



Australian Government

**Australian Government response to the
Senate Rural and Regional Affairs and Transport
References Committee report:**

**Management of the Murray-Darling Basin system:
Second interim report: The Basin Plan**

JANUARY 2013

Government response to Management of the Murray-Darling Basin system: Second interim report: The Basin Plan

The Australian Government welcomes the Senate Rural and Regional Affairs and Transport References Committee's second interim report for the inquiry *Management of the Murray-Darling Basin system – the Basin Plan* which was presented on 3 October 2012. The report made eight recommendations, with a further seven each by the Australian Greens, and Senator Xenophon respectively. The Government's response to each of these recommendations is set out below.

On 6 August 2012, the Murray-Darling Basin Authority (MDBA) released the altered Proposed Basin Plan, taking into account the views of the Murray-Darling Basin Ministerial Council.

On 13 September and 1 November 2012, the Minister for Water, the Hon Tony Burke MP made suggestions for changes to the Proposed Basin Plan under section 44(1) of the *Water Act 2007*. The suggestions have taken full account of the recommendations from jurisdictions, parliamentary committees and community meetings.

The final Basin Plan was signed into law by the Minister on 22 November 2012 and tabled in the Parliament on 26 November 2012.

Australian Government response to the

Senate Rural and Regional Affairs and Transport

References Committee report:

Management of the Murray-Darling Basin system:

Second interim report: The Basin Plan

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Recommendation 1

The committee recommends that the Murray-Darling Basin Authority (MDBA) publicly release a succinct, non-technical explanation of the assumptions used to develop the 2750 gigalitres per year (GL/y) figure.

Agree.

The Murray-Darling Basin Authority (MDBA) has published a range of documents that explain the assumptions used to develop the 2750 gigalitres (GL) per year figure, including the following:

- *Delivering a Healthy Working Basin*, Chapter 4, pages 20–34;
- Frequently asked question: *How did you determine the limits on water use?*;
- Fact sheet – *The proposed environmentally sustainable level of take for surface water of the Murray–Darling Basin*;
- *Proposed Basin Plan consultation report* (s43 report), May 2012, p37–39; and
- *The Basin Plan Regulation Impact Statement*, November 2012, Chapter 4.

The above documents are in addition to the detailed explanations in the document *The proposed 'environmentally sustainable level of take' for surface water of the Murray–Darling Basin: Method and outcomes*, November 2011, and the document, *Hydrologic modelling to inform the proposed Basin Plan: Methods and results*.

Recommendation 2

The committee recommends that the MDBA consider modelling several alternative scenarios other than the 2750 GL/y. All relevant results (including the allocation of different water types) from any modelling must be publically released. The CSIRO must be commissioned to review the effectiveness of any scenario to reach the Water Act's required ecological outcomes. Finally, the socio-economic impacts of any scenario must be independently modelled and the results publically released.

Agree.

The MDBA has modelled the scenarios of 2400 GL, 2800 GL and 3200 GL with the present operating constraints. The results of this modelling were published by the MDBA in *The proposed 'environmentally sustainable level of take' for surface water of the Murray–Darling Basin: Method and outcomes* (MDBA 2011), available on the MDBA's website.

The MDBA has also modelled the 2800 GL and 3200 GL scenarios with key constraints relaxed. Results indicated the 3200 GL scenario with relaxed constraints could deliver increased environmental benefits. The outcomes of this further (relaxed constraints) modelling was published by the MDBA in *Hydrologic modelling of the relaxation of operational constraints in the southern connected system: Methods and results* (MDBA 2012), which is available on the MDBA's website.

In conjunction with this hydrological modelling, the MDBA also commissioned modelling of the social and economic impacts of water recovery of 2400 GL and 3200 GL. The outcomes of this modelling are summarised in the report *Socioeconomic Analysis and the Draft Basin Plan*, published by the MDBA in May 2012 and the Basin Plan Regulation Impact Statement, released by the MDBA in November 2012. These reports and the detailed modelling are available on the MDBA's website.

In June 2011, the CSIRO was invited to lead a team of experts to review the MDBA's methods to determine the Environmentally Sustainable Level of Take (ESLT). The report, *Science review of the estimation of an environmentally sustainable level of take for the Murray–Darling Basin* (Young WJ, Bond N, Brookes J, Gawne B and Jones GJ 2011), is available on the MDBA's website.

Recommendation 3

The committee recommends that the MDBA publicly release a succinct, non-technical explanation of its climate change projections and the resulting effects to each Basin catchment's water harvesting potential. This should also include considerations of forest interception of water in the modelling for the return of water to the Murray-Darling Basin system.

Agreed in part.

The MDBA is a partner of the South Eastern Australian Climate Initiative (SEACI). SEACI has produced two succinct, non-technical explanations of climate change projections at the Basin scale, with the final report, *Climate and water availability in south-eastern Australia: A synthesis of findings from Phase 2 of the South Eastern Australian Climate Initiative*, released on 21 September 2012.

The Basin Plan (section 6.06(3)) requires that future reviews of the Basin Plan should give further consideration to the management of climate change risks and consider all relevant knowledge about the connectivity of surface and groundwater.

The MDBA has taken into consideration forest interceptions in developing SDLs for the Basin Plan. The Basin Plan (Section 4.03(3)(h)(i)) provides that the MDBA must have regard to improve knowledge of the impact of interception activities and land-use change on Basin water resources. Under section 10.24 and 10.25, Basin states must also monitor the impact of significant interception activities in their jurisdiction, and identify actions to be taken if that interception activity compromises meeting the environmental objectives of the Basin Plan.

Recommendation 4

The committee recommends that the Government commit immediate resources to addressing the information gaps in scientific knowledge in surface and ground water connectivity particularly in the Murray-Darling Basin.

Agree in principle.

The Australian Government considers it has, and continues to commit significant resources to increasing scientific knowledge.

The Government has undertaken, commissioned and/or consulted on significant quantities of scientific work, utilising various respected and expert sources. Information gaps in scientific knowledge, particularly in respect of Basin connectivity, do not require the further commitment of "immediate resources" beyond the significant commitment the Government continues to make in respect of this issue.

The Basin Plan (section 6.06(1)) states the MDBA may conduct research and investigations into aspects of the work underpinning SDLs or other aspects of the Basin Plan. This work may inform future reviews and will allow the MDBA to address information gaps in scientific knowledge in surface and groundwater connectivity.

Recommendation 5

The committee recommends that the MDBA further articulate the reasoning for the changes in groundwater SDLs that have occurred over the various iterations of the Basin Plan. This should include details of all individual resource units and the aggregate for the Basin.

Agree.

The MDBA has publicly detailed the changes to groundwater SDLs over the various iterations of the Basin Plan. The following explanatory documents have been published:

- *The proposed Groundwater Baseline and Sustainable Diversion Limits: methods report* provides the general reasons for changes between the Guide and the November 2011 version of the draft Basin Plan. Importantly, this document provides a baseline for subsequent changes;
- *The Addendum to the proposed Groundwater Baseline and Sustainable Diversion Limits: methods report* provides the basis for the revision made between the November 2011 and May 2012 versions of the draft Basin Plan. This revision was largely a response to submissions on the draft Basin Plan as well as consultation with Basin states and advice from groundwater experts; and
- *The Proposed Basin Plan consultation report* released in May 2012 provides an explanation of Basin scale changes to groundwater SDLs from the November 2011 to May 2012 versions of the draft Basin Plan.

In developing groundwater extraction limits for the Basin Plan, the MDBA has worked with groundwater experts from organisations including the CSIRO and hydrogeology associations. A recharge risk assessment method, originally developed by CSIRO for the MDBA, has been applied where numerical groundwater models have not been available. The same modelling and risk assessment methods have been applied to determine groundwater SDLs in each iteration of the Basin Plan, and these will continue to be applied to any future proposals and assessments relating to adjusting groundwater limits.

The Basin Plan (section 6.06) allows for a review of specified groundwater baseline diversion limits (BDLs) and SDLs in NSW and Victoria within two years of commencement of the Basin Plan. The MDBA also intends to conduct research and investigations by 2015 in the Northern Basin, including the basis for the surface and groundwater SDLs, drawing on community input from relevant local bodies.

Recommendation 6

The committee recommends that the MDBA clearly and publicly explain whether the 2750 GL/y target, and any subsequently modelled targets, meet the water requirements of key environmental assets and key ecosystem functions which are set out in the Basin Plan and required by the *Water Act 2007* and to what extent they are met.

Agree.

The MDBA has explained the results and anticipated environmental outcomes with respect to 2400, 2800 and 3200 GL per year water recovery amounts in the documents:

- *The proposed 'environmentally sustainable level of take' for surface water of the Murray-Darling Basin: Method and outcomes*, November 2011;
- *Hydrologic modelling to inform the proposed Basin Plan: Methods and results* (February 2012); and
- *Hydrologic modelling of the relaxation of operational constraints in the southern connected system: Methods and results* (September 2012).

The *Water Act 2007* does not identify, nor require the identification of, key environmental assets or key ecosystem functions in the Basin Plan. The Basin Plan does not set out key environmental assets and key ecosystem functions; rather it specifies management objectives and outcomes to be achieved by the Basin Plan. The Basin Plan requires the states to develop watering plans that identify priority environmental assets and ecosystem functions and their watering requirements (consistent with objectives and criteria contained in the Basin Plan).

The MDBA has released modelling for 3200 GL and 2800 GL scenarios after key constraints in the system had been relaxed. The modelling indicated relaxing constraints provides some benefits at 2800 GL, while the removal of constraints at 3200 GL significantly increased environmental benefits, including the meeting of 17 out of 18 key indicator targets, compared to 13 targets met without the removal of constraints.

The Basin Plan requires the MDBA to prepare a Constraints Management Strategy within 12 months of the Basin Plan commencing, in close consultation with Basin jurisdictions. Further, the MDBA must annually give a report to the Murray Darling Basin Ministerial Council on progress on the matters covered by the strategy.

Recommendation 7

The committee recommends that the MDBA clearly and publicly explain the socio-economic impacts of the 2750 GL/y target and any subsequently modelled targets.

Agree.

The MDBA has made public the documents *The Socio-economic implications of the proposed Basin Plan*, published May 2012, *Socioeconomic Analysis and the Draft Basin Plan*, published November 2011, and the Basin Plan Regulation Impact Statement, published in November 2012, which provide a detailed explanation of the independent socio-economic modelling undertaken for the water recovery scenarios of 2400 GL, 2800 GL and 3200 GL. These reports are available from the MDBA's website.

Recommendation 8

The committee recommends that when the final Basin Plan is being implemented that the Government introduce support programs for Basin communities that are disproportionately affected by reduced water entitlements.

Agree.

The former Minister for Regional Australia, the Hon Simon Crean MP, announced \$100 million of Commonwealth Government funding for community-driven economic diversification projects in the Basin which will assist Basin communities to adjust to a future with more sustainable water use.

This is in addition to the already substantial funding commitments to reduce the possible impacts of the Basin Plan, particularly by investing over \$12 billion in assisting irrigators and communities to adjust to a future with less water. The Government's investments in more efficient irrigation infrastructure form the bulk of this funding and will help place irrigators, irrigation industries and communities on a better footing to deal with reduced water availability.

The SDL adjustment mechanism will also assist in reducing the impacts of water reform, by allowing Basin states to develop projects, such as environmental works and measures, that deliver the environmental outcomes required by the Basin Plan but with less water. It will also support the Government's objective of recovering additional environmental water through projects that maintain or improve social and economic impacts.

In addition, implementation of SDLs will not take effect until 2019, providing more time for communities to adapt.

Australian Greens:

Recommendation

The Australian Greens recommend that the MDBA model several alternative scenarios above 2750 GL/y including 4000 GL/y and above, *with major system constraints removed*. All relevant results (including the allocation of different water types) from the modelling must be publically released. The CSIRO must be commissioned to review the effectiveness of each scenario to satisfy the Water Act's required ecological outcomes.

Agreed in part.

The MDBA has modelled the 2800 GL and 3200 GL scenarios with key constraints relaxed. Results indicated the 3200 GL scenario with relaxed constraints could deliver increased environmental benefits. The outcomes of this further (relaxed constraints) modelling were published by the MDBA in *Hydrologic modelling of the relaxation of operational constraints in the southern connected system: Methods and results* (MDBA 2012), which is available on the MDBA's website.

Recommendation

The Constraints Management Strategy should be provided to Parliament for consideration prior to the tabling of the final Basin Plan by the Minister so that Parliament may make an informed decision.

Disagree.

The Basin Plan requires the MDBA to prepare a Constraints Management Strategy within 12 months of the Basin Plan commencing, in close consultation with Basin jurisdictions. Further, the MDBA must annually give a report to the Murray Darling Basin Ministerial Council on progress on the matters covered by the strategy.

Recommendation

The Basin Plan must set appropriate salinity targets and provide for a minimum annual allocation of environmental water for the Coorong, Lower Lakes and Murray Mouth including during dry periods.

Agree in principle.

The Basin Plan includes clauses that provide for appropriate salinity and water levels in the Coorong, Lower Lakes and Murray Mouth including during dry periods.

Section 8.06(3) of the Basin Plan states that an overall objective for the protection and restoration of ecosystem functions of water dependent ecosystems is to protect and restore connectivity within and between water-dependent ecosystems, including by ensuring that:

1. the Murray Mouth remains open at frequencies, for durations, and with passing flows, sufficient to enable the conveyance of salt, nutrients and sediment from the Murray-Darling Basin to the ocean; and
2. the Murray Mouth remains open at frequencies, and for durations, sufficient to ensure that the tidal exchanges maintain the Coorong's water quality (in particular salinity levels) within the tolerance of the Coorong ecosystem's resilience; and
Note: This is to ensure that water quality is maintained at a level that does not compromise the ecosystem and that hydrologic connectivity is restored and maintained.
3. as far as practicable, water levels in the Lower Lakes are maintained above 0.4 metres Australian Height Datum for 95 per cent of the time and as far as practicable maintain levels above 0.0 metres Australian Height Datum all of the time.

The Government has committed funding to recover an additional 450 GL of water, including for the Coorong, Lower Lakes and Murray Mouth, through efficiency savings.

Recommendation

The Basin Plan should not increase groundwater extraction unless it can demonstrated on a case by case basis, with independent scientific assessment of connectivity and ecological outcomes, that the proposed increase in extraction is sustainable and justified.

Agree.

Changes to groundwater extraction limits should be addressed on a case-by-case basis to ensure any changes are sustainable and justified.

In developing groundwater extraction limits for the Basin Plan, the MDBA has worked with groundwater experts from organisations including the CSIRO and hydrogeology associations. A recharge risk assessment method, originally developed by CSIRO for the MDBA, has been applied where numerical groundwater models have not been available. The same modelling and risk assessment methods have been applied to determine groundwater SDLs in each iteration of the Basin Plan, and these will continue to be applied to any future proposals and assessments relating to adjusting groundwater limits.

The Basin Plan allows for a review of specified groundwater base line diversion limits (BDLs) and SDLs in NSW and Victoria within two years of commencement of the Basin Plan. The MDBA also intends to conduct research and investigations by 2015 in the Northern Basin, including the basis for the surface and groundwater SDLs, drawing on community input from relevant local bodies.

Recommendation

The Basin Plan must incorporate climate change modelling as forecast by the best available scientific data.

Agreed in principle.

Climate change science was taken into consideration in developing the Basin Plan.

The MDBA is a partner of the South Eastern Australian Climate Initiative (SEACI). SEACI has produced two succinct, non-technical explanations of climate change projections at the Basin scale, with the final report, *Climate and water availability in south-eastern Australia: A synthesis of findings from Phase 2 of the South Eastern Australian Climate Initiative*, being released on 21 September 2012.

The Basin Plan (section 6.06) requires that future reviews of the Basin Plan should give further consideration to the management of climate change risk and that the MDBA may conduct research and investigations into aspects of the work underpinning SDLs or other aspects of the Basin Plan. This work may inform future reviews of the Basin Plan and will allow the MDBA to address information gaps in scientific knowledge in surface and groundwater connectivity.

Recommendation

The adjustment mechanism should be structured to better accommodate the removal of constraints and to facilitate a future decrease in SDLs but not to facilitate any less water being returned to the river.

Agree in part.

The SDL adjustment mechanism guarantees a minimum level of environmental outcomes and provides a pathway for improved environmental outcomes in a way that works for communities. This will allow the amount of water for the environment to increase if projects are put forward that make irrigation more efficient and still maintain the social and economic outcomes of the Basin Plan. The Government has committed \$1.77 billion over ten years from 2014 to relax priority river constraints and to provide for 450 GL of additional environmental water recovery without adverse social and economic impacts.

Recommendation

The adjustment mechanism should be altered to facilitate and encourage future buybacks where they are strategic and voluntary as buybacks are proven to be the most cost-efficient and secure manner of recovering water from consumptive use.

Agreed in part.

The Basin Plan provides for a SDL adjustment mechanism that provides greater flexibility in the volume of water recovered for the environment, while maintaining or improving social and economic outcomes. There is no single preferred method of recovering water for the environment using the adjustment mechanism, and any such water acquisition must be in accordance with the requirements of the criteria as set out in the Basin Plan.

The role that water buybacks play in recovering water for the environment is outlined in the Commonwealth's draft Environmental Water Recovery Strategy.

The Government's approach to water purchasing will also include a new program which integrates water purchasing with strategic opportunities to reconfigure inefficient or underutilised irrigation delivery infrastructure. If the volume of SDL offsets is less than 650 GL, any shortfall will be recovered between 2016 and 2019 using the approaches, outlined in the draft Environmental Water Recovery Strategy.

Senator Xenophon:

Recommendation

The MDBA publicly release a non-technical explanation of the assumptions used to develop the 2750 GL/y.

Agree.

The MDBA has published a range of documents explaining the assumptions used to develop the 2750 GL per year figure, including the following:

- Document - *Delivering a Healthy Working Basin*, Chapter 4, pages 20–34;
- Frequently asked question - *How did you determine the limits on water use?*;
- Fact sheet - *The proposed environmentally sustainable level of take for surface water of the Murray Darling Basin*;
- Document - *Proposed Basin Plan consultation report* (s43 report), May 2012, p37–39; and
- *The Basin Plan Regulation Impact Statement*, November 2012, Chapter 4.

The above documents are in addition to the more detailed explanations in the document *The proposed 'environmentally sustainable level of take' for surface water of the Murray–Darling Basin: Method and outcomes*, November 2011, and the document, *Hydrologic modelling to inform the proposed Basin Plan: Methods and results*.

Recommendation

The MDBA conduct urgent modelling of a number of figures above the 2750 GL/y figure, up to 4000 GL/y. This modelling must be publicly released with a both a technical and non-technical explanation and conducted in a timely manner.

Agreed in part.

The MDBA modelled the scenarios of 2800GL and 3200GL with the present operating constraints. The results of this modelling were published by the MDBA in *The proposed 'environmentally sustainable level of take' for surface water of the Murray–Darling Basin: Method and outcomes* (MDBA 2011), available on the MDBA's website.

The MDBA also modelled these scenarios with key constraints relaxed, and found the 3200 GL scenario with relaxed constraints could deliver increased environmental benefits. The outcomes of this further (relaxed constraints) modelling have been published by the MDBA in *Hydrologic modelling of the relaxation of operational constraints in the southern connected system: Methods and results* (MDBA 2012), which is available on the MDBA's website.

Recommendation

The Murray-Darling Basin Plan is delayed until such modelling is completed.

Disagree.

The MDBA has publicly detailed the results and anticipated environmental outcomes with respect to 2400, 2800 and 3200 GL per year water recovery amounts in the following documents, available on the MDBA website:

- *The proposed 'environmentally sustainable level of take' for surface water of the Murray–Darling Basin: Method and outcomes*, November 2011;
- *Hydrologic modelling to inform the proposed Basin Plan: Methods and results* (February 2012); and
- *Hydrologic modelling of the relaxation of operational constraints in the southern connected system: Methods and results* (September 2012).

Further, the MDBA undertook and publicly released modelling for 3200 GL and 2800 GL scenarios after key constraints in the system had been relaxed. The modelling indicated relaxing constraints provides some benefits at 2800 GL, while the removal of constraints at

3200 GL significantly increased environmental benefits, including the meeting of 17 out of 18 key indicator targets, compared to 13 targets met without the removal of constraints.

The Basin Plan was made on 22 November 2012.

Recommendation

The MDBA must urgently provide advice as to the methodology for the setting of the BDL.

Agreed in part.

The MDBA has already provided information about the methodology for the setting of the baseline diversion limits (BDL) in several reports, which are publicly available on the MDBA website. In addition, the MDBA has engaged the CSIRO and other independent experts to review the models and methodology used to determine BDLs.

The MDBA acknowledges that further communication on this matter would be beneficial for the broader Basin community. Consequently, the MDBA is preparing a series of fact sheets which set out the methodology in clear and concise language. These fact sheets will be available on the MDBA's website in the near future.

Further information and links to the relevant reports is set out below. These reports are all available on the MDBA website:

- *Hydrologic modelling to inform the proposed Basin Plan: Methods and results.*
- *Comparison of watercourse diversion estimates in the proposed Basin Plan with other published estimates.* This document summarises and explains the main differences between the diversion estimates under baseline development conditions used in the draft Basin Plan and estimates published in the past.
- *Independent review of models to assess their representation of the baseline conditions specified in the Basin Plan and estimating BDL.* The models were assessed regarding their ability to generate a robust BDL estimate and how they represent BDL definition presented in the proposed Basin Plan.
- *River system modelling for the Basin Plan assessment of fitness for purpose.* The MDBA engaged CSIRO to conduct this assessment of the without-development and baseline models. This study found that the baseline models reliably represent the Basin at its current level of development.

Recommendation

Urgent modelling is undertaken to establish the comparative efficiencies of irrigation communities in the Murray-Darling Basin. The results of such modelling can be used to fairly determine Baseline Diversion Limits, and take into account such comparative efficiencies to ensure fair treatment of irrigators.

Disagree.

The approach used to determine the BDLs has been applied in a fair and equitable manner. The MDBA has adopted a consistent approach to defining and quantifying the BDLs across the Basin. These are set out in Schedule 3 of the Basin Plan.

BDLs provide a common baseline against which the introduction of the requirements of the Basin Plan can be assessed. These requirements include the setting of SDLs. The BDLs reflect the water sharing arrangements that were in place in June 2009. In most cases the BDL reflects the diversion limit established under the Murray-Darling Basin cap arrangements, unless there is a state water resource plan that sets the limit lower than the cap.

The consistent settings and assumptions for BDLs include:

- using the most up-to-date means of quantifying the baseline (typically using a model)
- using the same climate period (1895-2009)
- accounting for certain environmental water as outside the baseline (including the Living Murray and Water for Rivers), and
- adjusting for permanent trade to 30 June 2009.

Recommendation

Irrigators must receive recognition for their past water efficiencies. In the absence of any prior recognition for past water-saving efforts, the guidelines for the Sustainable Rural Water Use and Infrastructure Program and other similar programs should be amended to allow irrigators to apply for funding for research and development purposes.

Disagree.

The Australian Government recognises the initiative demonstrated by early adopters to improve rural water use efficiency, however the Sustainable Rural Water Use and Infrastructure Program (SRWUIP) does not provide funding to cover expenditure already incurred or committed.

The argument of early adoption and efficiency is often linked to irrigators in South Australia. As at 16 October 2012, the Government had committed almost \$1.2 billion under Water for the Future (which commenced in 2007-08) to South Australian projects, including major investments to improve ecological outcomes in the Coorong and Lower Lakes, as well as funding for irrigation-related projects (both on and off-farm) and the Adelaide Desalination Plant. On 28 October 2012, the Government announced a further commitment of up to \$265 million to South Australia. Subject to due diligence, the funding includes up to \$180 million from SRWUIP for the South Australian River Murray Improvements Program, as well as up to \$85 million for research, development and industry redevelopment in regional South Australia.

Recommendation

The MDBA provide urgent evidence that the current market-based buyback approach will not distort the water and commodity market. In the absence of any available evidence, the MDBA conduct urgent modelling on the impact the market-based buyback approach will have on those who have not accessed funds under the Federal Government's \$5.8 billion Sustainable Rural Water Use and Infrastructure Program and other similar programs.

Agreed in part.

In June 2011, the Government released a survey of more than 500 irrigators who had applied to sell or sold water to the Commonwealth between 2008-09 and late 2011. Almost 80 per cent of those interviewed said that selling water to the Commonwealth was a positive decision for them. The majority of proceeds from water sales are spent within the local region. Less than 5 per cent of survey respondents said that most of the money they had received from Commonwealth water sales had been spent outside their region. Almost all of those who sold their entitlement to the government and exited farming found alternative local employment, or retired in their local community.

Entitlement holders are able to choose whether to participate in either, or both, of the Government's water buybacks, or Government programs investing in more efficient irrigation infrastructure.

