FACILITATING THE ADOPTION OF ALTERNATIVES TO METHYL BROMIDE IN AUSTRALIAN HORTICULTURE

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INTRODUCTION

In 1995, Australian horticultural industries worth US$250 million pa faced their greatest threat of the modern era when methyl bromide (MB) was listed for phase-out under the *Montreal Protocol*. To address this issue, the Victorian Department of Primary Industries, Australia, worked with federal agencies, MB importers, fumigation contractors and other key stakeholders to develop the National Consultative Committee and release a National MB Response Strategy. This strategy underpinned a national approach to the MB phase-out and identified the priority areas for research and extension, required to support industry uptake of alternatives. A consequence of this strategy was the recognition by Australian horticultural industries that a dedicated communication network was required. This led to the establishment of a National levy on MB imports, which funded research and the development of the National MB Communication Program.

This paper reports on the strategies and activities conducted within the National MB Communication Program, and how they have led to the adoption of MB alternatives by Australian horticultural industries.

RESULTS AND DISCUSSION

The National MB Communication Program has been a critical factor in the rapid adoption and phase up of MB alternatives. Already, most Australian industries have shifted to alternatives and have reduced MB use in soils by approximately 80% since 1995 (Table 1). To achieve MB phase-out success, the National MB Communication Program strategically utilised a range of extension methods throughout the phase-out period. Some of the most effective communication tools employed included:

- Stakeholder engagement: Regular communication through events such as meetings, conferences and workshops and, equally as important, informal communications with MB importers, researchers, policy makers and MB contractors ensured a collaborative approach to the development and implementation of a phase-out strategy;
- Network development: The development of a dedicated industry-based network (including local researchers and extension officers, consultants, contractors, and policy makers), which supported the national MB communication program and facilitated the distribution of information to growers affected by the MB phase-out;
- Publications: The 'National MB Update' newsletter, national MB website, industry-specific articles and newsletters, and a grower-focussed handbook on MB alternatives provided targeted information to those affected by the phase-

out. The 'National MB Update' in particular, is now a well-recognised issue-focussed publication. The biannual newsletter is distributed to over two thousand growers and stakeholders nationally and internationally and provides a forum to communicate the latest technologies, research, issues and/or legislation to stakeholders and growers alike;

- Field Days: MB-related field days and roadshow events were conducted in all states and industries affected by the phase-out. These events communicated the latest research and policy information directly to growers at a local level, whilst also providing a forum for discussion between researchers, growers and other stakeholders. Events that displayed trials were particularly useful, as growers could independently view the effects of disinfestation treatments;
- Grower trials: Trials were conducted in all states and in every industry affected by the phase-out and assessed over forty chemical and non-chemical alternatives. These trials contributed to new products being registered in Australia (eg. Telone C-35). The trials assisted in the adoption of alternatives by providing regionally specific information on alternatives and increasing grower confidence in trial data (as the information was obtained under commercial conditions). They also provided local researchers, contractors and growers with hands-on experience in using MB alternatives.

The use of a variety of communication tools was a primary strength of the National MB Communication Program. For each industry or location, a suite of tools was applied based on their progress towards phase out and their access to industry-specific research and development programs. For example, grower trials linked with industry workshops helped industries that lacked dedicated research programs to develop the confidence and skills to move to interim strategies (eg. formulations with lower concentrations of MB) and to make the final step towards replacing MB.

Another important component of the National MB Communication Program was that research and communication activities ran in parallel. This ensured early communication of information to industry and provided the necessary time for growers to become aware and then adopt MB alternatives.

CONCLUSION

The National MB Communication Programs' strategic use of a range of communication tools facilitated Australia's high adoption rates of MB alternatives and resulted in a low number of Australian industries applying for critical-use exemptions (CUE) from the MB phase-out (Table 1, Figure1).

Currently, the program is working with industries granted a CUE under the *Montreal Protocol* to assist in the preparation of new phase-out time-lines; continued development of sustainable alternatives to MB; and the adoption of low-permeability films.

The staggered phase out of MB in Australia (30% reduction in 1999, 50% in 2001 and 70% in 2003) has already reduced bromine levels in the atmosphere above Melbourne by 30%. This success can be attributed to the industries and growers who have been committed to change and the National MB Communication Program, which has strongly supported industries in adopting new practices.

STRATEGIC MODEL FOR ADOPTION OF NEW TECHNOLOGIES

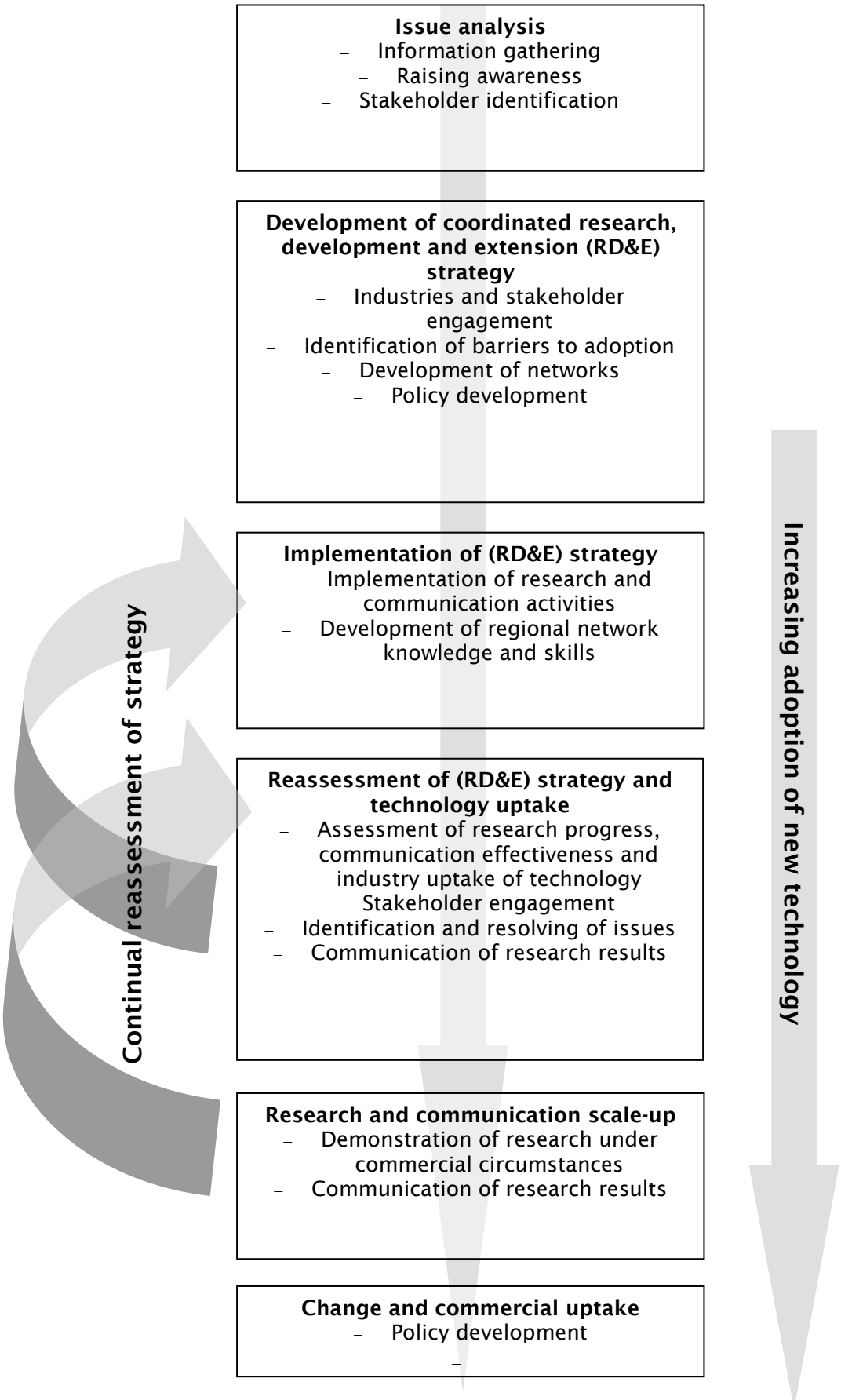

TABLE 1: Reduction in MB use in Australian horticulture since 1995.

Currently, only one Australian industry is expected to apply for a CUE for 2007.

Industry	**MB usage 1995 (tonnes)** ***approx***	**Adopted strategy**	**CUE MB allowance 2005 (tonnes)**
Melons	40	Telone C-35	0
Strawberry fruit	106	Telone C-35, metam	67*
Strawberry runners	36	Lower formulation of MB; *trialing methyl iodide and ethanedinitrile*	35.75
Fruit and vegetables	229	IPM, Telone C-35, metam	0
Flowers and bulbs	175	Substrates, steam, IPM, metham sodium, Telone C-35	35.8**
Fruit Trees	10	Telone C-35, Dazomet	0
Glasshouse	50	Telone C-35, metam, steam, substrates, dazomet	0
Turf	18	Dazomet	0
TOTAL	**664**		**138.55**

**Not applying for a critical use exemption (CUE)for 2006*

*** Not expected to apply for a 2007 CUE*

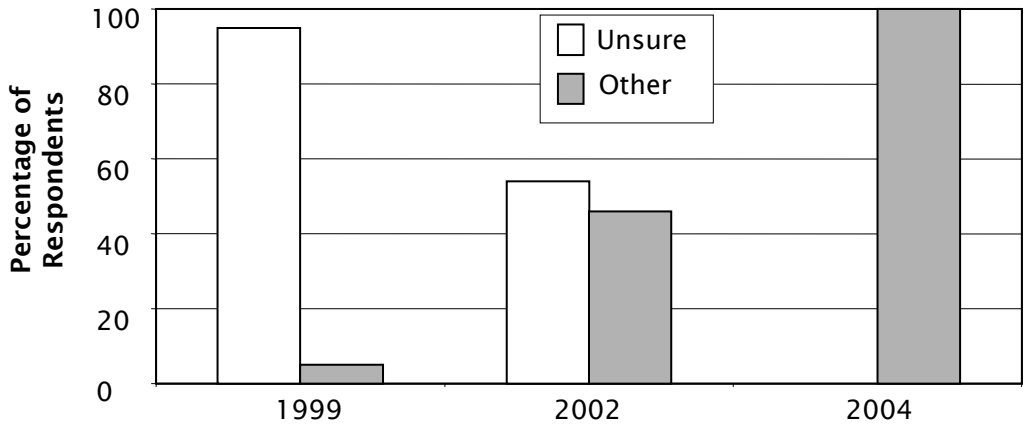

FIGURE 1: Response of members of the Victorian strawberry industry to the question 'How will you disinfest your soils after MB phase-out?'