responses to flood studies should caution us as far as expectations are concerned.

