PERSPECTIVE

On the difficulty of being a 'Weed' ....

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Prelude: Weeds as Grotesque

"...There are no Grotesques in Nature…"
Thomas Browne, Religio Medici, 1642

Native and cultivated plants are protected, both by warrant of their being culturally valued and by virtue of their being a form of life that is culturally remembered for their continuity within a specified landscape – 'that plant has grown here for thousands of years!' (Chandrasena, 2014). On the other hand, a weed is not valued positively at all, or at most, valued only grudgingly. The weed is a cultural 'invader'.

Therefore, the weed has no claim to cultural landscape continuity in any positive sense, either from the point of view of production, or conservation. Indeed, it is often a 'declared pest' and must be killed, usually by poison. As an unwanted visitor to 'our' world, the opportunistic weed is feared and maligned – it gets what it deserves.

To hunt down and kill weeds is, therefore, to avenge culturally on two levels. The weed disrupts our sense of commodified agri-ecological continuity (both the farmers and the ecologists say, 'it is evil'), so the weed must be destroyed for its affront to the interests of those who control culturally 'productive' land. This is understandable and straightforward, but there is something more.

The weed must also be killed because it *represents* something else. Weeds present, or are used strategically to represent, all the unmanageable forces that challenge our known social 'order of things'. Indeed, as the 'war on weeds' rhetoric would have us believe, national security priorities are at stake, and national security demands a compellingly lethal response [1].

But can we kill them all? 'Unwanted plants', that is, weeds, move. It is their nature to 'invade' - to move as pioneers into vacant spaces disturbed and laid bare by our human interventions (Baker, 1965). As such, weeds are *not wild*, as they are not considered to be 'native', and simultaneously, they *are wild*, because they are undomesticated [2].

As a hybrid being neither genuinely wild, nor truly domesticated, the 'weed' is something 'in-between'. As neither a commercially valued domesticated plant, nor a 'naturally' wild plant, the weed is a blended creature.

To understand what the weed represents as a 'blended creature', the literary concept of grotesque realism might give us a hold (cf. Bakhtin, 1968). Grotesque realism is a literary genre in which the proper order of things is challenged or parodied by virtue of being different, primarily through being contrasted with its opposite.

The grotesque form, however, is not just a simple inversion. The grotesque form goes deeper still. Grotesque realism is used to deconstruct and mobilise binary classificatory categories for a *cultural* purpose. Hence, if the purpose of killing weeds is culturally determined, we can also legitimately explore the grotesque mark of the weed. We can then see '*the difficulty of being a weed*' within the socially constructed frameworks that weeds must live within (cf. Fisher, 1996).

In the present context, then, the weed represents our power (or lack of power) to domesticate nature for our mundane purposes. Simultaneously, *the weed represents domestication's disfigurement.* As Figuié, Binot and Caron (2015) put it, "…*the distance between man and [plant] relies on the distance between wild and domestic..."* and, "…*for men to stay men and not to go back to animality, they must contain wild and domestic [plants] at their respective place*…"

If we are right about the above, the internal symbolic separation of 'wild' and 'domesticated' is also an external *biopolitical* separation: a separation that maintains, strengthens, or extends political and economic alliances.

The 'weed', being neither iconic native plant, nor beloved domesticated crop, is, therefore, a plant that can be harnessed by stakeholders to embody the high-status city dweller's self-image of righteousness and benevolence toward nature (exemplified in "the protection of native plants"). The 'weed' can also represent city folk's neglect and disregard of the farmers and agri-businesses that depend on the land for their survival (exemplified in the expression "living off the land") (cf. Fortmann, 1990; Donahue, 2005).

The grotesque bodies of weeds are therefore real, but also symbolic. Weeds are 'pests' that can embody an elites' supposed moral and intellectual superiority and simultaneously embody an ideological counter (or critical) expression of this assumed superiority. As such, the grotesque form 'weed' can function as a botanical critique of the dominant symbolic order. In doing so, the form exposes the disunities that underlie social tensions and contradictions.

In other words, it is the weedy plant's potential to unsettle the culturally determined norms of inclusion, exclusion, and domination that make the management of weeds so vexing to government policymakers, weed scientists, and the public.

None of the above would have mattered much had it not been that what the weed *represents* is used to gain political support amongst those who *commodify* land to serve 'growth' (Daly, 2020). Therefore, hunting the weed down is a way for businesses and politicians to suture a social rupture and encourage our natural capital to be taken to the 'other side' and domesticated for profit. This leads to self-serving admonishments to hunt the 'evil weed' down, or it shall destroy 'us'.

The problem is that 'we' are in fact hunting down something that helps to keep us constituted, so we are in effect at war with ourselves, a profoundly, untenable delusion (Low and Peric, 2011; Dwyer, 2011; Larson, 2005).

Let me try to explain how this works at a community level.

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[1] Consider, for example, Australia's "32 Weeds of National Significance", the secure management of which requires "…coordination among all levels of government, organisations and individuals with weed management responsibilities." (cf. **http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html**)

[2] In an important sense, so-called 'native plants' are domesticated plants because they are cared for and protected, while weeds are not.

Community participation in weed management

To encourage the community to hunt down weeds, governments have traditionally been intensely focused on compliance programmes. In this approach, the government's role is to enforce legislation. Land managers (including private land managers) must take responsibility for eradicating, as far as reasonably possible, noxious, or 'declared' weeds on the land they own or manage.

In the case of weeds, however, a focus upon regulatory enforcement is challenging to implement. Weeds live on both public, and private land, so affected communities commonly refer to weeds as "invading plants". This labelling occurs because weeds that live on somebody else's land only move onto a property through somebody else's inaction or negligence, or they just move in 'naturally' on the wind, so the story goes. Seen from the weed's perspective, however, we might also legitimately ask, as Stengers (2019) has, what makes us "so obviously invasive" in our preoccupation with blaming the plants for the conditions we have created for them to live in?

The usual government policy response to the above problematization is to ignore most of what is problematic about weeds in crafting care for our natural capital, and instead, argue for and support a 'cross-tenure approach' to weed management at 'landscape-scale'. The policy intends to allow local communities to collaborate with government land managers, to address weed issues across all land tenures cooperatively.

Called a "community-led approach", the government's legitimized policy 'infrastructure' (cf. Metzger, Soneryd and Linke, 2017) is designed to enable land management participants to simplify the scope of the weed issue collectively.

The community is then expected to implement the best practice management techniques, and level of intervention and resourcing required to deal with the problem, as defined.

Hunt (2005) described the process in detail:

> *"…The nil-tenure approach highlights the benefit of focusing on the 'common problem' rather than criticizing the efforts of adjoining land managers. The implementation of the simple approach has negated over twenty years of poor relations between private and public land managers … More importantly, it has had a positive impact on the emotional well-being of farmers … who now feel that something positive is being done to address the constant financial and emotional impact of [weeds]. Through this truly consultative process, local land managers have not only taken "ownership" of the issue but have identified and pursued the resources required to successfully implement a local solution. (n.p.)…"*

As noted by Hunt above, a "community-led approach" to weed management aims to allow weed affected communities to 'take ownership' of adverse effects of weeds at a landscape scale. A '*war on weeds*' is declared by the government to encourage community development and participation.

However, what if some property owners want to craft a different story for themselves and do not want to participate in landscape-scale weed control? The result is called 'neighbour-to-neighbour spillovers' (Fenichel, Richards and Shanafelt, 2014). For example, when one farmer uses poisons to manage the ingress of weeds onto her property, this 'pushes' the weeds toward her neighbours' property, who may not use poisons, creating what is known in economics as a 'spillover'. The result is that due to a neighbour's action (or inaction), a bordering neighbour becomes more heavily affected by weeds.

However, the above is a biased view (or, in economic terms, we might say, a 'dominated evaluation'). Another view is that one neighbour values weeds and chooses not to kill them, partially or wholly. For example, some organic cattle farmers value certain weeds for their nutritional content and resistance to drought and varied soil conditions, and do not want herbicides drifting across their paddocks. Thus, the spillover is reversed.

Either way, at the landscape scale, the nil-tenure approach holds that unless *all* land managers regionally coordinate *all* of their weed management practices, weed effects (positive or negative) will only be 'moved on' from one landholder to another. This causes a 'ripple effect' among those involved and those not involved (Ainsley and Kosoy, 2015; Southwell et al., 2013; Allen, 2016).

Note too that the above dynamic also applies to government efforts to kill weeds on government land. Because weeds cannot be eradicated at the landscape scale and have 'no respect' for borders, they circulate or 'spillover' from one area to another. Landscape control almost wholly fails in managing weeds on public land.

According to traditional, rational choice economics, the above spillover effects occur because an individual, disconnected land managers are unable

to make socially optimal decisions. For example, individual landholders may be limited by a lack of information on the benefits of landscape-scale pest management. Stakeholder agencies, too, suffer either from apathy, funding, and resourcing deficiencies compounded by lack of clarity on jurisdictions and when to do what regarding weeds (Harper and Chandrasena, 2018).

The information-related limitations of rational choice economic theory have given rise to an alternative framework called "behavioural economics" (Gsottbauer and van den Bergh 2011). In this new approach, economic decisions incorporate social mechanisms. For example, through communication about spillovers' effects, individual landholders might begin to consider whether it is fair to disregard the needs of their neighbours when choosing what to do, or not do about weeds. They may want to enhance their social standing and feelings of solidarity with the community by supporting community-led action on weed management (cf. Hunt,2005).

Alternatively, they may want to support environmental conservation and not poison their land with herbicides. Similarly, government policy makers will feel neighbour pressure to kill weeds on public land, and 'be a good neighbour', while simultaneously feeling a contradictory pressure to refrain from using polluting poisons in natural or recreational areas.

Irrespective of which economic theory is used, the outcome is that, in a community-led approach, all landholders must agree to participate in weed control, for the 'greater good' which is dictated by a shared, coordinated understanding. In this unique, restricted sense, a community-led approach to weed management is supposed to use the input of the communities affected by weeds to consider different points of view and different ways of managing the situation into a unified system within which there is a shared sense of 'knowing is doing' (Ison, 2008).

In the above manner, a community-led approach generates a *distributed* form of best practice that is adaptive to all the community's diverse needs (Maran, 2015). Government is then positioned to recognise and legitimise these adaptive landscape achievements as an outcome of its "community-led approach", chiefly because the outcome is judged to conform to governments' pre-existing weed policy commitment to community action and community self-regulation.

The above arguments reveal why appraisal of the weed issue is often thought to be 'complex' or 'messy'. In practice, the weed management *system* can only be partially known to its participants because the appraisal of other possible methods of weed management are "closed down" (Stirling, 2008) or sometimes only partially opened. For example, a participant who advocated for weed/human co-existence and tolerance would be seen as a dissident at a meeting convened to explain how herbicides can be used to the best effect. A savvy and non-confrontational person would spare themselves the trouble of their view being automatically rejected and not bother to attend.

Paradoxically, this "closing down" of participation occurs in a process committed to "opening up" participation. Put another way, gains in the visibility of marginalised concerns are seen to involve a loss of legitimacy or standing by the incumbent, dominant interest, and are eschewed (Metzger, Soneryd and Linke, 2017). Similarly, assisting some stakeholders to gain increased influence may lead to a decrease in engagement or participation by others who feel any opening up of appraisal would not be in their interest.

A more balanced community-led approach, on the other hand, would set out to create a plan of action to bring those involved together in an even-handed manner. It would seek to move forward, within a shared understanding of the dynamic nature of the boundary of the issue, making the journey forward something, "more lively, more commercial, more usable, more user friendly, more acceptable, more sustainable"(Latour, 2008, p. 5). It could be all of the above, depending on the full range of government policy and political commitments to which a weed management programme is asked to answer

In the present dominated context, however, the policy commitments are framed very narrowly. The pertinent policy constraints are that weed programmes should aim to achieve *pesticide-based* landscape-scale participation across *all land tenures*. The most powerful stakeholders (government and the agrochemical industry) cooperated to be seen to be working hard to 'kill more weeds'. Indeed, in Australia, a State government has extended this logic to an extreme level and takes the number of 'herbicide treatments' as a key measure of the government's environmental performance (Commissioner for Environmental Sustainability Victoria, 2018).

Under the above conditions, the shared commitment can only be 'common' if the method used to achieve it is dominated and is *lethal for weeds*. If participation is not aligned with lethal chemical control, this interest is marginalised.

Another factor influencing the current weed framing is that government and government stakeholders' primary focus is on pest management methods that can be 'sold' (Morales, 2002). The

development of chemicals (herbicides) that can kill plants is of interest economically. This is again paradoxical because, if we could find a 'market failure' rationale for government intervention, it would be to encourage the economic use of weeds, not lethal poisoning, as the latter techniques presently operate successfully in a market. Simultaneously, the former is belittled by the government as too 'fringe' to attempt to improve. There is no market failure with respect to herbicide-based weed control, so there is no justifying market failure for governments to support such methods financially, indeed, quite the reverse.

Making use of the beneficial aspects of weeds, however, relies mostly on local knowledge and these techniques are currently not well legitimated by national frameworks (Morales 2002, p. 157).

Where traditional or local uses of pioneering species are practised, the techniques are rarely intentionally diffused to other areas. Given this, Morales (2002) recommends that policy makers should encourage and support organisations that recognise farmers who utilise weeds beneficially, document the limitations, and assist farmers to improve on their beneficial uses of the maligned species.

Rationales for community participation

There have been a host of commissions and enquiries into weed programmes over the years all around the world. Each has concluded that previous landscape-scale efforts for weed control have failed *due to a lack of community participation.* Landscape-scale weed control is a policy failure, Allen (2016) argues, as it results in a mosaic of controlled and uncontrolled areas. Indeed, and as argued earlier, efforts directed at landscape control construct *the exact conditions necessary for neighbour-to-neighbour spillovers*.

Allen (2016) also argues that the pest issue needs "reframing" to address the above strategic policy-relevant issue. Allen points out that when pests are framed as a serious *generic* problem, only then are they a landscape-scale problem. However, when a pest issue is framed as one in which the problem is about locally situated pest situations, the issue becomes more narrowly focussed.

This latter alternative framing allows the policy to focus on why *this* particular pest-plant's death is necessary (Steer, 2015). In other words, weed policy, in this alternative framing, can function to *target* where weed management of a specific plant is needed, and why, and can leave aside areas in which there is no weed issue. An example would be in public land areas where weeds are not part of the commodified landscape, provide positive ecosystem services, and can potentially be well-tolerated.

The above alternative framing is essential because it can be used to influence policy options, such as whether to use landscape-scale weed management that draws on community-led action to assist in the management of weeds. As Wesselink et al. (2011) have pointed out, without a clear understanding of why community action is needed, hard-won community-led participation soon loses momentum and support. This occurs mainly when public participation is structured by governments merely to bolster an already decided policy position (that lethal control by poisoning is good for business).

An alternative participatory rationale is what Wesselink et al. (2011) called *substantive.* Within a substantive rationale, the purpose of community-led participation is to involve 'non-experts' who can see issues and ways of doing things that the experts miss. Under this rationale, participants can more or less ignore the central policy directives and introduce ways of moving forward that reframe or re-contextualise policy goals to suit their *particular* purpose(s).

In other words, a substantive rationale for community-led participation incorporates and explores disagreement with the incumbent policy, it works to accommodate compromises, and is *remedial*. As such, its purpose is to address policy-driven shortcomings and *find a cure for the local situation*. This outcome achieves a *horizontally-*broadened and deepened participation by stakeholders, especially in their *local* pest and conservation issues (cf. Stirling, 2008).

Given the above, and as Wesselink et al. (2011) also point out, the solutions that community-led participation methods generate and foster will depend on the *local* contexts and contingencies of the participants, not on the forced imposition of 'best practice' weed control methods by those in power (stakeholder businesses and governments). The operative mode of action is, therefore, *integrative* rather than 'command and control'.

In the above sense, the policy framing is 'local management action', not 'landscape-scale control' driven by vested interests. However, as noted earlier, given that dominant current government policy is that weed control should aim at lethal *landscape-scale control*, it was earlier argued that landscape-scale weed control by community-led action is *sure to fail*. This is because local participants' needs, and

methods are fundamentally different from those of the government for two key reasons.

First, landscape-scale weed control aims primarily to fund pesticide-based control of weeds on public land, not private land. Thus, the constraints on change are very much contingent on government management priorities, which, as argued above, are both dominated by a pesticide focus, and therefore captured and limiting (Moran,2015).

Second, but associated with the first, weed policy is controlled by well-entrenched constituencies with political 'clout', for example, the farming and chemical industry interest lobby. As a consequence of both these factors, local initiatives that make use of the beneficial properties of weeds, or encourage nature to left alone, will appear at best to be mere 'tinkering' at the edges. Such approaches gain little substantive support from central policy makers (cf. Thompson and Warburton, 1985). The difficulty, then, is not whether the *closure* of the current weed policy commitments is good or bad, but rather, whether the present closures are *privileged* and unable to be effectively challenged or changed.

Participation to address capture?

Given the preceding arguments, it would seem that a community-led approach to weed management can *potentially* be used by the government to address programme capture issues and simultaneously foster the social or 'other regarding' side of the weed issue. This potential, however, is limited by political and economic interest capture. As Paavola (2007) has also concluded, the choice to use community-led action should be aimed at addressing political capture and social justice issues, rather than economic efficiency *per se*.

However, and as also noted earlier, this more strategic aim still begs the question: *Whose interests and whose values will be recognised in government-led actions to promote community-led action*? Put the other way around: *Whose interests would a government be willing to reduce or sacrifice to achieve a broadened community-led approach to the generation of public value?*" For example, would a government be willing to weather the push back from the incumbent interests if current funding allocations were changed to favour the protection of natural capital? Indeed, would a government be willing to expose an existing weed programme to an open and transparent public value appraisal?

The above questions are germane here because *any* challenge to the incumbent sectional interest of weed control policies will be seen as a threat and will be vigorously opposed by the present beneficiaries of those policies.

In other words, the real issue to be managed is political and economic, a situation in which power constrains the choices and options available to policymakers to implement changes in weed management that would favour the generation of natural capital. Therefore, the reframing of weed management programme, recognizing social and/or environmental values and natural capital, without also creating excessive oppositional lobbying, is a central issue for consideration in the immediate future.

To achieve the above reform outcomes, the necessary reframing will need to be supported by forward-looking policy commitments supported by government-led technical assistance. As Mitchell, Florin, and Stevenson (2002) have found, technical assistance efforts typically underpin community-led approaches to pest management. They warn, however, that technical assistance systems must strike an important balance.

For example, it would be unreasonable to expect weed stakeholders (present and future) to make individual behaviour changes towards weed prevention, rather than chemical-based management, when such behaviour would, in some crucial respects already discussed, be seen to be counter to a government's landscape-scale, cross-tenure policy approach to weed management. In this situation, information on the beneficial uses of weeds would be quickly disabled by existing generic weed management policy commitments.

Seen from the opposite extreme, in an environmentally literate, community-led approach, new weed management policy commitments must be careful not get 'too far in front' of the communities they wish to build weed prevention capacity within. The community will determine its own (multiple, diverse) needs, and it will have its own (multiple, diverse) technical assistance requirements, based on what the community knows and learns. This is a significant constraint, as pesticide-based control methods have been the central commitment of the most influential and privileged segment of the communities living in weed affected areas for almost two hundred years (Fleming et al., 2014).

What we do know for sure, however, is that, to date, pesticide-based weed control approaches have broadly failed to manage weeds sufficiently to satisfy the affected landholders who hold the biggest vested interest in weed control. Agri-businesses who are locked into technical uses of herbicide to kill unwanted vegetation are, therefore, likely to continue to lobby

and harass governments to do more to support the herbicide-pesticide industry and its forward trajectory with agri-business.

There is, therefore, a substantial 'sunk investment' in herbicidal-based control and the overreach of the technologies used to facilitate it. Consider, for example, Bayer's recent willingness to pay out billions of dollars in cancer claims against glyphosate, rather than change the thinking and techniques that enable chemicals to be used in a perilous manner.

According to traditional economic theory, a 'sunk investment' should have no bearing on decisions regarding future weed management investments, but the analysis here has shown it does. As argued earlier, a landscape-scale, community-led approach is presently framed to address a persistent failure. It admonishes and cajoles the community to do more and to kill enough weeds to create a stable level of biosecurity assurance *for those who benefit from selling herbicides*.

Indeed, even in cases where local management of weeds has been obtained to an acceptable level of control for crucial chemical stakeholders, the management effort often does not end up being a good story. It leads to other environmental issues and difficulties, such as the loss of production, due to soil and groundwater contamination; surface water pollution due to persistent chemical residues; the development of herbicide-resistance in weeds, and a myriad of known and unknown, non-target effects on beneficial microorganisms and other fauna.

The solution to these well-known issues is also captured by the same interests that created these unwanted social, environmental, and economic externalities, most of which affect the poor and what is left of a damaged and polluted environment. The solution to problems caused by the excessive and unwarranted use of chemicals cannot be more of the same.

The 'weed problem' is, therefore, at the core, a human political issue. Politically privileged stakeholders need to loosen their grip on the dominance of lethal, herbicide-based weed control in favour of an evidence-based appraisal of a broader set of plant-based interests, for example, organic farming, land reclamation, weeds as providers of ecosystem services and bio-resources for all animals (Chandrasena, 2014; 2019).

Given the above, a government's role in community-led weed management should not be to dictate to affected communities what the weeds' effects are, nor what the 'best' weed management/eradication techniques are (i.e., 'lethal best practice'), let alone attempt to enforce these herbicide-based control measures at the landscape-scale via inspections and fines. In other words, a 'speaking to' approach to community participation cannot encompass the necessary sense of the other's point of view to reach a steady-state outcome concerning weed management at the landscape-scale (cf. Daly, 2020).

In contrast, a 'listening' approach would assume a need for some receptivity from the government regarding its policy and programme commitments (Bodie and Crick, 2014) [3]. A system strengthening process for community-led weed management that 'listens' would, therefore, need to actively encourage compromise, especially with respect to the beneficial uses of some colonizing species. It would do this by designing in a commitment to encouraging community-led action that sustains natural capital, rather than telling the community how to best contribute to the dominant policy of unjust and environmentally destructive herbicidal weed control.

Finding the right technical assistance balance will also require a 'programme logic' to be developed for setting out what a community-led weed programme expects to achieve and how its successes will be measured. Without these, both community and government may feel over-burdened as they attempt to respond to multiple areas of concern and multiple requests for expertise (Mitchell, et al., 2002, p. 625).

Further, and as noted earlier, community requests for assistance will seem 'polluting' or 'unacceptable' to the current chemical-based weed programmes, that is, unless the dominant policy commitments of the current weed programmes are made amenable to genuine community inputs that would realistically influence policy change.

A community-led approach may mean, for example, that programme support staff will need to actively *encourage* input from the perspectives of those most often presently affected and excluded from weed management decision-making processes, for example, input from organic producers, or input from those who currently use weed prevention methods and do not participate in community weed poisoning. These 'outsider' perspectives will initially be quite challenging to the power of the *status quo* for

[3] Included here would be efforts to 'listen' to the weeds that are being unjustly persecuted simply because they have been listed as 'pest' species.

reasons already noted. However, the theory underpinning a community-led approach holds that such conflict will, on balance, be beneficial, especially if structured and supported by government policy.

The situational reading of present policy processes undertaken here suggests the above may require *re-framing the impossible as possible*. From a pragmatic viewpoint (Kevelson, 1998), whether a possible new way of doing weed management, for example, making use of weeds rather than poisoning them, is impossible is presently determined by reference to existing, chemical-based weed policies. In other words, the appraisal of *what is possible or impossible* is made in respect to what is currently known.

An 'impossible change' is therefore just a euphemism for a lack of trust in the capacity of the community to contribute to the shared task of seeking out and implementing improvements to weed management, especially those methods that seek to protect and enhance natural capital. As argued above, this lack of trust by government is understandable, given the present dominated policy commitments to herbicidal control, and how governments currently respond to any threat to herbicidal priorities.

To achieve the desired revisions, systems thinking practitioners, such as Checkland and Poulter (2006), found that the 'command and control' style of thinking associated with goal-oriented behaviour (such as those that occur under a landscape scale approach to weed management discussed earlier) are largely unhelpful with respect to *dynamic* systems.

Like Allen (2016), Checkland and Poulter (2006) sought a method to re-frame issues of concern, but in a manner that would assist all those involved to move away from goal-oriented, or 'fixed' thinking. Thus, instead of 'herbicide treatment 'goals or 'performance targets', Checkland and Poulter (2006) argued for a move towards thinking in terms of *learning*, for example, learning how to 'live with weeds' (as proposed by Chandrasena, 2014), or by learning how to prevent weeds from affecting farming operations in a manner that complements the sustainable use of natural capital.

The above cannot be achieved by reference to what is currently known, but rather, it can be achieved by learning how the known can be carried forward in new ways, in order to encompass new concerns, bought to the table via community leadership.

However, and as Fox and Murphy (2016) have argued persuasively, when a government agency engages in robust public participation to learn, this interaction will be seen to be placing existing bureaucratic policies and operational systems at risk. Paradoxically, then, and as discussed earlier, government agencies claiming to want to use a community-led approach may only *really* use it if an increase in participation assists the agency to become *more* perfectly inflexible in the longer run. Thus, unless a government's weed programme has a genuine policy commitment to a *transformational* vision for weed management, most of its effort directed at community engagement will be seen to be "mere window dressing" (ibid. p. 218).

In the above sense, then, what is first needed in a community-led approach is an *institutionally* supportive environment that will create the conditions necessary for learning to take place within. This environment will enable a weed programme to learn more and more about the multiple issues people in different situations are wanting to learn more about. This learning will have to occur not only in the terms acceptable to the local participants (Thomas and Warburton, 1985), but more importantly, in terms acceptable to the *system of weed bureaucracy itself* (Fox and Murphy, 2016).

If the additionality of community-led weed management is not made amenable to a government's weed programme itself, the weed programme will instead remain fixed on higher level aims, such as weed 'population control' at 'landscape scale', which, as argued earlier, leads to the allocation of more and more resources and technical support to achieving an aim that is largely "symbolic" (Newig, 2007).

I use symbolic above as, in the face of the persistent historical failure to eradicate weeds, Newig (2007) has argued that there is a tendency for politicians to enact "symbolic legislation". Symbolic legislation, refers to, "laws which despite their often ambitious officially declared objectives are designed to remain ecologically ineffective" (Newig, 2007, p. 277, see also Vasiliy 2020).

In the current view, symbolic policies are designed to deflect attention away from chemical capture and the expansion of agribusiness into larger and larger areas of the environment, furthering the erosion of natural capital that it is mistakenly alleged, 'invasive' weeds are supposed to cause.

Note too that symbolic policy actions are implemented from an *ex ante* positioning – the decision maker *already knows* that the response will fail to address its declared objective, other than symbolically. Put bluntly, the real aim of the herbicidal control of plants is to 'solve' the weed problem from a purely *politically captured* point of view. The political

motivation is a desire to respond effectively and immediately to the urgent needs of an influential constituency, that is, agribusiness.

The implementation of assistance to community-led chemical weed control stakeholders demonstrates a government's genuine desire to be responsive to a community's expressed concerns. The trouble is, as a *symbolic* policy response, herbicidal control of weeds is designed to *manage* a persistent failure rather than *resolve* it (Newig, 2007). A failure to control weeds favours chemically-based land management. It appeases some powerful agribusiness interests and their constituents, at the expense of the broader living environment.

As a codicil to the above claim, then, we should also note the effect of an information asymmetry in relation to herbicidal weed control. Due to a focus on sunk investments in chemical control any effort from a government to find out whether herbicides are truly safe and effective would be seen to be an overly time consuming and prohibitively costly process.

Realising this, and given no other viable option, due to factors already discussed, governments and their chemical regulators generally overlook the ineffectiveness of the policies it puts in place to encourage the herbicidal control of weeds. Why? Herbicides are *designed* to meet an important 'emotional need'; the need to kill something and feel safe, but they will not dissolve the weed 'problem', as what is problematic also involves poisoning life as a means to secure life.

Because herbicides offer a 'quick fix', criticisms of herbicidal methods are also usually easy to deflect on another basis. The issues are complex, and the causal connections between herbicide use and pollution are deliberately kept opaque. There is also 'scientific uncertainty' surrounding the long-term effectiveness of herbicides because there is no effort to create a scientifically informed agreement on their longer-term effects. Indeed, as Newig (2007) argues, the more complex and opaquer a problem issue is, the *more likely* it is to be addressed through symbolic political action.

Based on Newig's (2007) research, symbolic policy responses, such as financial and policy assistance for the community to wage a herbicidal 'war on weeds', are instituted when the following conditions exist:

- A high level of public concern or controversy exists, forming acute, value-laden conflict patterns (e.g., 'rent seeking' behaviours, such as lobbying to benefit agri-chemical interests).
- Addressing the issue substantially would involve high regulatory costs, while at the same time yielding low or no regulatory benefit (in present case, primarily because weeds cannot be 'eradicated' with chemicals).
- There is an asymmetrical distribution of information (e.g., the difficulty of determining the spread of weeds over relatively large areas, abundances and densities).
- There is a high level of issue complexity (e.g., considerations of the overlaps between 'native' vs. 'non-native' or 'introduced' species and colonizing, pioneer plants, and how these species influence the preservation of natural capital).

The above analysis might be interpreted as suggesting that one of the central purposes of a symbolic policy response is deception. The aim of funding a 'war on weeds' might be said to be 'to fool' the public into believing something 'real' is being done, while it is known beforehand that the intervention will not be effective, other than at a symbolic level. While that is a possibility, the issue may go deeper. The present paper follows Newig's thinking and proposes the use of a landscape-scale 'war on weeds' is a *shared* self-deception, which functions to fulfil a *shared* need.

Self-mortifying policy/responses to complexity

While some landholders manage to negotiate their way through the weed policy morass and find satisfaction (mainly by implementing various weed prevention methods), a substantial number of stakeholders are less successful because they follow government (i.e., agribusiness) advice to keep it simple and chemically 'treat' life that is problematic in the dysfunctional sense discussed so far here.

Doerner (1980) has identified several common mistakes that are made by decision-makers when they are dealing with complex systems in this manner. For example, decision-makers commonly give *insufficient consideration to understanding processes in time*. This simplifying tendency, as applied with respect to weeds, is compounded and entrenched in policy by 'rent seeking' behaviours that stress a need for 'immediate action', even though many potential environmental harms that some weeds may cause in specific situations are largely unknown, or may even resolve themselves naturally without any chemical intervention.

Another factor identified by Dorner (1980) is the *tendency to think in causal series rather than in causal nets*. In this situation, there is a tendency to focus on the main effect while surrounding causal factors are ignored, impoverishing the number of options available. As Lourey et al. (2011) found, 'pest management' stakeholders usually have a very high involvement and commitment to their preferred method of pest management. While deciding to commit to a new method, they may consider alternatives, but once committed, there is a considerable 'sunk investment' in the decision, which as already argued, they are reluctant to release. This inhibits consideration of further options or influences, including consideration of whether the 'invested-in' method really works. Alternatively, if the initial assessment identifies any situation that constrains their efforts to manage weeds, this too will remain an inhibiting factor when additional complexity is confronted.

If Dorner's (1980) findings are applied to a weed management policy system, then, it may be possible to better understand the nature of the system. The continued failure of a weed management programme to reduce weed abundance to a level that inhibits further weed infestations suggest a lack of control, which, for the decision-maker, implies that they have no control over weeds.

The loss of control that is implicit to the application of herbicides, therefore, implies fear; a fear of further loss of control, credibility and the consequences that will follow. Thus, the feedback-loop that chemical weed control creates, in turn, weakens a person's feelings of control and safety, creating as Derrida (2001) argued, a kind of "auto-immunity" response in which the protective behaviour destroys its own protection (p. 94). This is doubly unfortunate in the present context, as it suggests that government weed programmes are in effect designed to create feelings of vulnerability and a dependence on goods supplied by the chemical industry.

Promoting generic weed killing is therefore likely to cause stakeholders to experience and express feelings of being at an even *greater* level of risk. Thus, the peripheral conditions that limit the possible success of chemical weed management, such as the rapid development of herbicide resistance in innumerable weeds (Heap, 2019), and changes in the weed floras, are increasingly ignored, and all weed issues are attributed to an over-abundance of 'threatening' weeds, when in fact*, it is the failure of chemical control that is doing the threatening*.

Autoimmunity consequences

Under conditions of failure, then, government weed programmes are in fact creating their own self-defeating conditions that take the form of a general reduction hypothesis: "*the programme would work if only we could kill more weeds*". This degeneration of scope and purpose is natural in an emotional sense, but in a practical sense, it inhibits us and overrides other issues that might be considered important, for example, our environment (cf. Ahmed, 2005).

As a symbolic response to dealing with an overburden of complexity, then, a herbicide-focussed weed programme creates an associated complex of decision-making restrictions, for example, a reduction in the number of alternative methods considered by stakeholders, leading to the further entrenchment of pesticide-based (but ineffective) methods over non-chemical methods.

Or the above failure might lead to a 'fortification' tendency that only considers one option in isolation (cf. Doerner, 1980). Or it might lead to a decomposition of social cohesion into a focus on individual action – a frame within which individuals must face an impending personal catastrophic weed attack alone (Brown and Nettleton, 2017).

The above mechanisms come about because most weed programmes focus on the chemical control of weeds at landscape scale, which leads to a persistent failure, which then leads to the entrenchment and repetition of the same failure, generating more fear.

If the argument made so far is right, land managers are having difficulty dealing with the complexity of their situation. The difficulty of avoiding unpleasant consequences (a failure to deal with weeds) depletes their ability to cope effectively, causing a further depletion in their decision-making resources, leading to even worse decisions being made (cf. Oertig et al., 2013). This process is perhaps best exemplified by farmers who report spending 'all their money and time' on weeds.

As found by Doerner (1980), when the complexity of a situation creates an 'intellectual emergency', a common reaction is to reduce the number of conditions considered. In the case of weed management, the options are effectively reduced to two: participation in government supported herbicidal control, or non-participation and ridicule.

Conclusion

We have argued in this paper that most government landscape-scale weed interventions will continue to under-perform if they do not consider that weeds may, in certain circumstances, provide positive ecosystem services for the planet, not just disservices (Chandrasena, 2014; 2019; Altieri et al, 2015). Therefore, weeds are not plants that should *necessarily* be killed with chemicals (Vaz et al., 2017).

We further suggest that there is an optimal scale of herbicide-based weed management beyond which weed management becomes uneconomic. Killing weeds with chemicals increases social costs and environmental damage faster than it creates production or conservation benefits (cf. Daly, 2020). Based on our reasoned arguments, the time for a change and modified approach is upon us.

Governments are failing to recognise this limitation sufficiently. Consequently, killing weeds with herbicides has itself become a dysfunctional 'growth industry'. Indeed, poisoning life has become big business – even in so-called 'natural' landscapes, the government encourages chemical weed control and commodifies the natural landscape unnecessarily, leading to a depletion of natural capital.

The failure of weed management approaches in Australia, for example, was recently discussed by Harper and Chandrasena (2018). They placed the blame mainly on changing and confusing policy back-flips of various governments, inadequate funding, accountability, and the lack of on-ground, performance-based monitoring regimes.

In contrast, the leading cause of the dislocation in the present view is that governments generally hold the view that the chemical control of plants can *substitute* for the services that plants perform for us. For example, the ways colonising species (weeds) can rejuvenate and replenish areas that have been damaged and laid bare by humans. As such, this paper has argued that weeds are *complementary* to ecological health and, if we attempt to eradicate them with chemicals, the services weeds provide will be needlessly lost, impoverishing our 'stock of natural capital', possibly irreversibly.

In this paper, we critically viewed the above line of thinking through the lens of community participation. The community is generally very keen to do weeding. Indeed, there is currently wide-spread support in the community for 'lethal weed control'. The public is, for the most part, keen to 'kill more weeds'.

However, whether the current, dominant lethal weed policy framing meets our broader *public value* and *environmental* expectations, is uncertain, especially from a policy development perspective.

Our analysis suggests that a dominant government policy that aims to kill enough weeds to obtain '*a reasonable level of landscape control'* is bound to fail. Indeed, we have argued that this doomed lethal objective is inconsistent with, or ignores entirely, locally-led initiatives that more cost-effectively 'manage' any adverse effects of weeds, for example, via a significantly increased emphasis on weed prevention methods, or via the tolerance of some innocuous and beneficial weeds, or even via ecological 'learnings' that aim at achieving weed-human co-existence (e.g., letting weeds grow on field borders to nurture beneficial insects for crop pest control and the provision of other ecosystem services, such as pollination services and soil erosion control).

As Fox and Murphy (2016) have explained, bureaucratic systems have particular virtues. When excesses and deficiencies are identified, an authoritarian system may seek short-term collaboration with a broader set of stakeholders to redress some of the identified imbalances.

What remains to be seen, therefore, is whether there really is any appetite in government circles for 'open' community participation, that is, participation that would generate genuine improvements to weed management, or, whether the call for community-led participation in weed management will remain merely 'symbolic', pursued to satisfy 'emotional' purposes only (cf. Newig, 2007; Hunt, 2005), or more negatively, to aid the interests of the billion-dollar chemical industry.

There are more positive ways forward. Allen (2016), for example, reported that in Australia sheep farmers can organise themselves to protect the welfare of their livestock via pest-prevention measures, such as fencing and guard dogs, rather than via the lethal control of native dingoes. Further, as sheep farmers are quite capable of organising themselves to protect their assets in this manner, there is no 'market failure'; therefore, there is no need for government-led, funded, landscape-scale interventions that aim to kill dingoes at landscape scale. Such efforts are doomed to fail.

Thus, to address the '*difficulty of being a weed*", there may be some hope if government policy aims *not* to achieve a landscape-scale level of herbicide-based weed management, but instead, aims to work with the community to *reduce* the unwanted, effects of weeds at local scale. It will be a bonus if the policy aims to *protect* the community's

sense of well-being and focus on outcomes that can be achieved in a manner that the affected communities understand and will broadly support. Such a policy aim would reveal and celebrate the ways colonising species can also be valued for what they do to support life on this planet.

This is not a new call. Numerous authors have been arguing for recognising biodiversity values and ecosystem services provided by weeds for some time (cf. Hillocks, 1998; Marshall, 2003; Jordan and Vatovec, 2004). Indeed, Chandrasena (2014; 2019) has extended this insight to propose a paradigm of 'living with weeds' as a solution.

As noted in our opening remarks, weeds usually appear somehow 'malformed and grotesque' to us, both physically and conceptually. They blend that which is wild with that which is domesticated. They emerge persistently from the crevices and temporal interstices we create for them in the name of 'growth'. Our point, however, is that their remarkable botanical attributes and ecological capacities, (cf. Baker, 1965), generate 'threshold' situations for us – moments when the factors that cause environmental degradation are for a time reversed. We can take advantage of these moments.

Weeds can turn the plant world on its head and make a genuine dialogue with all that is 'still wild' possible. The overlap of natural and human capital is indeed a clash of worlds, and the result often appears grotesque. Yet, from this weird blend, new value can emerge.

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