



8th November 2021
Sent via electronic mail

RESPONSE TO SUPPLEMENTARY QUESTIONS

We'd like to thank the inquiry for Supplementary questions and provide the following responses.

1. *If irrigators understood that 1994 was a cap on development, why did they then proceed to massively increase storages in the northern basin?*

- The drafting of this question reveals a misunderstanding of the cap on diversions, which was not a cap on development.
- Storages are multi-purpose and not solely for the purpose of Floodplain Harvesting (**FPH**). They have the ability to hold other classes of licenced entitlements such as supplementary and general security which are far more commonly extracted than FPH.

Storages are also required for environmental purposes to ensure water is recycled and reused and to ensure potentially contaminated runoff is not released back into river systems. This was explained during the hearing.

- Diversions are managed through measurement, reporting and accounting of water use against volumetric limits within a license. This level of accountability does not currently exist for FPH despite being a component of the cap and licensing proposed in the first water sharing plans.
- Available water for irrigation has reduced overtime in response to reforms starting with the cap on diversion in 1993/1994, then water sharing plan limits in the 2000's and the Basin Plan in 2012.

2. *How many megalitres of water does it take to grow a hectare of cotton, on average?*

- All crops require water to grow, whether that's from rainfall or stored soil moisture or water applied through irrigation.
- There is no reputable average amount of water to grow a hectare of cotton. The volume required depends on geography, climate – temperature and rainfall, the cotton plant variety, agronomic and farming decisions for yield, disease, and farm water efficiency.

- We fail to see the relevance of the commodity specific nature of the question. Irrigators, as with other licence holders can elect to use the limited volumes available to them, on whatever crop or business they choose. It's important regardless of what crop is grown that the irrigator is as efficient as possible with the available water for sustainable use of the resource, but also to operate a sustainable agricultural business benefiting local communities and the Australian economy.
- For interest's sake, it's worthy of note that current research shows that the cotton industry has improved efficiency requiring 48% less water for production than was required in 1992.

3. How regular are flood events in the Northern Basin?

- This is variable depending on location and the scale of a rainfall event.
- This information is best sourced from the people who collect and analyse data on flows and floods. We suggest this question be directed to NSW State Emergency Service or WaterNSW, who manage flood operations in NSW, or the Bureau of Meteorology.
- An important point to note in the Macquarie Valley is prolonged artificial flooding can occur as a result of Flood Mitigation Operations from Burrendong Dam and the adopted policies relating to towns and properties in times of flood. This is an extremely important point to be understood when assessing how flooding occurs in the Macquarie Valley and its impacts.

4. What would prevent an irrigator from wanting to take 500% of their allocation in a single flood year?

- The use of *want* in this question makes it difficult to answer on behalf of the irrigator, as it is subjective and event specific.
- Hypothetically, if floodplain licensing existed as proposed in the Border Rivers, Gwydir and Macquarie with shares being reduced to allow for 500% carryover to maintain the long-term limit, then the following factors would limit take to the maximum account limit of 500%:
 - Volume of water in account – irrigators would have to accrue water for five-years to have their maximum account availability.
 - An irrigator would need a flood and it would need to be large enough and last long enough to allow them to intercept their full allocation, using their current infrastructure.
 - An irrigator would need to have the available airspace in their storage.
- Currently, there are no actual limits on take during a flood event.

5. Have you modelled the impacts of climate change in your valley?

- We do not have the capacity for such modelling but draw on information by industry research as well as the NSW Government's Regional Water Strategy work. These provide the framework for assessment of a variety of possible climate scenarios to inform decision making.
- It is important to note the current Available Water Determination (**AWD**) process takes actual climate change, rather than modelled, into account as it reflects the actual climate and water available at that time.

Water allocations are only made if there is enough water remaining after critical human and environmental needs have been satisfied. If those cannot be satisfied no allocation is made. The same process is proposed within the FPH licencing framework such that if there are climate changes into the future not accounted for, they will be picked up in the AWD process for FPH entitlements.

- For irrigators, research and innovation in water use efficiency is critical to their ability to adjust to changes in climate. This coupled with programs that encourage efficient use of water when its available, has allowed production to continue to grow, despite the evidenced actual reduction to water through policy reforms and lower allocations due to inflows as evident in the last 10-years.
 - Irrigators, as with farmers everywhere, adjust to changes in climate everyday through their farming decisions, the way they farm and the crops they choose. No farmer farms the same way they did 20-years ago and the do not anticipate farming the same way in the next 20-years.
- a. *What do those models say about the reduction in flood events due to climate change?*
- Refer to the Regional Water Strategy.
- b. *What do those models say about the reduction of inflows due to climate change?*
- Refer to the Regional Water Strategy.

If you have any further queries or wish to discuss this matter, please do not hesitate to contact me.

Kind Regards

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Macquarie River Food and Fibre

Macquarie River Food and Fibre (MRFF) is an industry body representing water licence holders who are ground and surface water users in the Macquarie Valley Catchment. We represent and support over 500 water entitlement licence holders and their communities.

MRFF members are food and fibre producers contributing to the economic, social and environmental health of the Macquarie Valley.