Notes for discussion
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The following arithmetic sets out the assumptions that underlie "efficiency savings" through investment in improved on farm technology in the MDB.

1. **Base case**
   A farmer has an allocation of 100 units of water.
   Using flood irrigation, his on farm irrigation efficiency is 50%.
   So: 100 units delivered to the farm
   50 units of water are consumed by the crop
   50 units of water go somewhere else.

2. **Upgraded technology case**
   On farm efficiency increases to 90% by the introduction of drip technology.
   In order to maintain the original level of crop water consumption, the farmer only needs to apply 55.5 units of water to the field (55.5 * 90% = 50 units of crop water consumption, as before).
   Thus abstraction can be reduced by 44.5 units (100 originally; now 55.5)
   The farmer now "shares" this saving with the State, half (22.25) is left "in stream"; half is allocated to the farmer, so the revised allocation to the farmer is 77.75 units (55.5+22.25).
   So: 77.75 delivered to the farm of which
   70 units of water consumed by the crop (77.75 * 90%)
   7.75 units go somewhere else
   22.25 units left "in stream"

   Key points:
   i) In both scenarios the total inflows and outflows add up to 100. This is the law of conservation of mass.
   ii) In the first case, the 50 units of water not consumed by the crop are either recharging an aquifer (which may or may not be usable), or it goes to drains possibly returning to the system. It does *not* disappear.
   iii) In the second case, consumption of water has *increased* by 40% -- from 50 units to 77.75.
   iv) 7.75 units goes to aquifers or drains.
   v) The key question, then, is whether the 50 unconsumed units in the base case contributed more or less water to the environment than the 22.25 units left "in stream" following the system upgrade.