

National Agricultural Plastics Stewardship Scheme – Update

Department of Climate Change, Energy, the Environment and Water
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PROJECT RECAP

This project aims to develop an agricultural plastics stewardship scheme for non-packaging plastic waste. The scheme will facilitate and incentivise a viable market to recycle agricultural plastics. It will involve solutions for on-farm retrieval, from farm collection logistics, processing technology and equipment and development of recycled plastic products and their markets.

This project is one of 24 funded under the National Product Stewardship Investment Fund¹ and a key initiative of the National Waste Policy Action Plan². It is being implemented from January 2021 to March 2023.

¹ environment.gov.au/protection/waste/product-stewardship/national-product-stewardship-investment-fund

² environment.gov.au/protection/waste/publications/national-waste-policy-action-plan



An example of a grain bag retriever used on-farm. Image: Marissa Shean.

KEY MESSAGES

- The project is progressing well with the completion of pilot projects in Victoria and Queensland at the end of October 2022
- We are currently reviewing how the pilot projects performed and will undertake further plastic and agriculture industry consultation to inform the broader scheme design, which will complement existing and emerging agricultural product stewardship schemes
- The scheme design components will include recommended governance, administration and funding arrangements through a proposed voluntary levy based on the weight of plastic put on the market
- The scheme operation components will cover retrieval, collection, transport and logistics, re-processing, communication, education and marketing, as well as research and development
- The implementation plan for the national scheme will be submitted to the Australian Government in March 2023.

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OUR APPROACH

The RMCG and Growcom project team approach includes whole supply chain engagement throughout the development of the scheme via a representative Project Reference Group and extensive consultation with industry stakeholders.

This engagement aims to harness current efforts, address barriers and facilitate practical solutions for implementation of a Product Stewardship scheme.

The final recommendations for the scheme will include plastic material definitions, protocols for quality assurance, governance and operational structure, including levy and funding arrangements.



Table grape covers rolled correctly for collection. Image: Ed George.

KEY FINDINGS: VICTORIAN AND QUEENSLAND PILOTS

We have consulted extensively with the plastic and agriculture industry, existing product stewardship scheme operators and local government to determine the scale of the problem, explore the feasibility of potential recycling solutions, and undertake collection and logistics trials.

Over **470 unique stakeholders** around Australia and internationally have been engaged through the project to date.

NORTH-WEST VICTORIA RISES TO THE CHALLENGE OF AG PLASTICS RECYCLING

The Victorian pilot addressed the problem of protective film and drip irrigation plastics in large waste producing areas associated with intensive horticulture and broadacre cropping. The objectives of the pilot were to:

- Improve coordination in collection and recycling **table grape covers** and understand the costs
- Improve on-farm retrieval, bundling and size reduction of **irrigation drip tube** and associated transport cost efficiency and recycling
- Improve on-farm retrieval and collection of **grain silo bags** and understand the costs
- Recover and recycle approximately **2-5%** of the total 10,288 tonnes of agricultural plastic waste in the pilot region, equating to 200-500 tonnes.

The **Sunraysia and Loddon regions** were selected to pilot an approach to improve the collection and recycling of selected plastics due to the intensity and diversity of agricultural production.

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Grain bags at the Ouyen collection site are loaded into a hook bin for transport to a recycler in Mildura. Image: Marissa Shean.

The Victorian pilot was successful in providing **invaluable operational insights and cost metrics** on collection, pre-processing, transport and logistics, and re-processing to inform the broader scheme design. The pilot directly collected and recycled approximately **80 tonnes of irrigation tube and grain bags** over six-months from May to October 2022 that would have otherwise ended up in landfill or contaminated the environment through incorrect disposal on-farm, such as stockpiling, burying or burning.

Farmer participation and supply chain engagement was strong. This built on early and regular involvement of the 22 partner organisations in the design of the Victorian pilot and **clear and accessible resources and communication products** provided to farmers and the agriculture industry.

Materials included fact sheets, plastic retrieval instructions and Frequently Asked Questions (FAQs) complemented by media releases distributed through both online and traditional communication platforms. More than 40 print and online articles and radio interviews on the pilot were conducted over the 6 months.

Providing a range of options of strategically located permanent and temporary/pop-up collection sites was important to engage farmers. The pilot raised awareness of the importance of agricultural plastics recycling with **36 farmers participating in the pilot**. It greatly improved their understanding of how plastics should be prepared for collection, as evidenced by farmer adherence to standards when presenting material for recycling.

Pre-processing is integral to reducing the size and minimising contamination of agricultural plastics prior to transporting. **Access and use of pre-processing infrastructure**, particularly mobile and stationary balers, is extremely limited. This resulted in reduced transport efficiency and increased costs of plastics in the pilot.

The 57 tonnes of irrigation tube collected as part of the pilot is currently being recycled predominately into plastic pellets to make new irrigation tube, while the 24 tonnes of grain bags were recycled into street furniture, fence posts and bollards.

One gap for the pilot was the collection and recycling of grape covers. However, the coordination and recycling of grape covers was improved indirectly by strengthening supply chain relationships and existing collection mechanisms for grape covers in the Sunraysia region.

The strength of the partnerships in establishing and running the agricultural plastics pilot in the Sunraysia and Loddon regions was integral to its success.



Irrigation tube collected during the pilot being extruded and recycled into plastic pellets to make other products. Image: Carl Larsen.

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QUEENSLAND PILOT TACKLES ON-FARM PLASTIC RETRIEVAL PROBLEM

To help the horticulture industry address a range of agricultural plastic disposal issues, the Queensland pilot aimed to connect with growers and other recycling industry participants to **facilitate more waste material being recycled in the future**. One of the key barriers to recycling is the mixing of different plastic waste streams, particularly plastic mulch and drip tape.

This pilot aimed to gain an understanding of the types of on-farm retrieval methodologies and plastic quality specifications. On-farm assessments allowed the pilot to review and document the cost and time implications of current retrieval methods to test barriers to recovering plastic mulch and drip tape separately on horticultural farms.

The pilot targeted the **high-producing vegetable and strawberry regions** of Stanthorpe, Sunshine Coast (Wamuran), Bundaberg and Bowen Burdekin.

On-farm retrieval data was collected across multiple sites in a consistent way using a standard Field Data Collection Sheet. The benefit analysis presented a broad range of costings for retrieval and disposal of mixed plastic mulch and drip tape bundles. Of particular concern is the level of organic material contamination being exported off farm.

The project team developed a **Standard Operating Practice (SOP)** for the retrieval of drip tape and plastic mulch for the purpose of recycling. Due to the variability in equipment used for retrieval of drip tape and plastic mulch, there are significant differences in the quality and format of material supplied to the collection point.

The SOP attempts to address this variance by providing guidance for on-farm retrieval of drip tape which can be effectively recycled. The SOP will be published and distributed to growers, recyclers and other industry members by Growcom to continue to raise awareness of meeting standards during on-farm retrieval of agricultural plastics.



Plastic mulch retrieval and source separation is a key issue for Queensland growers. Images: Brock McDonald.

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Workshops, case studies, surveys and on-farm assessments were undertaken in Queensland to demonstrate the SOP and provide a networking opportunity for growers, suppliers, recyclers, processors and local government. These activities enabled **delivery of knowledge and practice improvements** relating to recycling of on-farm plastics.

The survey found that growers are willing to participate in a recycling program and undertake separation of drip tape and mulch on-farm however, there are a number of challenges such as time, cost and suitability of current retrieval equipment.

Key findings from the Queensland pilot include:

- Growers are currently ill-equipped to separate drip tape from plastic mulch
- High volumes of organic material and soil contaminate the used plastic and reduce its potential to be recycled
- Currently there are no collection points for recycling of plastic mulch, with it all going to landfill
- Current landfill costs are acceptable with growers willing and able to pay \$250-300 per tonne
- Overall low volumes of retrieved tape in Queensland are not attractive to local recyclers.

NEXT STEPS

The development of the agricultural plastics stewardship scheme involves five sequential stages. **Stages 1 to 4 are now complete.**



We are currently undertaking Stage 5 through reviewing the Victorian and Queensland pilots using the collected monitoring data to inform the broader scheme development and implementation plan. This includes continued consultation with the plastic and agriculture industry, existing product stewardship scheme operators and local government.

The project is on track to be finalised by March 2023.

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