Combining the Strengths of INFFER and CAP

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This document outlines two frameworks for setting natural resource management priorities at regional scales: INFFER (Investment Framework for Environmental Resources) and CAP (Conservation Action Planning). In this paper we report on their intended purposes, core strengths and how they can be used together to maximise the benefits of both.

1. Summary

Both INFFER and CAP are essentially asset-based approaches designed to identify regional priorities for action. Both processes work across land tenures and use facilitated workshops that often involve different types of stakeholders to develop a regional database. Both also encourage adaptive management based on measuring progress against specific, time-bound objectives.

INFFER's core strength lies in its ability to prioritise among potentially competing projects in a clear and transparent way, providing a numerical benefit-cost score that clearly indicates overall value-for-money or "return on investment". It provides a user-friendly process both for spatial prioritisation (determining where to invest) and for policy choice (type of action/mechanism best suited to achieve the desired outcomes). INFFER is focussed on identifying the most cost-effective on-ground projects.

CAP's core strength lies in its ability to explicitly consider key ecological processes and attributes that underpin the functioning of core ecosystems as well as identifying and ranking key threats. Hence CAP objectives may be linked to, for example, improving the status of fire and hydrological regimes for a particular ecosystem or they may be linked to abating critical threats associated with one or more systems. CAP provides a rigorous threat assessment process and encourages strategy development based on a detailed situation analysis. Actions often relate to advocacy as well as direct protection and management. CAP is focussed on identifying the full range of actions required to abate critical threats and achieve viable ecosystems, thereby providing a blueprint for a "functional landscape".

The two processes can be highly complementary. For example, CAP tends to identify broad-scale, long-term actions and objectives that often require further spatial prioritisation and analysis to determine initial priorities for on-ground investment. INFFER could easily be used in conjunction with CAP to achieve this prioritisation. As another example, INFFER generally does not explicitly consider ecological processes/ ecosystem health and threats for whole ecosystems at a bioregional scale. CAP could be used in conjunction with INFFER to provide this ecological analysis and develop long-term objectives for improving ecosystem function at broader spatial scales.

2. Overview of each Framework

2.1 **INFFER** (Investment Framework For Environmental Resources)

INFFER is a framework for planning and prioritising public investments in natural resources and the environment. It aims to assist natural resource managers to compare the value of different projects, thereby helping them achieve the best environmental outcomes with the available resources. It is relevant to projects where the aim is to protect or enhance specific identified natural resource assets (places or things of importance – such as particular wetlands, river reaches, biodiversity etc). It assists environmental organisations to identify environmental assets that are good prospects for investment. It starts by applying a simple set of criteria (generally asset value and level of environmental threats) to generate a short list of assets for more detailed analysis. Potential projects targeting these short-listed assets are then evaluated against a specific goal, using additional criteria (including time lags, effectiveness of works, technical risks, adoptability of works, socio-political risks, cost and funding risks). This information is used to calculate a Benefit: Cost Ratio, allowing a standardised comparison of projects. It is designed to be comprehensive in its requirements for information and treatment of alternative policy mechanisms (incentives, extension, regulation, further research, direct intervention, no action), and yet be as simple as possible to use. The aim is that it be accessible to users who are not specialists in sophisticated decision analysis or modelling. Potential users include regional environmental managers, government officers in policy agencies, environmental non-government organisations, and private businesses undertaking environmental projects.

A website (www.inffer.org) covers all aspects of the framework. The seven steps of INFFER are:

Step 1: Prepare a list of significant natural assets that are candidates for investment. At the regional level, the list may include something of the order of 300 significant assets.

Step 2: Using a simplified set of criteria, filter the list of significant assets down to ~20-40 assets.

Step 3: Using the INFFER Project Assessment Form, develop an internally consistent project for each asset on the reduced list. Information required at step 3 includes: asset significance, threats, project goal, works and actions, time lags, effectiveness of works, private adoption of actions, delivery mechanisms and costs. Using this information, apply the Public: Private Benefits Framework to help select policy mechanisms, and **calculate a Benefit: Cost Ratio to be used in project ranking**.

Step 4: Select a short list of priority assets/projects based on the information in the Project Assessment Report and other relevant considerations.

Step 5: Develop investment plans or proposals for external funding (depending on whether INFFER is being used to allocate an internal budget or to develop and assess projects for external funding).

Step 6: Implement those projects that receive funding.

Step 7: Monitor, evaluate and adaptively manage projects.

2.2 CAP (Conservation Action Planning)

CAP is a planning tool for designing, implementing, monitoring and adapting conservation projects. It was developed by The Nature Conservancy, an international NGO based in the USA. The CAP process has been developed over several decades and has been road-tested on hundreds of international conservation projects, including a number of large-scale conservation projects in Australia. CAP has been used by both private and public conservation organisations, often at a catchment or bioregional scale. With CAP the intention is to provide a blueprint for a functional landscape (a landscape in which most or all critical threats are abated and ecosystems are functioning within their range of natural variation). This means that key ecological attributes of ecosystems including fire regimes, hydrological regimes, presence of "keystone" flora and fauna species or interactions, key aspects of structure and composition and various aspects of landscape context are explicitly considered in rating current and desired ecosystem viability. CAP focuses on actions and objectives that are required to achieve long-term success, or the conservation of the vast majority of species occurring in the landscape. CAP is generally applied to identified high-value landscapes considered to be a national or international priority for investment.

CAP offers detailed guidance on completing all steps of the process and also provides sophisticated but user-friendly software to capture and summarise project planning information in a database. The most recent software (Miradi – www.miradi.org) supports the construction of situation analysis diagrams that show relationships between assets, values, threats, opportunities and actions; and "results chains" that make explicit our implicit assumptions about how actions will result in outcomes. The software also enables users to identify strategy effectiveness measures, develop monitoring programs and provides a number of project management features to facilitate adaptive management. A website covers all aspects of the framework (http://conserveonline.org/workspaces/cbdgateway/cap/practices/index_html/view.html). The ten steps associated with CAP are:

1. **Identify people involved in the project**
2. **Define the project scope & focal conservation targets** *(often referred to as assets in Australia). This step employs a hierarchial approach to asset identification. Coarse-scale systems are identified first, then species and communities of special conservation concern are identified as either being "nested" in a broader system or split out as a separate asset.*
3. **Assess viability of focal conservation targets -** *based on key ecological attributes (measurable aspects of size, condition and landscape context). This provides a strong scientific basis for goal setting, using an iterative approach.*
4. **Identify critical threats* -** *based on the type of impact, severity of impact and geographic scope of impact.*
5. **Conduct situation analysis –** *represented as diagrams highlighting contributing factors and opportunities for intervention*
6. **Develop strategies: objectives and actions**
7. **Establish measures –** *identification of strategy effectiveness measures based on results chains (aka causal mapping).*
8. **Develop work plans**
9. **Implement**
10. **Analyse, learn, adapt & share**

*Note: The first four steps of CAP could be used in place of Steps 1 & 2 of INFFER. Steps 5 and 6 of CAP could be replaced by Step 3 of INFFER

3. Comparative Analysis

Process/ step	Key Similarities and Differences
Assets Identification	Both processes enable asset identification across land tenures at different spatial scales. Both are intended to collectively represent the biodiversity of the landscape. Both employ versions of a "coarse-filter fine-filter" approach. However, there are some important differences. INFFER lists all potential assets (often something in the order of 300 for a catchment), typically at the local landscape scale, but including the possibility of defining the entire ecosystem as an asset/project. These assets are the basis for project definition and prioritisation. CAP typically identifying around 8 focal assets which are often broad ecosystems containing many "nested" assets (species and communities) within them. The selection process paves the way for a "whole-of-ecosystem" analysis for the viability assessment and threat assessment process. Hence CAP requires further spatial prioritisation once actions are identified (one action may include several spatially defined on-ground "projects") whereas INFFER does not.
Viability Assessment	CAP undertakes this step for each focal conservation asset, explicitly identifying key ecological attributes, ranking their current status or health and defining the state which represents minimum ecological integrity for a particular attribute or factor. Viability assessments provide the foundation for goal-setting and identification of important research questions in CAP. Viability analysis is not an explicit component of INFFER but may be considered in setting asset goals.
Threat Assessment	INFFER considers threats for assets in a simplified manner at the filtering stage and then in detail at the project assessment stage. CAP undertakes this step for each focal conservation asset across its distribution in the region rather than for each nested asset individually.
Identification of actions/policy mechanisms	INFFER provides guidance on choice of policy mechanism using Public Private Benefits Framework and project assessment criteria. A facilitated situation analysis with diagram representation is used to determine key areas for intervention in CAP, but there is no guidance provided on appropriate policy mechanisms.
Prioritisation of actions/projects	Both frameworks provide a tool for analysing cost-benefit-feasibility of identified actions/projects. INFFER is more quantitative, producing a numerical score. CAP provides a summary rating based on a 4-point scale. Further spatial prioritisation is usually required for on-ground actions identified through CAP, whereas INFFER has already identified priority areas/projects by this stage.
Goal-setting	Both frameworks aim to produce SMART objectives linked to ecological condition or threat status. CAP objectives tend to be broader in scale and more long term because they are attempting to achieve a change in condition across one or more ecosystems throughout their extent. INFFER goals tend to be more modest in scale and based on what is realistic and feasible in the short to medium term, up to a 20 year timeframe. An INFFER goal might be considered as a milestone for a CAP objective in cases where a CAP objective requires the completion of several geographically defined on-ground "projects". Both frameworks emphasise adaptive management and an iterative approach to goal-setting and project development.

3. Recommendations for Using the Processes Together

3.1 Using INFFER to prioritise CAP Actions

As noted above, CAP users often need to undertake further prioritisation of on-ground actions. INFFER is ideally suited for this purpose. It is recommended that CAP users who have completed a first iteration CAP follow the usual seven steps of INFFER, but with the following modifications (highlighted in italic font):

Step 1: Prepare a list of significant natural assets that are candidates for investment.

Identify on-ground CAP actions and associated assets/ecosystems requiring further prioritisation. Break up these assets into spatially-explicit potential projects, based on a) the distribution of key "nested assets"; and/or b) areas deemed to be a priority for threat abatement or viability enhancement works. Refer to INFFER guidelines to assist with this process.

Step 2: Using a simplified set of criteria, filter the list of significant assets down to ~20-40 assets. *This step should be unnecessary unless >40 potential projects have been identified. Refer to INFFER guidelines if needed.*

Step 3: Using the INFFER Project Assessment Form, develop an internally consistent project for each asset on the reduced list. *Work through the usual process (refer to INFFER guidelines) and calculate a Benefit: Cost Ratio to be used in project ranking.*

Step 4: Select a short list of priority assets/projects *based on the information in the INFFER Project Assessment Report and other relevant considerations.*

Step 5-7. Adaptively manage projects selected for implementation.

Users who have yet to commence a CAP could potentially combine the two processes. The CAP approach would be used to determine broad-scale focal assets (ecosystems, communities or species) for the region, and INFFER would be used to determine a comprehensive list of "nested assets", spatially explicit potential projects relating to species and communities that are associated with a particular ecosystem.

3.2 Using CAP with INFFER to develop a "functional landscape plan"

For agencies and organisations using INFFER, it may be desirable to use parts of the CAP process to help develop longer term objectives aimed at achieving full ecosystem functionality for identified high value assets or landscapes. Managers may have invested significant funds already into one particular INFFER project (e.g. high value grassy woodlands area) and wish to determine how much further investment and what additional actions are required to achieve long term viability for this ecosystem across its extent in a particular bioregion. Alternatively, managers may choose to apply the CAP process to one particular ecosystem only (e.g. northern plains grassland community of Victoria) or one particular species (e.g. South-eastern Red-tailed Black Cockatoo), where the intention is to ensure long-term viability. In these situations, CAP steps 3-6 (or just steps 3 and 4) could be used in place of INFFER steps 1 and 2.

Other options for using the CAP process with INFFER include: using Miradi software (see www.miradi.org) to adaptively manage projects identified through INFFER; using situation analysis diagrams to determine other types of actions needed to bring about change (e.g. advocacy strategies) or planning to maintain "intangible" (non-spatially explicit), socioeconomic or cultural assets such as "ecotourism" or "sense of cultural identity". For further information on these options contact Paul Koch (pkoch@gavic.org.au) or visit www.conserveonline.org).