Supplementary Submission No 88a

INQUIRY INTO ADEQUACY OF WATER STORAGES IN NSW

Name: Mr John Ibbotson

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SUPPLEMENTARY Submission to the Standing Committee on State Development Adequacy of Water Storage in NSW
24th April 2013
Inquiry into adequacy of water storages in NSW

By John Ibbotson

0. Personal Ramblings:

(The spoken version maybe slightly different!)

Good Morning!

Thank you for giving me the opportunity to come and talk to you and answer questions about the adequacy of the storage and the efficient use of water in NSW.

My original and supplementary submissions highlight some of the plan's shortcomings; they include comments on the lower lake barrages, (the whales in the fishpond), as well as additional comments on storing water, environmental watering, and a dam on the Clarence River.
I hope that my submissions and comments will be of some value to you.

I was born in Finley before the Mulwala Canal was finished. It was a dry dusty backwater of a place. The three pubs were always packed because the beer was supposedly cheaper than the water tanked up from Tocumwal. With irrigation Finley changed into a little town with a future.

But something is happening to the town. Many houses are for sale. Jobs are scarce. The future looks bleak. And it is not just because of the 10 year drought. Droughts come and go; the farmers knew they could recover during the next wet. Unfortunately they see the water from the future wet seasons being taken from them.

Stolen water is not the only problem. "Expenses for no return" are also rising. The government buys out the water rights from random farmers. Those farmers no longer pay for the irrigation infrastructure so their contributions are added to the costs borne by the remaining farmers. And these costs have to be paid even when they receive no water. They don't see a future for themselves or their families. The pubs are, once again, doing a roaring business, but this time for people with no hope as well as no water.

Water shouldn't be a problem; after the Amazon we have more water per head of population than any other country and it's 100 times more than places like England. And yet we want to convert sewerage into bottled water, build humungous desalination plants and take water from our most productive farmers. We have to learn how to efficiently capture, store and use it.

We live in a country, in fact a world, with our leaders wanting to send us back in time. In my local paper I describe our council "As a group who are driving us into the future while looking in the rear vision mirror." Today there are many in authority that start out with ideals but lose them; they get carried away by their own importance.

I used to enter photographic competitions in Alaska. Often the worst photo, judged from any aspect, would win. We asked one judge why this happened and he replied:

"Well if I picked the best one, or the one everybody liked I would lose my mystique as a judge and just be one of the pack. I'd lose my importance, the respect I'm given as a judge, and that is not acceptable".

His comment forever changed my way at looking at peoples' motives. Nor have I ever entered another competition.

But this doesn't explain why I have such an interest in what is happening in the MDB, apart from being born there. Returning to Australia after 20 years overseas I took on a project to photograph every lighthouse in Australia. The end result was two books that are now considered the reference books on the subject.

While doing this I realised that solar is great for small applications but not for 24/7 power. This led me to look at the global warming debacle, which resulted in me writing the first sceptical AGW (anthropogenic global warming) book published in Australia. It also revealed why the environmentalists are a negative influence on our prosperity and our on way of life.

When I reviewed the original MDB draft, it became clear that the green-environmentalists were having a dominant influence on the plan. The final plan is no better. This has been shown by the anti-people bias that is evident in it. It is another disaster in the making.

So why is this plan so important to the MDB's future? With a good plan communities will have a sound foundation on which to prosper. With a bad plan they will die. As it stands it is a bad plan. It will reduce the allocation of water that is communities' lifeblood; it creates uncertainty as to whether there will even be enough water for them during the good years! People have become subservient to the needs of the trees.

Country communities are already battling new labour laws, increasing costs, the lack of services and the inability to offer young people a future. The new water rules could be the last straw.

Even now community after community are slowly, but surely, withering. The current MDB Plan will only exacerbate this process. A forest without artificial watering will rejuvenate. Once a county community has gone, it will never come back.

Thankyou.

SUPPLEMENTARY Submission to the Standing Committee on State Development Adequacy of Water Storage in NSW 24th April 2013

Inquiry into adequacy of water storages in NSW

By John Ibbotson

1. Introduction:

This submission contains:

Relevant information that can be read in conjunction with my original submissions which were:

An Open Letter to the MDBA – Is the Tail Wagging the Dog?
Saving the Murray Darling – Open the Lower Murray Barrages
Saving the Murray Darling – Looking Outside the Square
Saving the Murray Darling- Environmental Farming
Supplying Water to the Murray Darling Basin (A presentation to Griffith Council)

This (mostly) new information is:

A selective overview of the 2012 MDB Plan and why it needs to be reviewed

Three specific visions, which are essential to providing a sound foundation for ensuring that the outcomes proposed in the MDB Plan, are working directly towards maximising the amount of water in the basin, and its equitable distribution between the environment and communities. They are:

The Lower Lakes and the Murray Mouth
Storing Water
Environmental Watering

The Clarence – A New Direction Trying to provide a solution to how the Clarence River valley, which has too much water, can be made a safer and more productive area

2. The 2012 MDBA Plan:

Although this might appear to be off-subject it is important to ensure that all parties are heading in the same direction. This covers the landscape, which the Murray Darling Basin Plan is supposed to fix, for the future of the basin and its people. It has done the opposite. It has failed. The nicest thing that can be said about the document is that it is a biased, unrealistic list of demands, which are anti-people. Let me explain:

2.1 Back to Basics:

In any organisation the prime organisational hierarchy is as follows:

2.1.2 Mission Statement:

This defines the fundamental purpose of an organization, which succinctly describes why it exists. They don't tend to Change.

2.1.3 The MDBA Mission Statement:

The Murray–Darling Basin Authority's principal aim is to manage the Basin's **water resources** in the **national interest**. There are two problems with this statement:

Water resources: *These can not be managed independently of the basins other resources and needs.*

National Interest: (A broad term for any matter of public concern that is addressed by a government in law or policy.) *It may be used to contribute to achieving the mission but it is not appropriate in the mission statement.*

2.1.4 A better Mission Statement for the MDBA:

The Murray–Darling Basin Authority's principal aim is to **manage** the Basin's **resources, particularly water**, in the most **efficient** manner, and to achieve a balance between **human** and **environmental** requirements.

2.1.5 Vision Statements:

These define what an organisation will do meet to achieve the organisations mission and contains defined goals to be accomplished usually by a set date. There will be many Vision Statements over time.

2.1.6 The MDBA Vision Statements:

Implementing the Basin Plan – key points (2013) is the only one I've found.

Now that the Basin Plan is law, work has started on its implementation. Working closely with the Basin states will be a critical component of this work.
In recognition of this, we have written to Basin ministers to outline our collaborative approach to implementing the Basin Plan. In summary, we have undertaken to continue with:

- a no surprises approach–communicate what we are doing
- localism–communities have input to water resource management
- innovation–finding creative ways to tackle challenges
- cost effectiveness–finding the efficient way to do business.

There is still a lot of work to be done under the plan and **there are a number of pieces of work that need to be completed this year** within relatively tight timeframes.

So far so good

These include the following:

Environmental watering
One of our immediate tasks is to develop annual **environmental** watering priorities. These will set priorities to guide **environmental** water holders in the coming year.
Developing this first set of priorities will help us identify the best way of working with the states and local communities in future planning. They need to be identified by June 2013.
Work is also starting on the Basin-wide **Environmental** Watering Strategy. This will focus on the size, timing and nature of flows, to maximise benefits for the **environment** in the long term.

Sustainable Diversion Limits Adjustment Mechanism
The Basin Plan provides an opportunity to **improve the environmental, social and economic outcomes**. The states will progressively develop, up to 2016, works and measures proposals to achieve better outcomes for the **environment or reduce social and economic impacts**. The Authority will be responsible for developing a robust mechanism to assess the proposals and calculate any final adjustment.

Constraints Management Strategy
The Authority will work with states and landholders to come up with options to address **constraints** in the system to see whether we can achieve better outcomes with **environmental** water delivery. **Constraints in this sense are any barriers that limit us getting particular volumes of water to the environment, floodplains and wetlands.**

Water quality and salinity management
The Plan sets water quality targets to ensure the Basin's water is suitable for drinking, irrigation and recreational uses and maintaining aquatic ecosystems. The Authority will work with Basin states to ensure **the immediate obligations under the Plan, such as flow/salinity targets are implemented.** We must publish our first assessment of salt export after 30 June 2013.

Further priorities for 2013:
Advancing the northern Basin work program, including research and community input into aspects of the Plan's implementation in the Northern basin (which is??)

Reviewing **groundwater sustainable diversion limits** and baseline diversion limits in three aquifers in NSW and Victoria

Working closely **with states and irrigation infrastructure operators to develop detailed guidelines to accompany the new water trading rules**

Throughout this process, we will continue to work with individuals and groups through our advisory committees, as well as holding discussions with community leaders. Some of our existing partnerships include the Basin Community Committee, the Northern Basin Advisory Committee, the Advisory Committee on Social, Economic and Environmental Sciences, the Murray Darling Rivers Indigenous Nations and the Northern Basin Aboriginal Nations, as well as many individuals, councils and groups across the Basin.

2.1.7 Comments on Implementing the Basin Plan – key points (2013):

This vision effectively says:

"**How to get more water for the environment**", while the **community activities are**

"**How to achieve better outcomes for the environment or reduce social and economic impacts**", which could be interpreted as how communities need to work out how to survive and prosper on less, not only less water but the benefits and wealth it provides.

2.1.8 (Strategic) Plans and Reporting:

These contain the detail of how the goals outlined in the Vision Statements will be achieved.

In the MDB Plan it would appear that there are also an environmental biases in the plan. In the four documents making up the MDB Plan 12-2012 edition, it was interesting to determine that the words:

Environmen.... occurred 1693 times and
Communit…. occurred 107 times.

Although the ratio 15.8:1, is in itself not a precise way of determining the bias of the documents it is probably indicative of a bias.

In Attachment C, "*Guidelines for the method to determine priorities for applying environmental water*",

it referred to "Avoiding critical loss of species… and maintain the viability of threatened species. I wonder if people were actually included amongst the species in these statements?

There was no corresponding attachment directed towards maintaining the viability of the irrigators.

Finally there is the **reporting** phase which provides feedback to the owners (that's us) as to how the organisation is performing and what it has achieved against its stated goals and is not addressed in this document.

3. MDB Visions – a different viewpoint:

I will now go through the three visions defined earlier, which must be addressed if the MDBA is to achieve its mission.

The Lower Lakes and the Murray mouth
Storing water
Environmental Watering

Each of these has been covered in more detail in the three submissions I made to the MDBA.

I will start with the barrages on the Lower Murray.
They are the whale in the fish pond. And interestingly they are only vaguely covered (on purpose?) in the MDBA Plan.

3.1 The Lower Lakes and the Murray Mouth:

This section contains information based on my submission to the DBMA, called "Saving the Murray Darling – Open the Lower Barrages"; a letter to the MDBA "… the Tail Wagging the Dog" as well as new information.

Every river in Australia that flows into the sea at sea level, which is most of them, has an estuary. Sometimes these estuaries are remnants of the old river bed; sometimes they are lakes, inlets, harbours or bays. An estuary will continue inland until the elevation of the river is higher than the highest tide.

And there are no rivers in Australia that have a sufficient year round flow to keep the sea out. For example the Clarence River, which has probably the most stable rainfall in Australia and an annual outflow to the sea of 4-5,000 gigalitres, still has an estuary that extends for 108km up the "river".

Left to its own devices the Murray would be estuarine at times for 250kms from the ocean. Trying to keep Lakes Alexandrina and Albert fresh is a King Canute moment. The lakes are nominally 1,000sqkms and are 3m deep. If the net evaporation rate from the lakes is 1m/annum, then it takes 1,000GL just to maintain the level of the lakes, although the Hon R.H. Colless on 16/11/12 used a figure of 1,500, which could be much closer due to the Darling having a precipitation/evaporation ratio of 300/2,250mm. Then if you want to keep the mouth of the river open using fresh water, it would take every drop of water that falls in the Basin.

3.1.1 Schedule 5 states that the water levels in the Lower Lakes:

"..are to be kept above 0.4 metres AHD for 95% of the time and above 0.0 metres AHD at all times to help maintain flows to the Coorong, (*as the lakes are closed off from the Coorong, except for flows from Goolwa for keeping the mouth open, how does this help maintain Coorong flows?)* prevent acidification, prevent acid drainage and prevent riverbank collapse below Lock 1" and that:
"The mouth of the River Murray is open without the need for dredging in at least 95% of years, with flows every year through the Murray Mouth Barrages".

So where would this water come from? In over 50% of the last 110 years there was not enough inflow into storages, which can hold 22,214Gl, to refill them. And in 6 of the 11 decades the shortfall occurred in five consecutive years.

The Murray Darling is a large catchment and the upper Murray and Murrumbidgee snow fed, so most years it can fill Lakes Alexandrina and Albert with freshwater. On average over the 42 years from 1968 to 2010, 5,920 gigalitres a year of freshwater has flowed over Lock 1. How this fits in with SA's requirement of 1,850GL /year is difficult to understand. Of course averages are to some extent meaningless in a system that is so variable and subject to low rainfall years and droughts. Allowing for 1,000GL for evaporation and 500 for other uses that would leave 4,500GL to keep the mouth of the river open.

And how much water is needed to keep the mouth of the Murray open? In 1917, when the river mouth was open and there were no barrages it was estimated by Johnston that 16.9GL moved though the mouth with each tidal cycle or 33.8GL/day 12,340GL/year.

In 2009 Mike Young & Ken Jury determined that "*if the mouth settles down at only 200 metres width and 5 metres depth, and it flows at 5km/hour; that's 5 Gigalitres per hour, 20 Gigalitres for our available 4 tidal hours and then it does that twice daily. This results in over 30 Gigalitres/day, with this figure having been previously quoted as the required flow rate to keep the mouth open.*"

That is about 11,000Gl per year, which is half the basin's total storage, provided the dams refilled every year, which they don't! Let alone being able to transport that amount of water down the rivers.

The solution is simple. Make the Murray's entrance into Lake Alexandrina the mouth of the Murray and allow the lakes to become estuarine as they have always been (except when the sea has been completely closed off from the lakes). Historically this has always been the mouth of the Murray irrespective of what some scientists have been told to say. We don't talk about the Sydney Heads as the mouth of the Parramatta, or the Port Philip Rip being the mouth of the Yarra, although in earlier times they would have been. And keep in mind that estuaries are far more productive than fresh water lakes.

The most environmentally sensible, quickest and cheapest project would be to "end" the Murray would be to build a weir between Wellington and Pomana Island on the NE arm of Lake Alexandrina. This would be a structure whose height was just above the high tide level of the lake and excess river water would flow over it into the lake.

Even under the MDB Plan the lakes will not be fresh and the Coorong will be saltier than sea water.

The North Coorong Lagoon is to be < 50gm/l.
The South Coorong Lagoon is to be < 100gm/l.
For comparison sea water is about 35gm/l.

For more accurate readings electrical conductivity (EC) meters are used that give readings, in micro Siemens per cm (µS/cm). For Lake Alexandrina the salinity is to have an EC of < 1000 µS/cm 95% of the time and < 1500 µS/cm 100% of the time. By comparison drinking water should be < 100 µS/cm and water for salt sensitive crops < 700 µS/cm. Sea water by comparison water is about 54,000 µS/cm.

Keeping the sea water out of the lakes is also difficult because the barrages are not water tight and salt water can leak into the lakes through them as well as through the sand islands. And because the main barrages use stop-logs (planks placed in grooves) the water passing over the stop-logs is fresh, as fresh water floats on top of the heavier sea water. This can and does result in salt levels building up in the lakes.

But the South Australian's would object. We need the water for Adelaide, but it already comes out from higher up the river. What about the lakeside farmers? Apparently the number of irrigators below Lock 1 is diminishing, and they could be supplied with piped or channelled water from upstream. And for those who have lakeside properties, such as those on Hindmarsh Island could have their foreshore adapted for the new, lower, levels that the re-estuarine change would deliver. And they would never have to be concerned about their lakes drying up. "Every" river mouth-seaside development in Australia is estuarine and they seem to be happy with the arrangement. As for the environment; estuaries are overall more productive, with a larger variety of life than fresh water lakes. And as for Ramsar they would not be concerned with the changes as long as the principles and objectives of Ramsar continued to be adhered too. It would also allow more water to be directed to other Ramsar sites. It appears that the political climate in SA may be starting to change their attitude towards making the lakes estuarine again.

It is time to open the barrages and end the river, with a weir at Wellington.

3.2 Storing Water:

This section contains information based on my submission to the DBMA, called "Saving the Murray Darling – Looking outside the Square; a letter to the MDBA "is the Tail Wagging the Dog" as well as new information.

Bringing water in from outside the MDB is already being done with the diversion of the Snowy River and water from Victorian rivers. Additional water could be obtained for the northern reaches of the Basin by pumping water over the ranges from rivers such as the Clarence in northern NSW. Capturing water from the monsoonal areas of Queensland could also be considered.

3.2.1 The Clarence River:

In the Looking Outside the Square submission it's focus was supplying water from outside the basin, specifically from the Clarence River. It involved a much simpler development than those put forward by Sir Earle Page (1945), Rankin Hill Consulting (1981) and Professor Lance Endersbee (1997). It was a single dam at the head of the Clarence Gorge, just downstream from the confluence of the Clarence and the Mann Rivers. From there water could be pumped 70km up over the range (to a height of 1,000m) to the Severn River. This could be achieved with a single pump station but an intermediate "in-line" pump could be necessary. For each 2.0m diameter pipe, 500ML could be pumped daily. With 2 pipes (1GL/day), it would only take about 10% of the Clarence's flow.

Unfortunately the resistance from the Clarence Valley makes this project politically impossible.

Building additional water storages throughout the Murray Darling Basin is essential for the long term health of the basin. With the "Drought and flooding rain" cycle, more consideration needs to be given to be given to the philosophy of "catch it when it falls, so it can be used when it doesn't". There are many ways of levelling out the water availability and many of these have been covered by other people.

The only one I would like to comment upon is the adoption of the overall principle to "Slow the Flows". This could be achieved by building of small weirs, where possible along the basin's rivers. This would be similar to what has already been done on the Murray. Each weir, (for example at Wilcannia), could build up a head 5 - 10m. This does not sound much but it would delay the river drying up as rapidly as it currently does. This would mean that when catchment rain does fall it could still have an existing water base or damp river bed to flow down. Building permeable dams (check dams) and having well vegetated banks along even the smallest waterways (to slow the flow), would also help.

3.3 Environmental Watering:

The sensible allocation and use of the river water:

Most of the river water should be used for activities **which require water at specific times**. These include: Communities and industry; irrigated farming and specific environmental areas (eg nesting ponds during the breeding season). This also means that the environmental areas need to be watered using irrigation methods, so as to obtain the best results from the least amount of water. Other areas should be left to survive on the rainfall they receive and major flooding, as they have for millennia.

3.3.1 Environmental Watering the MDBA Way:

The following from the *Constraints and River Management* fact sheet shows just out of touch with reality the MDBA is:
"*Other works could include altering existing infrastructure, such as increasing the size of the outlet on a dam. This could be complemented by flood mitigation strategies or easements downstream to allow a higher release rate from the dam. A higher allowable release rate would enable environmental watering to create overbank flows needed for floodplain health and improve the environmental outcomes that the Basin Plan could achieve*."

Putting it another way: After increasing the size of dam outlets, raising bridges and building up river banks along the way, to stop some of the unwanted flooding, huge amounts of water from the dams could be released so that over the bank flooding can occur somewhere downstream. The engineering is mind boggling and the water use inefficiency is obscene. Not only that, but the Murray couldn't handle the expected flows, particularly through the Barmah Choke. To solve that problem incorporate water from the Goulburn, which meets the Murray further downstream.

This could be equated to a couple of kids filling up their bath with tank water until it overflowed, so that they could mop the bathroom floor for their mum.

3.3.2 Environmental Farming:

Definition: Environmental Farming (E-Farming) for the MDB is where the management of the environmental areas is carried out using, as a guideline, the watering processes and procedures followed by irrigation farmers.

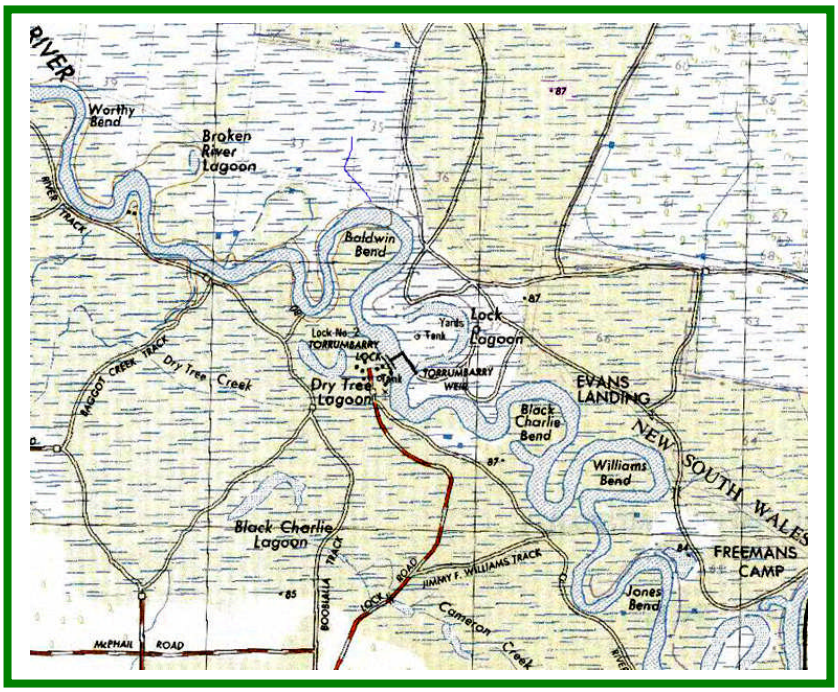
Environmental water management needs to change so that it effectively mirrors irrigated farming. Instead of over the bank flooding, which wastes water, pump it then pipe it, or channel it to stressed or high value areas when needed. The river doesn't have to be full for that to occur and it can be done when the water will be most beneficial to the environment. It may also require additional environmental weirs (as distinct from irrigation weirs) to be built on the rivers.

Divide the environmental area into areas of high and low importance and nourish them accordingly. Build small levees, where practicable around significant areas to keep those areas wet, for longer, with less water. For example this would be beneficial for bird breeding areas. Construct "farm" dams that can be filled with river water as needed for the sustenance of the wildlife. Even build vermin proof fences to protect the wild life

(something is being done with great success, by groups such as the Australian Wildlife Conservancy). Sounds like an irrigated farm or like a home owner when there are water restrictions, the important plants are the ones that get the water, and the bird bath is kept full.

The main benefits would be: Water could be supplied to the environment, when it is needed and for as long as it is needed; it could be achieved with less water than using the natural method and the health and long term viability of the environmental areas would be improved.

3.3.3 The Torrumbarry environmental watering project.



Work is already underway at Torrumbarry Weir, an $80,000,000(?) project down- stream from Echuca to water the nearby forest.

When built the primary objective of Torrumbarry Weir was to maintain a stable upstream pool level to allow gravity diversion of water for irrigation.

Using this existing facility is a sensible approach to environmental watering than other over-the-bank proposals.

Levees have been built around the forest to contain the water. Water can only be released when the weir is full (86.05m AHD). It can be seen from the topographical map that the 80m contour ends at the Baldwin Bend (and possibly again upstream at Jones Bend), so theoretically the residual water should be able to go back into the river at that point or further down stream. I don't have figures for how much and how often watering will be done.

So is this a brilliant, a necessary, an unnecessary or a negative project?

Before the weir was built the river level was at 80m AHD, and has banks that are 5m+/- high while the surrounding land is higher, up to 87m AHD. Hence the only time the forest could have been naturally watered was during major floods, when the river level was high enough to go over the banks. It would not have happened during the latest 10 year drought. Our forests have evolved to survive in this kind of climate and possibly it could be detrimental to over-water them. Yes, they may die off in severe droughts but as we have seen over the last few years they also recover. It is also rather bizarre that the only way this environmental watering can be done is from water stored for irrigation purposes and being accessed from a weir built for irrigation.

So is this a brilliant, a necessary, an unnecessary or a negative project? Your Choice!

Now let us look to see if giving priority to environmental watering projects is wise, smart and beneficial for Australia over the long term, or should food production be our number one consideration. As we have closed down our manufacturing industries, we have started importing economical, high quality products, from screwdrivers to cars, from Asia, particularly China and India. On balance this is considered acceptable.

3.4.1 Food Quality:

We are in the process of reducing our food production, driving up its costs often due to government charges and regulations, as well an emphasis being placed on unrealistic environmental demands (like no new dams). We are already importing food from Asia, particularly China and India. But does it meet Australian health and sanitation standards? Will we end up sending the quality food that we produce overseas to people who demand high quality, while importing food of dubious quality for our own families? Is that what we want to do?

Coming to you from your local store or restaurant – just don't let the kids eat the rice!

US rice imports 'contain harmful levels of lead'

"If you look through the scientific literature, especially on India and China, they irrigate their crops with raw sewage effluent and untreated industrial effluent,..."

Dr Tongesayi.. By Jason Palmer BBC science reporter, New Orleans
Analysis of commercially available rice imported into the US has revealed it contains levels of lead far higher than regulations suggest are safe. Some samples exceeded the "provisional total tolerable intake" (PTTI) set by the US Food and Drug Administration (FDA) by a factor of 120.

The researchers found the highest levels of lead in rice from China and Taiwan
The report at the American Chemical Society Meeting adds to the already well-known issue of arsenic in rice. The FDA told the BBC it would review the research.
Lead is known to be harmful to many organs and the central nervous system.
It is a particular risk for young children, who suffer significant developmental problems if exposed to elevated lead levels.
Because rice is grown in heavily irrigated conditions, it is more susceptible than other staple crops to environmental pollutants in irrigation water.

Recent studies have highlighted the presence of arsenic in rice - prompting consumption advice from the UK's Food Standards Agency and more recently from the FDA.
However, other heavy metals represent a risk as well.
Dr Tsanangurayi Tongesayi of Monmouth University in New Jersey, US, and his team have tested a number of imported brands of rice bought from local shops.

The US imports about 7% of its rice, and the team sampled packaged rice from Bhutan, Italy, China, Taiwan, India, Israel, the Czech Republic and Thailand - which accounts for 65% of US imports.
"When we compared them, we realised that the daily exposure levels are much higher than those PTTIs," said Dr Tongesayi. "According to the FDA, they have to be more than 10 times the PTTI levels (to cause a health concern), and our values were two to 12 times higher than those 10 times," he told BBC News.

'Globalised market'
"So we can only conclude that they can potentially cause harmful effects."
That factor of 120 (12 times higher than 10 times the PTTI) alluded to by Dr Tongesayi is for Asian children, who are most susceptible by virtue of age and comparatively high rice intake on average.
For non-Asian adults the excesses above the PTTI ranged from 20 to 40.

Rice from China and Taiwan had the highest lead levels, but Dr Tongesayi stressed that all of the samples significantly exceeded the PTTIs.

Rice is grown all over the world, feeding billions
Dr Tongesayi has also worked on quantifying arsenic contamination - and is in effect working his way through the heavy metals one by one to determine their prevalence.

The problem, he said, is the range of agricultural practices around the world.
"If you look through the scientific literature, especially on India and China, they irrigate their crops with raw sewage effluent and untreated industrial effluent," he explained.

"Research has been done in those countries, and concerns have been raised because of those practices, but it's still ongoing."
Dr Tongesayi also said that the increasing practice of sending electronic waste to developing countries - and the pollution it leads to - exacerbates the problem.

"With a globalised food market, we eat food from every corner of the world, but pollution conditions are... different from region to region, agricultural practices are different from region to region, but we ignore that.
"Maybe we need international regulations that will govern. So far, such international oversight exists informally in the form of the Codex Alimentarius, a collection of food-safety standards first set out by the United Nations.

FDA spokesman Noah Bartolucci told BBC News that the "FDA plans to review the new research on lead levels in imported rice released today". "As part of an ongoing and proactive effort to monitor and address contaminants in food traded internationally, FDA chairs an international working group to review current international standards for lead in selected commodities, including rice, and to revise, if necessary, maximum lead levels under the... Codex Alimentarius," he said.

Does it really make sense to purposely set out to reduce our ability to grow rice?
(and we are already importing Asian rice!)

Anyone for a ham sandwich, bacon and eggs or a pork chop?

Flood of dead pigs, trickle of answers in China

By DIDI TANG Associated PressAssociated PressPosted: 03/20/2013 03:05:09 AM PDT

BEIJING—The pig carcasses— about 14,000 of them—have been floating down rivers that feed into Shanghai for nearly two weeks. The city's residents have been told not to worry, and not much else.

Where the pigs came from, how they died and why they suddenly showed up in the river system that supplies drinking water to a city of 23 million has not been explained. Officials have told residents their drinking water is safe, while authorities have censored microblog posts suggesting that the public organize peaceful protests.

The official response reminds many of the government silence that surrounded previous health concerns, from the SARS epidemic to bird flu to contaminated milk.

"They are only giving the runaround," said Huang Beibei, a Shanghai microblogger whose revolting photographs of the pigs first prompted local media coverage and government attention.

As toll reaches 7,545, dead pigs show dark side of China food industry!

15-03-13: The number of dead pigs found in a Shanghai river that provides drinking water to the Chinese financial hub has risen to 7,545, after local authorities retrieved 944 more pigs Thursday.

The Shanghai municipal government has repeatedly assured the city's 23 million residents that tap water remains safe.

Shanghai locals, however, remain worried about water contamination from the swollen and rotting carcasses in the river. A surge in pig dumping has followed police campaigns against the sale of pork products made from diseased pigs.

Dead pigs show dark side of China food industry

Thousands of dead pigs in a Shanghai river have cast a spotlight on China's poorly regulated farm production, with the country's favourite meat joining a long list of food scares. As of Friday, the number of carcasses recovered in recent days from the Huangpu river -- which cuts through the commercial hub and supplies over 20 percent of its drinking water -- had reached 7,545. The city has stepped up inspections of markets to stop meat from the dead animals from reaching dining tables of its 23 million people.

From recycled cooking oil to dangerous chemicals in baby milk powder, a series of food scandals in China has caused huge public concern. Images of Shanghai's dead pigs have hit the nation's collective gut, but in Zhulin village, a major hog-raising centre in Jiaxing, the farmers claim their innocence in the scandal. "The government is very strict. We give our pigs vaccinations. If they are sick, they can't be sold," said Pan Juying, 57, as she hoisted two baskets of freshly cut grass to feed her eight pigs. But a bloated piglet lying by the roadside a hundred metres away from a stream showed that not all dead animals are properly disposed of.

Despite laws against the practice, animals that die from disease in China can end up in the food supply chain or improperly disposed of. In Wenling, also in Zhejiang, authorities announced this week that 46 people had been jailed for up to six-and-a-half years for processing and selling pork from more than 1,000 diseased pigs.

China was rocked in 2008 when the industrial chemical melamine was found to have been illegally added to dairy products, killing at least six babies and making 300,000 people ill.

Across China, cheap recycled cooking oil is available made illegally from leftovers scooped out of restaurant drains. Amid public disgust authorities arrested more than 30 people over its sale, but it remains commonplace. In another recent incident, US fast food giant KFC was hit by controversy after revealing some Chinese suppliers provided chicken with high levels of antibiotics, in what appeared to be an industry-wide practice.

Zhu Yi, a professor at China Agricultural University, said that the country's vast number of small-scale farmers were "hard to supervise and regulate". "Food safety is an issue that requires continuous efforts, you simply cannot put everything right once and for all," she said. "The current livestock breeding model is too crude, and standards too low."

Is this where we want our meat, salad vegetables and fruit to come from?

4. The Clarence River – A New Direction:

The Clarence is an interesting river catchment. It is abut 250km long and 90km wide (total catchment area 22,700sq KM) It's like a long trough surrounded by hills and mountains, with just one exit and that is through the Clarence Gorge.

Whatever rain falls, it travels down to the base of the trough (and into the Mann and the Clarence Rivers) in a hurry. And when it rains it, rains. In the month from 22-01-13 through 21-02-13 I had 670mm (26") in my back yard, and parts of the valley had twice that. My total so far this year is 1,050mm. During this period we had 3 floods.
The first was the biggest and it was reported that at Grafton they had a couple of days with 1,500GL/day going through (that's about 1/3 of the usual annual throughput each day). The figure was not a typo as the reports did state that this was 3x the volume of Sydney Harbour I also believe it. Just upstream at Copmanhurst, just before the flood plain opens up, some houses that were 25m above the river were literally washed away. The floods play havoc with life in the valley.

Based on the work I had done on the Clarence River it became obvious that there was still a need for a dam at the Gorge. This would be used for flood mitigation/minimisation, tourism and possibly some hydro power generation. The dam would create two lakes, each about 40km long; one up the Clarence and one up the Mann.
As a tourist attraction it would effectively be the only large fresh water lake along the NSW coast. And it is surprising how many people actually prefer a fresh water vacation to a salt water one.

The valley is in the economic doldrums. The wages are only about half the NSW average; there is a 17% youth unemployment rate; looking ahead there are no obvious large scale business opportunities; the percentage of young people and families in the valley are dropping. In the last 5 years there have been 5 floods which have caused significant short and long term economic and social problems for the valley. Again, unfortunately the Council will not even enter into a dialog on the merits of the dam. Nor are they even prepared to hold a community survey to determine what the 50,000 residents want.

I even went to the extent of buying a four page advertisement "A Dam on the Clarence River" in the local paper (expensive!) to at least get the plan widely distributed. It was a worthwhile investment as I did get a lot of feedback. This included a lot of possible problems, which I believe I answered successfully.

The only roadblock to evaluating this project is the local council who just say NO.
They even refuse to do a survey of the 50,000 people in the valley to see what they want.

What makes this so hypocritical is that that have just re-established their Climate Change Committee.
One of its main functions will be "how to handle the 2100, 90cm sea level rise".
If that sea level rise did occur, the current levee system would not be able to handle any floods.

The following is a 7 page A4 version of my 4 page advertisement "A Dam on the Clarence River".
At least the information will be available for future reference.

There are longer Rivers in Australia, (The Murray 2,375km; the Murrumbidgee 1,485km; the Darling 1,472km and the Lachlan 1,339km), but the Clarence River and its estuary, at 394km, is Australia's longest coastal river. It is also a river that seldom if ever, dries up. Not only does it have a large, well drenched catchment area, which delivers around 5,000 gigalitres a year, but the rainfall is unusually consistent. This is because of its location. It receives tropical rain from the north during the summer and some winter rains from the south. And because of its wide coastal plain it catches the rain that roars in from the sea.

Another factor that keeps the valley verdant is its annual rainfall/evaporation rate. Its rainfall of 800-1,200mm is more than the evaporation rate of 750-1,000mm. Compare this to the Darling River Basin where the rainfall is 200-300mm and the evaporation rate is 2,250mm. No wonder inland Australia can go from floods to blinding dust in just a few months.

Three streams, the Maryland River, the Boonoo Boonoo River and the Koreelah Creek, with headwaters at 1,100m at the Border Ranges watershed, which is also the Qld-NSW border, come together at Rivertown to form the Clarence River. From there to the sea there are "30" rivers and creeks that flow into the Clarence including four major tributaries, the Nymboida-Mann, the Coldstream, Timbarra (Rocky) and Orara Rivers. At Rivertown, which is only 240m above sea level, the water has finished its rapid descent from the mountain tops, so the Clarence, with a few exceptions, has an overall gentle gradient down to its mouth, which is just upstream from Copmanhurst. At Copmanhurst?

During the last ice age 10-20,000 years ago when the sea level was 100m lower than today, the river mouth would have reached the sea out of sight of the current Yamba shoreline. But now from Copmanhurst to Yamba it is no longer a river but an estuary that is controlled, except while battling floods, by the moods of the ocean. From a geological and environmental perspective this last 108km is not part of the river but belongs to the sea, no matter what we want to call it. It is a fact we (the posted fishing limits are for marine species) and the sea life living in it recognise, although from a local perspective we tend to ignore this fact and call it the Mighty Clarence, river implied.

L: The Clarence River from the Carnham Bridge. Paddling back upstream would be difficult!

R: The Mann River from the Cangai Bridge. Not for the novice canoeist/kayaker.

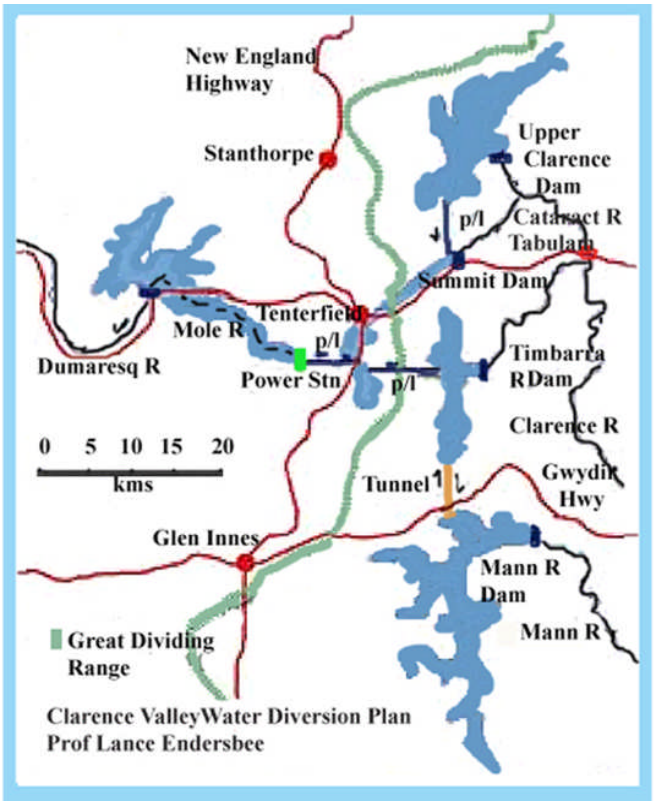
The Floods:

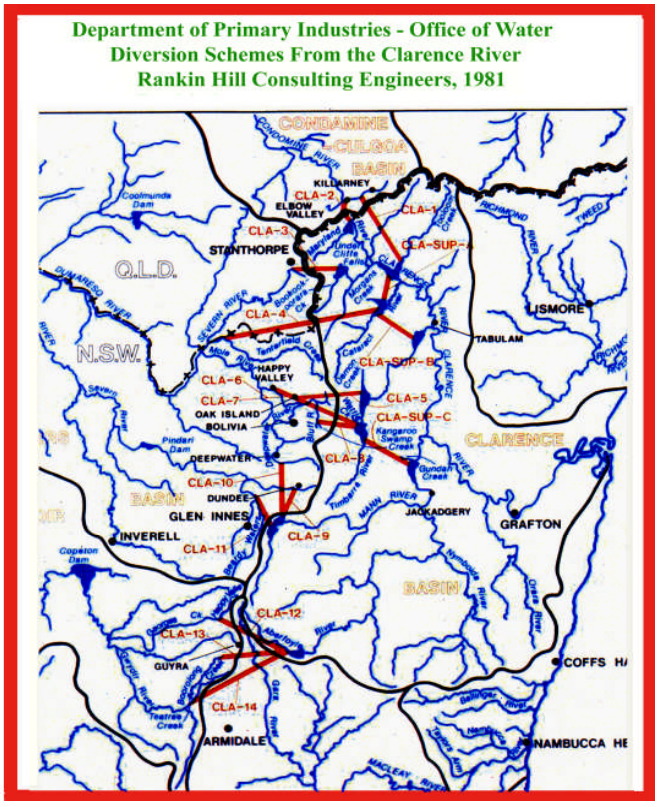
I have lived here for five years and we are currently experiencing the fourth flood during that period. It would seem that there would be more of an interest in doing something about it. I do realise I'm a newcomer, which is defined as "any out-of-valley arrival living in the valley, who hasn't been buried yet", so my opinions are of dubious value.

Some people have suggested that new levees be built or the heights of existing ones increased. This is not an overall practical solution as it would just divert more water and more flooding downstream. Apart from that it seems to be a case of cross one's fingers and hope. From this outsiders point of view the best solution to reduce the flooding is to build a dam. Build a dam!

There have been dam proposals before. Professor Lance Endersbee, the designer of the Snowy Mountains Scheme, came up with a mini-Snowy ("when you're on a good thing stick to it"). It had five dams connected by tunnels and pipelines, which swallowed up the wild mountain tributaries. (It seemed that Professor Endersbee mistook the size of the Clarence, basing it on the size of the estuary in Grafton! "So there is a lot of rainfall there and it all flows out into the sea, and if you have been to Grafton, you know how wide the Clarence River is at Grafton. It's a big "river.""). Then there was the Rankin Hill 1981 plan with nine dams, mostly high up in the ranges with a spider web of tunnels and pipelines connecting the dams. It looked like a maxi-Snowy scheme. No wonder they were rejected.

Cangai Bridge on the Mann River. A barrier for river runners, and for passing caravans. The bridge was destroyed in the Jan-2013 Flood.





Professor Lance Endersbee's design for dams on the Clarence. It looks like a mini-Snowy Mountains Scheme, with five dams connected by tunnels and pipelines.

In 1981 Rankin Hill, an engineering company, came up with a maxi- Snowy Mountains scheme with nine dams, and a spider web of tunnels and pipelines.

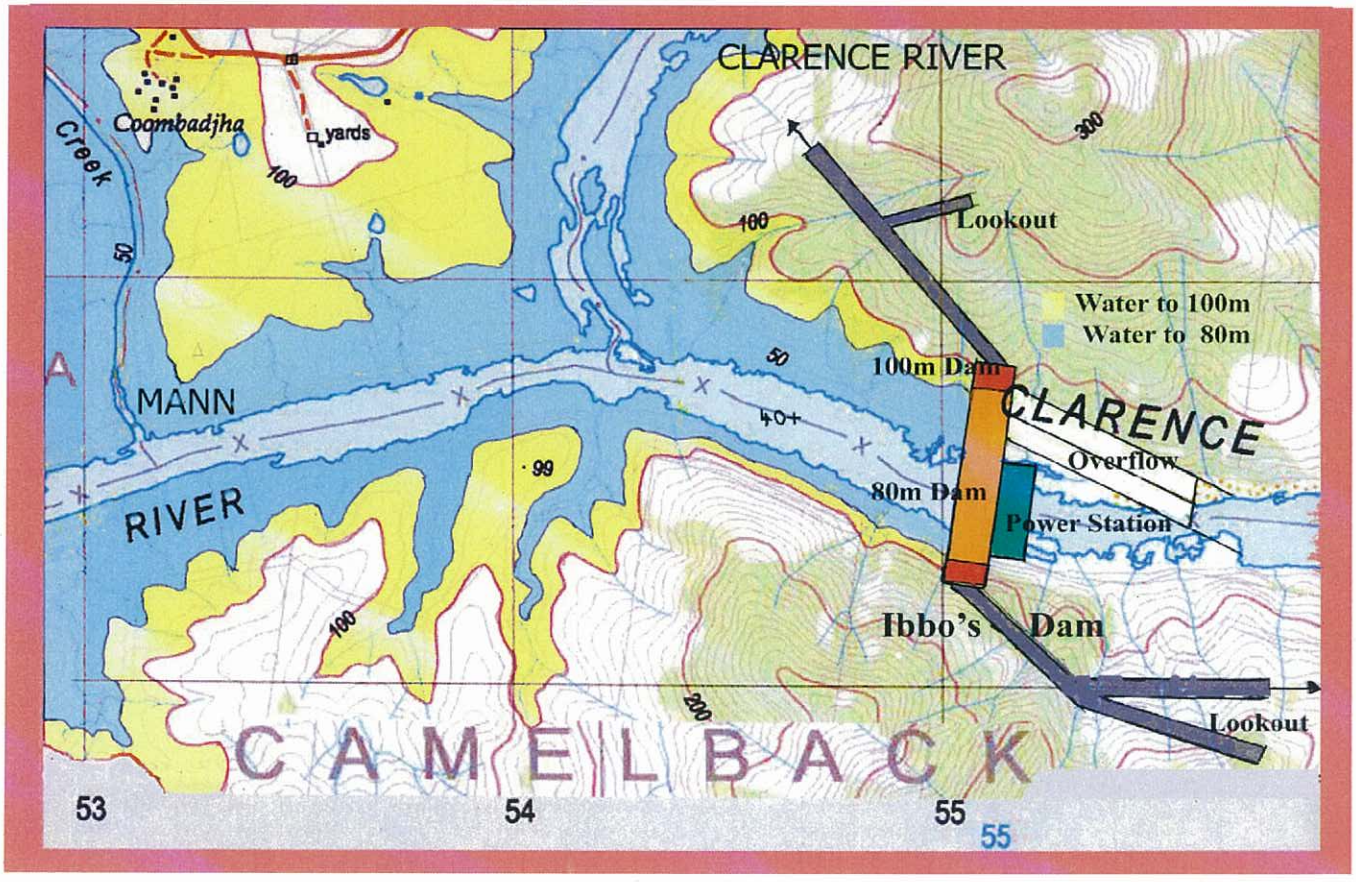
Firstly let me clear up one point: In a letter by (DE 18/9/12), she quoted that at an inquiry into adequacy of the state's water storage… "It was not possible to build a dam on the Clarence River or its tributaries, as it has been shown that it would be both uneconomic and would have significant environmental impact as a consequence." As I felt this might not be completely correct I followed it up with the Department of Primary Industry and received an extensive reply from David Harriss Commissioner, NSW Office of Water.

was correct in what she heard but it was not the whole story. Mr Harriss indicated that the comment related to piping water to the Murray Darling Basin but "The NSW Government does not have a policy of no further dams on the Clarence River… provided that the benefits outweighed the cost."
Keeping this in mind:

Proposal:

My Proposal would be to build a dam on the Clarence, just down stream (about 1km) from its junction with the Mann River and only 30km from the start of the estuary. The dam would back up waters in both rivers for about 40km but would not affect the wild tributaries. It would be a single dam with no tunnels and no pipelines.

A lake level to the 80m contour would have the least impact on the local infrastructure. This is because the river has fairly steep banks to contain the width of the lake. It would look more like the Clarence estuary. A lake to the 100m contour would affect more of the infrastructure, and would spread further but would provide significantly better flood minimisation for exceptional flood events. It is recommended that the dam wall be built to the 100m contour but only used above the 80m mark in emergency situations. The dam would need to be designed to be able to quickly release a lot of water to low levels. It would also need to able to flow over the top of the dam, and over the power station, during exceptional downpours. It would probably need to be a concrete structure. The nominal level of the lake could be maintained at (say) the 60m contour (but higher at the end of autumn) because there is no need to have a large storage in the Clarence Valley to cover drought periods.



Ibbo's Dam is a single dam, at the upstream end of The Gorge, just after the junction of the Mann and Clarence Rivers and about 30-40km from the start of the estuary. The nominal maximum water level would be at the 80m contour but it should allow for water to the 100m contour for emergency flood minimisation downstream. As the valleys are quite flat the lake would extend 40km+ up each of the rivers. A more extensive view is shown on the next page.

Economic Benefits:

There are four main factors where the financial benefits would be sufficient to justify the building of this dam. These are; flood minimisation; economic returns, increased tourism and power generation. There would also be environmental benefits although there would be varied views on this one.

Flood Minimisation:

If flooding rains were predicted the level of the dam could be dropped. This could mitigate most flooding, but maybe not all. Also during flood periods water could be released to reach Yamba at low tide, or conversely held back from high (king) tides. If the new water was less than expected it would not matter that the dam was low, because it would soon fill again. And domestic water is not a problem because the Shannon Dam is now our main source.

Economic Returns:

With each flood the valley grinds to halt and large, unexpected expenses are incurred. Roads are closed and need expensive repairs. Ditto for bridges. Yamba, losing its only access road for one, let alone four days is unacceptable. It becomes a major isolated community causing havoc with its tourist industry as well as the commuters. Homes and businesses in Grafton, Ulmarra, Cowper, Brushgrove, Lawrence, Maclean and other communities are flooded or cut off causing extensive and expensive damage. Schools are closed. Farmers wonder what the effect will be on their harvest. People with scheduled out of town medical procedures or other appointments are out of luck. Manufacturing and fishing come to a halt. Having the major N-S highway closed for days is absurd. Chaos too for Brooms Head campers whether they were coming or going. No Newspapers or mail! (And in this flood Gulmarrad, at least has been without the Internet for four days). The council is forced to divert funds and staff to the clean up and repair the damage. Funds that could have been used elsewhere. In addition to the above examples there are many more. Some of these are the SES and helicopter costs; phone and power infrastructure, garbage build up and health concerns; fewer fish and prawns would be washed out to sea; infrastructure built to allow water access, which is essential for an expanding

tourist industry, would suffer less damage. Even the economic impact of shutting down the largest communities for just a few days would cover the cost of a dam. And then there is the "negative" exposure that would make visitors or prospective new residents, think twice before coming to the Clarence.

Having control over flooding would provide significant economic benefits and less disruption for the lower valley, with savings more than covering the cost of the dam and its associated infrastructure. It could even lead to lower flood insurance premiums; a necessity when insurance companies want to raise premiums 1010% … like having another mortgage (Daily Examiner 5-2-13)!

As with any project building for the future there is a down side. This is for the folk who live and work above the dam but below the 100m contour. These people would have to be recompensed for any losses they may incur and for the rebuilding of their lives further up the hill. This could include assistance to become leaders in the development of the tourist facilities along the lake.

Tourism:

Tourism in the Clarence Valley is currently lopsided. More people spend more time along the seashore at Iluka, Yamba and Brooms Head than inland at Maclean (does anybody actually vacation in Maclean?), Ulmarra and Grafton. Having a lake on the Clarence would even out the tourist numbers, providing sufficient infrastructure was built.

A lot of the river above the Gorge is fast flowing, rocky and mostly inaccessible. Taking a canoe from Coombadjha to Grafton or from Nymboida to Copmanhurst (as Graham Mackie suggests) is not a trivial exercise, except for very experienced river travellers. It also needs to have appropriate portage trails around difficult areas. Maybe the adrenalin rush river experiences would be better left to the mountain tributaries. Also to get an influx of tourists would require more than just campsites.

A dam would provide a lake that would be pleasant for all kinds of tourists, the young, elderly, families and foreign visitors. Resorts could be developed with lodges, houseboats providing facilities for water skiers, all levels of canoeists and kayakers, small yachts, bird watchers and fresh water fishermen. Farmers would have the opportunity to diversify into tourism. Towns like Copmanhurst would grow significantly. It would open up so much more of the valley to visitors and locals as well – I estimate that 90% plus of valley residents have never dipped a cup of water from the river and even less have swum in it.

But people prefer the beach! It is surprising how many like fresh water. When they built the Ross River Dam 20km from Townsville they thought that its use by tourists would be minimal. Now more go to the dam than to Magnetic Island. It would better spread the tourist destination opportunities between Yamba and Grafton and encourage visitors to stay longer away from the coast, a real plus for the valley. More visitors along the lake shore would warrant better roads than the "farm roads" that currently exist. And being able to easily travel further upstream would open more access to the National parks that line the western side of the river.

It would require that "real" bridges are built to the replace the glorified causeways that are currently available. It would also be a plus if the Rogan Bridge Road causeway was rebuilt as a bridge so that river traffic could go to Copmanhurst or into the Orara River. With high banks on each side a new Rogan bridge would be a straight forward project.

Whether it is Lake Eildon, Lake Argyle, Yarrawonga Weir or the Ross River Dam, manmade lakes attract tourists. A dam on the Clarence would ensure that the valley achieved its goal of being a major recreational destination. This is even more likely to occur as there are so few fresh water resort lakes, along the NSW coast.

Hydro Power:

With an annual flow of 4-5,000GL it would be possible to install a significant hydro-electric plant at the dam site, which would supply clean green power to the valley. It could be used more reliably and at less cost, for peak period generation, than other forms of green power.

The Environment:

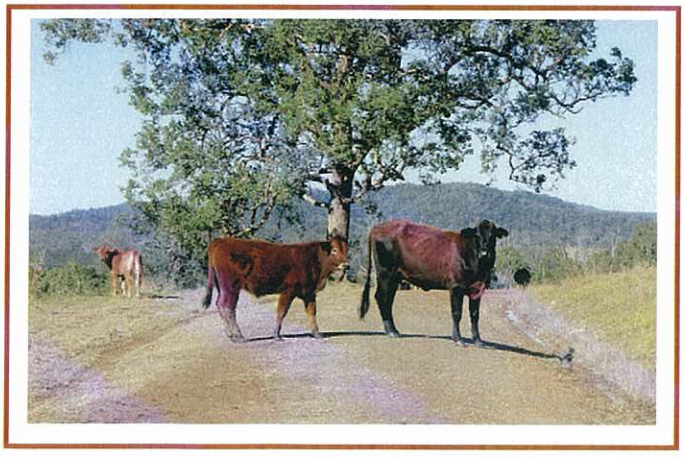
But it would ruin the river! I doubt it. In a reply to one of my earlier letters , who lives at "the end of the Mann River" asked me to come up and have a cuppa (yet to be done - one planned date was washed out – by a flood) and "see for yourself the untouched, pristine, heritage river system".(It's definitely not pristine and I do have some experience with pristine rivers as I used to spend my summers rafting the wild rivers of Alaska, where days, even weeks could go by without seeing anything but an occasional footprint.)

The river for much of its length is not accessible due to private land issues or barbed wire fencing, there to keep the cows either in or out - I'm not sure which. But it sure keeps people out. Even at some of the bridges access to the river is not possible due to barbed wire extending down on to the bridge.

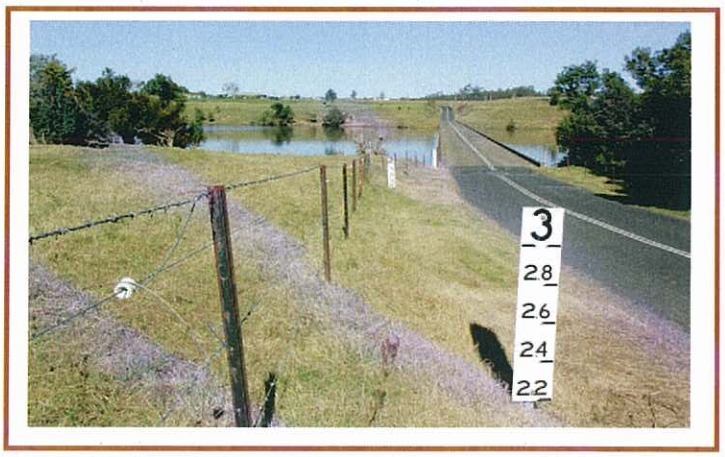
People! It seems that to some people an environment that includes people (except themselves) is a no-no. Fortunately that opinion is starting to change. Even leading environmentalists are starting to realise that people are part of the environmental equation. James Lovelock on 11-12-12: "*I am an environmentalist and founder member of the Greens (and the originator of the Gaia theory), but I bow my head in shame at the thought that our original good intentions should have been so misunderstood and misapplied... nor did we expect the Greens to cast aside our priceless ecological heritage because of their failure to understand that the needs of the Earth are not separable from human needs.*"

And it is not only the environment above the dam that needs to be considered but the environment of the whole valley. Just take a few of the headlines from the current January 2013 flood: Massive cleanup to follow record flood; Floods recede leaving locals to face battle with mould; Roads becoming accessible as floodwaters move down river; "Bowling Club is just wet enough to ruin everything"; Levee at Brushgrove may not have made a difference; Copmanhurst residents come to terms with losing everything; "At least we are better off than people who lost everything'; Information on post-flood waste collection; Bread and milk drop to Tucabia; It could be days before the Pacific Highway between Ballina and Grafton is opened.

Maybe there is hope that a proper balance can be achieved. Lakes are great! I've yet to see a lake anywhere, and particularly in Australia, whether natural or manmade, which does not attract more wildlife diversity, people and achieve environmental outcomes, than lake-less areas. Just think of Lake Eyre when it fills up.



The river valley is not pristine, unless these are the rare, native cowroos.



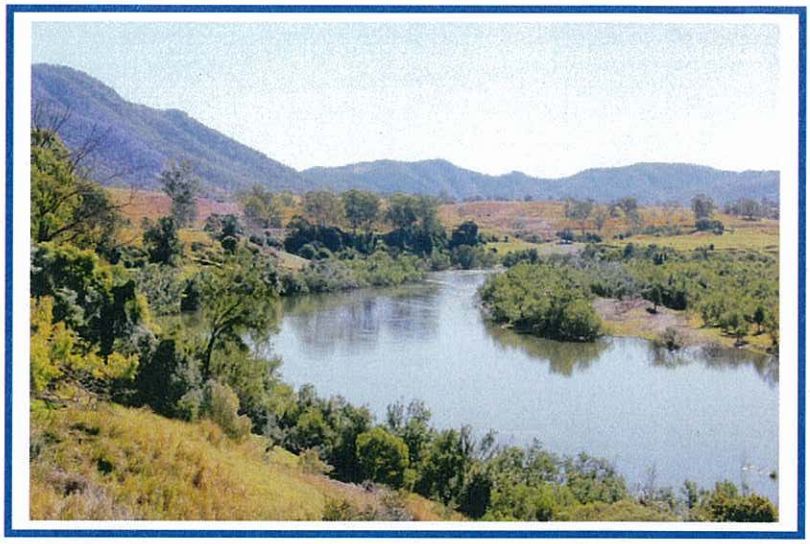
The Rogan Bridge Road "causeway". Building a bridge bank top to bank top would be flood proof and allow river traffic to reach Copmanhurst. And the barbed wire makes portage impossible.

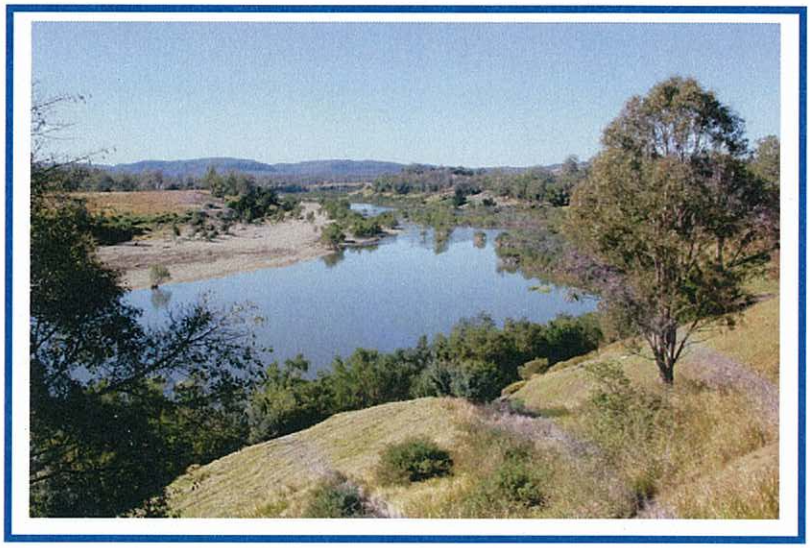
Conclusion:

Lachlan Thompson (Comment DE 02-02-13) wrote "… the question we should be asking is where do we need to build the new walls to reduce the impact of the next flood?" Just building more levees is like trying to contain the mythical river serpent after it has escaped from its upriver lair. Not only that, but if the river isn't allowed to flood in one place then there will be additional flooding further downstream. It would seem to me, and hopefully many others in the Valley that the most sensible and effective wall would be to build Ibbo's dam where we would have some control over the torrents rushing down the river. It wouldn't eliminate all flooding but would significantly minimise it. The wall is also a lot shorter than Lachlan's!

I believe the dam would meet the NSW Department of Primary Industry's guideline of the "the benefits outweighing the cost". Tony Abbott said a year ago that if elected, new dams would be on the agenda. It's up to the local, state and federal politicians to bring this project to fruition.

I look forward to reading responses from our council and our politicians as to their position for such a project, along with the thoughts of the local community. And while they are contemplating their positions it would be sensible to do a geological/engineering site suitability survey.





Looking upstream and downstream near Winegrove. The wide river is due to a natural "dam". With a man-made dam much of the river above the dam would appear like this.

Maybe adopting the slogan "**The Mighty Clarence –Not One Flood**" would be a good start.

John Ibbotson
Gulmarrad

John Ibbotson

The only practical way to minimise flooding of the Lower Clarence, is to control its flow above The Gorge.