Applying SIF3 in practice – what is involved?

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This document is to help people understand what is involved in applying the SIF3 framework in practice. What are we trying to achieve? What steps do we go through and why?

The core aim of SIF3 is to help natural resource management (NRM) investors to achieve the highest value NRM outcomes that are possible with the available resources. We are aiming for more rigorous and systematic decision making about their investments, at the same time making it as easy as possible for them. Our starting point is to identify specific NRM assets, and to base decisions around those assets.

SIF3 consists of two main components:

- *The Public benefits: Private benefits Framework*, which helps identify which policy tool, if any, should be used, depending on the levels of public net benefits and private net benefits resulting from actions undertaken (not limited to salinity).
- *The SIF3 decision tree*, which makes it simple to put the Public: Private Framework into practice. Depending on a set of criteria (e.g. value of the asset, degree of threat to the asset, urgency of the threat, adoptability of land-management changes) the decision tree identifies a recommendation from the Public: Private Framework. Decision tree rules are based on up-to-date salinity research and modelling.

There are some comments later about using this asset-based approach for NRM problems where we have not yet developed a simple decision tree (i.e. beyond salinity).

Steps in the process

The steps in applying SIF3 in a region are as follows.

1. Consult widely within the region to understand local values, tap into local knowledge and learn about the current investment program.
2. Identify potential assets. Starting the process with the assets helps to make the process more efficient, and it prompts us to ask the right questions later in the process.
3. Break them down into "localised" assets (specific things in specific places, that you can point to) and "dispersed" assets (classes of assets that are widely spread, and probably not as highly valuable per hectare as the best of the localised assets).
4. For localised assets, collect the following information:
    - Relative values to the community of the different assets. Practically, they should be grouped into categories such as low, medium, high and very high. Be very selective in choosing assets for your "very high" category.
    - The threat to each asset (level and timing of threat) or possibly an opportunity to improve the asset (level and timing of improvement).
    - Interventions that could be applied (e.g. planting perennials over a certain area).
    - The technical feasibility of achieving NRM outcomes using those interventions.
    - If the interventions involve changes on private land, how adoptable are those changes? Will they be attractive to landholders over a sufficiently large scale?
5. For dispersed assets, collect the following information:
    - The scales of different dispersed assets and an assessment of their importance.

- The areas of those assets that are threatened with degradation, or for which there is an opportunity to improve the asset quality.
- The technical feasibility of reducing degradation or attaining improvements.
- The adoptability of existing land-management options. Will they be attractive to landholders over a sufficiently large scale?
- The feasibility of developing improved, more adoptable technological options.

6. Apply the decision tree for each asset to select an appropriate investment response (e.g. extension, incentives, R&D, engineering, no action).
7. Based on the recommendations of the decision tree, produce a short list of localised assets that appear to be good prospects for investment. Items could be excluded from the short list, for example, because they are not high enough in value, not highly threatened, not physically protectable except at great cost, or because the available management responses are not sufficiently adoptable by relevant land managers.
8. Identify key opportunities for investment in dispersed assets.
9. Conduct feasibility analysis of each of the short-listed investments.
10. Decide on the balance of investment between localised and dispersed assets.
11. Considering the available budget, select particular investments.
12. Identify likely NRM outcomes from these investments. These become targets to use in monitoring and evaluation.

Steps 2 to 8 are designed to quickly reduce the very long list of potential NRM investments down to a strong short list. The list needs to be short enough for detailed feasibility assessment to be practical and affordable. This is important so that we can have confidence that the finally selected investments will really generate worthwhile NRM benefits. The localised assets that end up being funded should be high in value, facing a high NRM threat, with high feasibility of reducing that threat, and high adoptability of the works needed to reduce the threat (or comparable wording if the issue is an opportunity rather than a threat).

Steps 4 and 5 are the most time consuming. The distinction between localised and dispersed assets is particularly important. Assets in the "localised" category have a relatively high value per hectare, so concentrated investment of resources is potentially warranted. This means that actions like engineering, relatively large incentive payments, and perhaps regulation may be justified, depending on other variables like the level of threat, the feasibility of management, and the adoptability of responses. Assets in the "dispersed" category have a relatively low value per hectare, but are present over large areas. To compete with investment in localised assets, investment in dispersed assets must be low cost per hectare, and highly effective. This means that tools like technology development, extension, and perhaps conservation auctions (where there will be pubic benefits) are likely to be more appropriate.

Step 6, selecting the appropriate investment response, is the heart of the framework, and we have worked hard to make sure that it is relatively quick and easy. At least it is for salinity, for which we have developed a decision tree. It would be more difficult for other NRM issues, until we complete our work to broaden SIF3 beyond salinity, creating a new multi-issue framework called INFFER. Other than step 6, the rest of the approach is not specific to salinity, and it could be adopted to tackle other NRM issues. If attempting that, in the short term, in place of the SIF3 decision tree, we'd suggest using expert judgement feeding into the Public:Private Framework. We wouldn't have the same confidence in the results as we do for salinity, but it would certainly be better than not adopting this asset-based approach.

How should the values of the assets be determined?

A reality of public funding for NRM programs is that the available funding is very small compared to the overall scale of the NRM issues we face. This means that we need to be careful in the targeting of investments. There will probably be a small number of outstanding opportunities that should be given priority over the mass of "average" opportunities.

A consequence of this is that great precision in valuing or ranking the assets is usually not needed. We only need to identify the outstanding opportunities. All we really need to know is whether an asset falls into the "very high value" group. Beyond that, its priority will depend on the other criteria (degree of threat, feasibility of protection, etc.). "High value" may be sufficient for a localised asset if it is exceptionally promising on the other criteria.

In our work with regions, our estimation of asset value has involved a combination of:

- assessments by experts from government agencies
- assessments by participants in community workshops
- assessments by staff or committee members of the regional NRM body

We have not done non-market valuation studies (surveys to assess the dollar value of an environmental asset). This could conceivably be done as well, although our judgement is that it is not practical to do so for the large number of assets that need to be assessed.

The framework emphasises the adoptability of on-ground works. This also cannot be assessed very precisely, but needs to be considered carefully as a key driver of the system. We have:

- reviewed the limited existing literature about the farm-level economics of proposed land-management changes in the relevant areas.
- considered the available land-management options in the light of research evidence about the adoptability of different practices.
- observed actual adoption behaviour of land managers, with and without extension and/or small, temporary incentive payments
- talked to local experts.

An additional option could be to conduct a conservation tender, to see how much subsidy landholders require in order to be willing to adopt a certain practice at a certain scale.

Advantages of the approach

The approach produces a high-quality short list of NRM investment options using only existing information.

Detailed assessment is only conducted on items from the short list. For example, we avoid identifying all of the environmental services for all assets. This would be a huge task with a very high level of redundancy, given the budget realities of NRM programs.

The decision-tree framework embeds latest science and modelling and makes it available to all users. They do not each have to discover it and interpret the implications for themselves.

The process is transparent, repeatable and internally consistent.

It requires decision makers to be explicit about their assumptions.

The framework helps environmental managers to prioritise the many knowledge gaps.

It facilitates good integration of the many different sorts of relevant information.

Clear and realistic targets for monitoring and evaluation emerge from the process