

REPORT OF THE INDEPENDENT COST RECOVERY REVIEW PANEL

**Cost Recovery in Commercial Fisheries Sector
Department of Primary Industries and Regions
(PIRSA)**

Final Report – October 2023

Report prepared for the

Minister for Primary Industries and Regional Development (South Australia)

Final Report prepared by the Independent Cost Recovery Review Panel

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Executive Summary

Marine resources are potential sources of many ecosystem services. Left unmanaged, these resources risk overexploitation and their benefits dissipated. Over time, governments have sought to limit access to these resources through formal arrangements (e.g., licences or catch limits) to protect them from overexploitation, ensure other incidental species are not endangered, are used efficiently and to ensure the community receives social and economic return from those who benefit from that limited access.

In South Australia, the Government has decided to limit access to marine resources through formal arrangements (e.g., licences) to achieve these benefits. Responsibility for their management rests with the Department of Primary Industries and Regions (PIRSA). In 1995, in recognition of the premise that marine resources are owned by the State, the South Australian Government attributed costs of this management across the various sectors under management, and applied cost recovery at varying rates to each sector. PIRSA progressed cost recovery through the early 2000s using a set of PIRSA Fisheries Principles broadly consistent with those outlined by the Productivity Commission Review into cost recovery in 2001. A Cost Recovery Policy was established in 2009 (PIRSA 2020) to enable consistent decision making on the appropriate recovery of costs of fisheries resource management services delivered by PIRSA. This policy, and its predecessors, has been operating for approximately 14 years.

In 2023, an Independent Review of cost recovery arrangements was requested by the current Minister. The Terms of Reference for this Independent Review noted that *'Irrespective of the findings of the [past] independent reviews and the recent improvements in the cost recovery process, there remains significant and increasing challenges with the current process.'*¹

This Review Panel found strong overall support from PIRSA and industry for the conceptual basis of cost recovery and for the broad objectives and principles that are set out in the various policy documents that underpin the use of cost recovery in South Australian fisheries. The Panel identified goodwill on the part of PIRSA, SARDI and industry to positively engage in the Review process with the aim to 'fix' the cost recovery system in fisheries in South Australia.

The Panel supports the continued application of the existing approach to cost recovery in commercial fisheries in South Australia. In considering the way forward, the Panel reviewed the application of this cost recovery model and alternate revenue-raising models (e.g., resource rent, taxation, royalties) applied in other jurisdictions, both in Australia and internationally. The Panel found no alternative model that would be consistent with the overall objectives of cost recovery as set out in both the Australian (Department of Finance 2022) and South Australian cost recovery policy and guidelines and applied in practice in the Commonwealth, New Zealand and South Australia.

However, the Panel considers that implementation of cost recovery in South Australian commercial fisheries has, over time, eroded the confidence of the majority of industry in PIRSA's ability to actively manage the cost recovery process. The Panel received strong messages from both PIRSA and industry that parts of the cost recovery process are 'broken', and that some relationships are fractured supporting the Terms of Reference for the Review which highlighted that there are significant and increasing challenges with the current process.

The Panel identified weaknesses in several aspects of the current cost recovery system that must be addressed to ensure that cost recovery, as applied in South Australian fisheries, delivers outcomes that are consistent with the overall objectives and principles of the PIRSA Cost Recovery Policy.

¹ Terms of Reference, South Australian Commercial Fisheries Cost Recovery Review Independent Cost Recovery Review Panel (Appendix 2)

The Panel is strongly of the view that there needs to be a 'revise and reset process' entered into by industry and government to address these weaknesses. This involves reconsideration of the principles and implementation guidance (revise) and, based on this revision, to recalibrate cost recovery settings and charges (reset).

The Panel's review of theoretical issues (see below) related to cost recovery, cost recovery processes and alternate revenue models in other jurisdictions helped to shape a number of specific recommendations, including that a more structured and transparent approach to determining whom should pay for the cost of particular services and activities needs to be established.

Recommendations

Recommendation 1: The Panel recommends retaining the existing PIRSA Cost Recovery Policy, and hence the activity-based attributable cost model, on the basis of it having a strong theoretical and policy rationale, and the strong support of industry.

Recommendation 2: The Panel recommends a 'revise and reset' process, that:

- addresses the range of issues with existing cost recovery policy, principles and implementation (revises); and,
- based on this revision, recalibrates cost recovery settings and charges (resets).

Recommendation 3: The Panel recommends that the 'revise and reset' process consider creating a fisheries self-insurance fund, levied as a small percentage of GVP to provide a 'safety net' for at-risk fisheries.

Recommendation 4: The Panel recommends the Fisheries and Aquaculture Cost Recovery Framework document be revised and expanded to include a set of negotiated fisheries and aquaculture cost recovery principles, including making explicit that both user pays and risk creator principles are relevant to the recovery of fisheries management costs.

The Fisheries and Aquaculture Cost Recovery Framework document be revised and expanded to include comprehensive guidelines on cost recovery implementation, including, but not limited to, the agreed attribution model and activity costing model.

Recommendation 5: To enhance transparency, the Panel recommends that PIRSA produce a single, annual, whole of agency, cost recovery implementation statement (CRIS) for the PIRSA Fisheries and Aquaculture Budget needs to be developed similar to that created by AFMA (See AFMA 2022-23 CRIS)

This CRIS should set out the proportions attributed to each sector (including the recreational sector in the case of fisheries, and the general public for both fisheries and aquaculture) for the entire PIRSA fisheries and aquaculture cost recovery budget (with supporting rationale from applying the cost recovery policy, principles and guidance developed through the 'revise and reset process')

The CRIS should include the attribution of activities and associated costs to the individual fisheries (with supporting rationale).

Recommendation 6: The Panel recommends an attribution model be developed that enables the structured and transparent attribution of services across beneficiaries and risk creators, and accounts for both administrative and economic efficiency.

Attributions should be revisited every three years and the attribution model be reviewed every five years.

Recommendation 7: Consideration be given to the introduction of a recreational fishing licence with an associated fee that can be used to support management of the fisheries.

Recommendation 8: The 'revise and reset' process should consider the appropriate use of levies and fee-for-service to ensure the mix is consistent with any revised attributions and with the principles of efficient and equitable cost recovery.

Recommendation 9: The revised cost recovery framework should include a clear timetable for regular benchmarking of PIRSA and SARDI activities and costs.

Recommendation 10: The Panel recommends the establishment of an over-seeing 'cost recovery advisory body' charged with responsibility to consider and advise on broader sector-wide cost recovery policy, principles and implementation issues.

The Panel notes the establishment of the new South Australian industry peak body and proposes this group work with PIRSA which may alleviate the requirement to establish another body.

Recommendation 11: A comprehensive cost recovery performance framework be developed and that the recommended revised CRIS (see Recommendation 5) report appropriate outcome, output and input performance measures.

Recommendation 12: The broader attribution of benefits arising from policing and enforcement activities should be further explored as part of the recommended 'revise and reset' process.

Recommendation 13: An independent review/benchmarking of PIRSA's compliance program and costs is undertaken as part of the 'revise and reset' process and that this include:

- Review of the compliance risk model and of the consultative arrangements to determine the risk profile for each fishery
- Assessment of the scope for using external compliance contractors for some more straightforward aspects of compliance (eg weighing product, boundary checking, gear checking, data confirmation)
- Assessment of other jurisdictional approaches to new technological opportunities for compliance delivery
- That, as part of the 'revise and reset' process, this review/benchmarking be paid for by government

Recommendation 14: A review of the PIRSA compliance program and benchmarking of compliance costs is undertaken on a regular basis (3-5 years) and that these activities are cost recovered proportionally across sectors.

Recommendation 15: An independent review of PIRSA's research program and costs as part of the 'revise and reset' process is undertaken.

Recommendation 16: SARDI to produce fully-costed research on a project by project basis for each individual fishery's research program and then apply any State contributions, 'in-kind' contributions, and non-inclusion of overheads to provide full transparency.

Recommendation 17: A review of the SARDI science program and benchmarking of science costs is undertaken on a regular basis (3-5 years) and that these activities be cost recovered proportionally across sectors.

Introduction

Background

The State, on behalf of the community, is responsible for the management of natural resources within their legal jurisdiction. In the case of marine and fisheries resources in South Australia, this responsibility is defined by the *Fisheries Management Act 2007*. This confers responsibility for the management of these resources on the Department of Primary Industries and Regions (PIRSA). The legislation and related policies operate from the premise that South Australia's aquatic resources are owned by the State and managed by PIRSA on behalf of the South Australian community.

The need for management of publicly owned natural resources is well established. Left unmanaged, these resources risk overexploitation and the benefits that they could otherwise generate become dissipated. Part 2, Section 7 of the South Australian *Fisheries Management Act 2007* (the Act) requires that proper conservation and management measures are implemented to protect aquatic resources from overexploitation and ensure aquatic resources are not endangered. The Act also requires aquatic resources to be managed in an efficient and cost-effective manner and that targets are set for the recovery of management costs. Over time, governments have sought to limit access to these resources through formal arrangements (e.g., licence) to ensure these requirements of the Act are met.

Different forms of revenue are raised by governments as part of allowing access to natural resources. These revenue raising activities take into account a range of factors including exclusivity of the access, renewability of the resource (or not), costs of management services supplied by government, direct benefits to a particular sector and any community benefits arising from managing the commercial access to that resource. Revenue raising mechanisms can include (but are not limited to) taxes, royalties, or other charges dependent on government policy of the managing jurisdiction.

The South Australian Government introduced a Cost Recovery Policy in 2009 (PIRSA 2020) to enable consistent decision making on the appropriate recovery of costs of services delivered by the Department of Primary Industries and Regions (PIRSA) across the portfolio, including commercial fisheries managed by PIRSA. The cost recovery policy is consistent with the Australian Government Cost Recovery Guidelines (Department of Finance 2022) and, with its predecessors, has been operating for approximately 14 years.

Under the policy, any costs associated with government services that arise as a direct result of commercial fisheries' access to the resources are recovered partly from licence holders through regulated licence fees. Services for which costs are recovered include, but are not limited to, general management, policy, scientific monitoring and stock assessment, compliance and licensing. For some sectors, such as recreational fishing, the attributed costs are not recovered from resource users by government through a regulated licence fee but are paid for out of government appropriation.

A review process, included when establishing the PIRSA cost recovery policy in 2009, is undertaken on a five-year cycle with the aim of ensuring best practice arrangements are maintained. The cost recovery process has been independently reviewed in each of 2009, 2015 and 2018. These reviews have typically focused on the existing system of cost recovery making incremental improvements to, or streamlining, the process or mechanics of the system rather than its inherent economic logic and the appropriateness of the model itself.

Irrespective of the findings of these past independent reviews, and the recent improvements in the cost recovery process, the Government is of the view that there remains significant and increasing challenges with the current process. In March 2022, the South Australian

Minister for Primary Industries and Regional Development announced the Government's election commitment to undertake an independent review of the current commercial fisheries cost recovery policy/model to ensure it is sustainable and appropriate.

Establishing an Independent Review of Cost Recovery

In January 2023, the Minister established an Independent Cost Recovery Review Panel (ICRRP) to review PIRSA's current cost recovery arrangements in the commercial fisheries to ensure there is an objective process to provide advice to government.

The Panel was to report directly to the Minister.

The purpose of the Review is to provide advice to the Minister on the most appropriate, fair and equitable cost recovery arrangements for the commercial fisheries sector in South Australia.

The Panel comprised members with expertise in fisheries economics, management and commercial business practices:

- Brett McCallum (Chair) - fisheries management and commercial business expertise
- Dr Sarah Jennings - fisheries economics expertise
- Dr Sean Pascoe - fisheries economics expertise

Biographies of the Panel members can be found at [Appendix 1](#).

The Minister drafted Terms of Reference for the Review and circulated these to stakeholders for comment. As a result of responses received the Minister released Terms of Reference in early February 2023 for the commercial fisheries (including the charter sector).

The Panel was to:

- Consider existing government cost recovery policies in commercial fisheries in South Australia and review the current economic logic, consistency and transparency of the current cost recovery policy framework paying particular attention to the different resources involved and varying risk levels:
- Consider previous cost recovery review reports for commercial fisheries in South Australia:
- Consider alternative cost recovery processes and policies applied in other Australian jurisdictions and internationally to the commercial fisheries sector that are fair and equitable and assess these against current arrangements in South Australia:
- Invite submissions from the commercial fisheries sector, other interested stakeholders, PIRSA and other relevant government agencies: and,
- Consider any other matters considered relevant by the Panel or the Minister.

A copy of the full Terms of Reference can be found in [Appendix 2](#).

Independent Panel Process

The ICRRP utilised the following process when undertaking its functions:

1. A review of background information provided by PIRSA, SARDI, other commercial fishery management jurisdictions, stakeholders and other reference material as sought including but not limited to:
 - FRDC Project – Informing the structural reform process of South Australia’s Marine Scale Fishery – J.Smart, M.Steer et al (2022)
 - PIRSA Cost Recovery Policy (May 2020)
 - PIRSA Fisheries and Aquaculture Cost Recovery Framework (May 2022)
 - Previous independent reviews of the South Australian Fisheries Cost Recovery Policy - 2009, 2015, 2018 and the Government responses to the reviews
 - SG Heilbron Report (in-confidence) – Fisheries review (2023)
 - SG Heilbron Report (in-confidence) – Aquaculture review (2023)
 - PIRSA cost recovery implementation statements for all fisheries – PIRSA website
 - Cost Recovery in South Australia Commercial Fisheries – Fisheries Management Paper No. 7 (D.Hall, October 1995)
 - Cost Recovery Policy Discussion Paper (May 2002) – Cabinet paper prepared by PIRSA Aquaculture
 - Cost recovery and other revenue arrangements for fisheries and aquaculture management jurisdictions including New Zealand, Australian Fisheries Management Authority (Commonwealth fisheries), Tasmania, Victoria, Western Australia, USA and Canada.
 - Documentation supplied by PIRSA / SARDI outlining fisheries legislation and regulations, policy documentation, current management approach, activity cost attribution system, performance measures, compliance risk profiles, compliance reports, production figures, management objectives for each fishery, research costs, consultation arrangements and co-management.
 - Documentation provided by stakeholder groups.
2. Individual licensed fishers, fishery sector industry associations and other stakeholders were provided the opportunity to submit written submissions against the approved Terms of Reference.²
 - The ICRRP wrote to all South Australian licenced commercial fishermen on 10th February 2023 using the registered mailing list from PIRSA. The letter introduced the Panel and invited written submissions by close of business Tuesday, 7th March 2023.
 - The ICRRP wrote to all South Australian wild-catch commercial fishing industry associations on 10th February 2023 inviting written submissions by close of business Tuesday, 7th March 2023.
 - A total of 25 written submissions were received of which 12 were from wild-catch commercial fishing industry associations. Thirteen written submissions were received from individual licence holders or other stakeholders.
3. Face-to-face consultation was held with nominated representatives of each wild-catch commercial fishery sector industry association in a group meeting:
 - In the letter of 10th February 2023 to wild-catch commercial fishing industry associations the ICRRP invited two representatives from each association to meet with the Panel in Adelaide on 16th March 2023.

² Note: The information that was provided by each organisation has been held in confidence and discarded when no longer required by the ICRRP.

- A total of 12 wild-catch commercial fishing industry associations attended the meeting held 16th March 2023.
4. Face-to-face and online consultation was held with nominated representatives of wild-catch commercial fishing industry associations in individual meetings upon request:
 - In the letter of 10th February 2023 to the wild-catch commercial fishing industry associations the ICRRP also provided the opportunity to meet the Panel individually on request.
 - A total of 14 wild-catch commercial fishing industry associations requested to meet individually with the Panel. Meetings were held on the 15th and 16th March 2023.
Note: A summary of issues raised from Commercial Fisheries Stakeholder submissions and consultations can be found in Appendix 3
 5. Face-to-face and online consultation with PIRSA, SARDI, representatives from other commercial fishery management jurisdictions, academia and others as determined by the ICRRP.
 6. A request for additional data as required was made by the ICRRP to government agencies, stakeholders, academia and others as determined by the ICRRP subsequent to consultations.
 7. Preparation of the Final Report and submission to the Minister for Primary Industries and Regional Development.

The theoretical basis for cost recovery

Fisheries management is not costless, and who should pay for these costs, and how much, is an ongoing discussion in many countries. Some, or all, of fisheries management costs are recovered from the industry in several countries, including Australia, New Zealand, Canada, the United States, Iceland and Namibia (Arnason et al. 2000; McDonald et al. 2016), and has recently been proposed for Scottish fisheries (Carpenter and Millar 2018) and Forum Fisheries Agency Member States (i.e., Pacific Islands) (MRAG Asia Pacific 2018).

The purpose in this section is to review the key drivers of cost recovery and the potential distribution of benefits deriving from fisheries management that may influence how management costs are recovered.

The policy environment

The principles underlying the appropriate approach to the recovery of the costs of managing fisheries (and other sectors) derives from a broader set of policy guidelines. Cost recovery policy generally starts with a rationale for why costs should be recovered and higher-level objectives of the cost recovery process. Four general themes consistently emerge from the review of the key principles of cost recovery policies in other jurisdictions:

- Equity;
- Efficiency;
- Transparency; and
- Accountability.

Additional considerations are also often embodied in different jurisdictional policies.

For example, the Australian Government Cost Recovery Guidelines (Department of Finance 2022) identify four key reasons to recover costs of government service provision:

- promote equity, whereby the recipients [beneficiaries] of a government activity, rather than the general public, bear its costs;
- influence demand for government activities;
- improve the efficiency, productivity and responsiveness of government activities and accountability for those activities; and,
- increase cost consciousness for all stakeholders by raising awareness of how much a government activity costs.

The aim of the Commonwealth cost recovery policy is to promote consistent, transparent and accountable charging for government activities and supports the proper use of public resources (Department of Finance 2022).

How cost recovery is to be undertaken is also a policy consideration. For example, the Ministry for Primary Industries (2018), in their review of the New Zealand cost recovery system, identified four key desirable characteristics of a cost recovery system, namely that the system should be:

- Equitable – that is each group contribute to the costs in the proportion that they benefit or contribute to the risk (i.e., no cross subsidisation);
- Efficient – the process of cost recovery should not itself be costly to manage and implement, nor add to the cost burden of industry more than required to achieve the management objectives;
- Justifiable – the costs being recovered should be necessary in order to achieve the objectives of management; and,

- Transparent – the management costs, and the process of their attribution and allocation should be readily understandable by all parties.

These also largely align with the Australian Government Cost Recovery Guidelines (Department of Finance 2022) as noted above.

These cost recovery principles are not necessarily mutually exclusive. For example, transparency requires each management activity to be identified as to its cost as well as establish its justifiability. Central to the efficiency and justifiability criteria is the need to relate the management action to the management objectives. This, in turn, requires management objectives to be clearly identified for each of the fisheries, identifying ecological, economic and social objectives. Management objectives may be broader than identifying target levels of biomass in the fishery, and could, for example, consider broader governmental regional development objectives (e.g., maintain support for regional communities) or support for developing industries. These objectives will also help identify the key beneficiaries of management.

User pays and risk creator principles

Consistent with the above policy principles, the concept of cost recovery in fisheries derives from the principle that the beneficiaries of government services should meet the costs of those services in accordance with the concepts of *user pays* (Cox 2000) and/or *risk creator pays* (Harte 2007). In the case of the latter, the rationale is that in the absence of a fishery, there would be no need for management to ensure sustainability, and hence the fishery is the creator of the risk and subsequently should internalise the costs of its management. In contrast, the user pays principle suggests that the costs of management paid by the fishery should be proportional to the benefits received.

In Australian fisheries management, these two concepts have largely been conflated. As a result, in jurisdictions where costs are recovered, the commercial fishing industry generally pays for (much of the) costs considered to be directly related to its existence, while the government pays for activities that may benefit the broader community (Cox 2000). Identifying the appropriate proportion of the costs that relate to benefits to the broader community, however, is becoming increasingly difficult as managers are faced with an increasingly diverse and complex set of social, cultural and environmental objectives (Harte 2007). Incorporating social considerations into management may result in actions, (e.g., net-free areas) that are not of benefit to the commercial fishing industry and may even reduce the efficiency of the industry. Identifying clear and explicit objectives of fisheries management and their relative importance is essential to identifying key beneficiaries and their expected share of benefits as cost recovery requires.

Linking management actions to management objectives is necessary to determine if the user pays or risk creator pays principle should apply to cost recovery. For example, a management action related to a conservation objective that is only necessary due to the way in which the fishery operates (e.g., increased need for observers or the requirement for electronic monitoring to monitor threatened, endangered or protected species interactions) may be considered a “risk creator” action, and hence it is reasonable for the industry to pay the costs of this specific action. Management actions related to the sustainability of the targeted resource, however, are aimed at a broader set of objectives with multiple beneficiaries.

Potential benefits and unanticipated consequences of cost recovery

Cost recovery is assumed to lead to improved efficiency in management. Paying the costs of management motivates fishers to demand cost effective management and stronger property rights, and hence incentives for managers to adopt cost effective management (Kaufmann and Geen 1997). In the absence of cost recovery, there may be an otherwise tendency to

inflate management services and information/monitoring data collection that may not be economically justifiable.

How cost recovery is applied may change these incentives and hence a divergence between fishery objectives and implemented management options. The *risk creator pays* argument is that these management costs would not be required if the fishing industry was not there, so the industry should pay the costs of management. The *user pays* argument is that these costs should be paid in proportion to the benefits received. Both principles can be applied at various scales to attribute costs to specific fisheries, groups of fishers or individuals, noting that it might not be efficient to recover cost at this level.

Getting this balance right is important. For example, if industry has full control over the direction of management, the focus is likely to be fully on improving their economic outcomes. This may be at the expense of other social benefits or environmental impacts that may be otherwise realised. Conversely, if the community (via government) paid the full costs (or a disproportionate share), there is a risk that management services would be overinflated and not aligned to the needs of the industry. Where a fishery's management objectives aim to get this balance right, the community should also contribute to management costs. As noted above, clear and explicit management objectives and their relative importance need to be established against which any management plan or action can be assessed, and beneficiaries identified.

What proportion of management benefits accrue to commercial fishers?

Under the user pays concept, the key consideration as to the proportion of costs that fishers should be required to pay is the share of total benefits accruing to fishers. Earlier studies on the beneficiaries of fisheries management (Haynes et al. 1986) considered only the relative share of benefits between consumers and fishers. Haynes et al. (1986) argued that the demand for fish products in Australia is highly elastic³, and hence most, if not all, of the benefit of fisheries management accrues to fishers.

More recent empirical analyses suggest that, even with moderate to highly inflexible prices, consumer benefits from improving catches can be substantial. For example, Pascoe et al. (2018) found that implementing management that ignores consumer benefits could result in a loss of these benefits (measured as consumer surplus) of between five and 10 percent of the level of fishery profits (i.e., the benefits to the fishers). Based on price flexibilities for domestically landed fish and prawn species in other States, consumers may receive between 30% to 50% of the total benefits generated through management (see [Appendix 4](#)).

Haynes et al. (1986) also recognised the potential for other non-market benefits from fisheries management. Studies on the social licence to operate have established that Australian communities want sustainable fisheries for the community benefits they also generate (e.g., Cullen-Knox et al. 2017; Kelly et al. 2017), while studies elsewhere have established that the interconnection between healthy fisheries and healthy communities provides social and cultural value (e.g., MacDonald et al. 2015).

This value also manifests itself as the willingness to pay for locally produced seafood from sustainable fisheries (e.g., Fonner and Sylvia 2015; McClenachan et al. 2016). Pascoe et al. (2023a) estimated that Queensland consumers were willing to pay on average an additional 12% of the market price of fish to ensure it is harvested sustainably, and between 7% and 15% more if it is produced "locally", with the higher level observed in coastal communities with

³ Price elasticity is a measure of the percentage change in quantity demanded given a 1% change in price. A related concept is price flexibility, which is the percentage change in market price given a 1% change in quantity landed. Demand is said to be elastic if the elasticity has a value greater than one. Perfectly elastic demand has an elasticity of infinity. As there is an inverse relationship between price elasticity and price flexibility, perfectly elastic demand corresponds to perfectly inflexible (i.e., constant) prices.

a closer relationship to the fishing industry. In the case of the latter result, Paredes et al. (2021) found that a key driver of the additional value of “local” seafood was the desire to support local industries.

While similar studies have not been undertaken in South Australia, based on these other studies, it may be reasonable to assume that for commercial fisheries supplying the domestic market that are managed sustainably, benefits to consumers and the community may amount to between 19% and 27% of the value of output, with the higher value accruing in more isolated coastal communities. For export-oriented fisheries that do not supply the domestic market (and hence do not produce consumer benefits), their sustainable management may still generate around 12% of the value of output as non-market benefits to the broader community. These benefits are substantially greater than those initially envisaged by Haynes et al. (1986).

The existence of commercial fisheries in a coastal region has other benefits. In particular, the ability to eat local seafood and see the fleet that caught it, has benefits to the tourism sector. Pascoe et al. (2023b) found that the commercial fishing industry was directly responsible for, coincidentally, between 19% and 27% of the number of day visits to a coastal town by tourists. This also produced benefits to both tourists (through the non-market value of the experience) and the local community via tourism expenditure that exceeded the value of the local catch more than threefold (Pascoe et al. 2023b).

Multiple studies have identified the regional economic impact of fishing (both commercial and recreational) through flow-on effects related to their purchase of inputs from local suppliers. For example, BDO EconSearch (2022) estimated that the indirect impact of commercial fishing on the South Australian State and regional economies in 2020-21 may be greater than the gross value of landed product. Similarly, processors, wholesalers and retailers have also been identified as potential beneficiaries as, without the fishery, they would not have a key input into their business. BDO EconSearch (2022) estimated that “downstream” impacts (i.e., processors, wholesalers and retailers) related to commercial fishing in South Australia may be roughly half that of the direct value of commercial fishing.

The extent to which these benefits need to be considered from a cost recovery perspective, however, again depends on the objectives of fisheries management. If an explicit objective of management is to, say, maintain or enhance regional economic activity, then these benefits may be considered an explicit outcome of the management activity and hence there is an argument that, as beneficiaries, these communities should also contribute to the costs of this management. Recovery of these costs, however, is problematic as individual beneficiaries are difficult to identify. In this case, an argument may be made for additional government support to cover this cost share. However, if there is no specific objective relating to these outcomes, then these benefits arise as a positive externality associated with the fishing activity and should not form part of the cost recovery considerations.

Similarly, tourism benefits are also likely to be a positive externality in the absence of any specific fisheries management objective to support this sector.

What about recreational fisheries?

Commercial fisheries management also has direct and indirect benefits to recreational fisheries. Provision of recreational fishing opportunities – an ecosystem service – is a key function of the marine environment. Fisheries management contributes to this by ensuring the sustainability of the resource, as well as, in many cases, providing a nominal allocation of the resource to recreational fishers. Given the common pool nature of the resource, management actions affecting the operation of commercial fisheries also indirectly affect the value of recreational fishing and vice versa.

Equity requires that the principles of cost recovery be applied equally to all users of the fisheries resource. Ensuring equity between sectors, as well as within sectors, requires the

beneficiaries of a government activity and risk creators to be identified as the basis for the attribution of costs. This process can increase consciousness for all stakeholders by raising awareness of how much a government activity costs.

The benefits of effective fisheries management to recreational fisheries can be substantial. Recreational fishing has been long recognised as providing non-market benefits (that is, benefits that do not have a readily observable monetary value) to recreational fishers. These benefits can be substantial, with estimates of these values ranging from \$150 per person per trip to over \$1000 per person per trip (Pascoe 2019). These values derive from the recreational fishing experience, and are not necessarily associated with the quantity of catch (Arlinghaus et al. 2019). However, the total value of these benefits is related to the level of access, which directly impacts the number of participants, and in many cases, the likelihood of catching a fish which may also impact participation rates at the margin.

Recreational fishing has also been associated with improving mental and physical health (Hunt and McManus 2016; Young et al. 2016; Griffiths et al. 2017; Moore et al. 2023). While the economic value of this to the fisher is likely captured in the experiential non-market values, others have suggested that these benefits may lead to reduced pressure on public health systems (Pita et al. 2022), providing broader societal benefits.

With the possible exception of public health savings, if any, the main beneficiaries of recreational fishing are the recreational fishers themselves. This is a (potentially) identifiable group of individuals. With only 23% of the South Australian population believed to participate in recreational fishing (Beckmann et al. 2023), they cannot be considered to be the “general public”.

Several states have implemented some form of licencing system that allows these individuals to be readily identified for the purpose of conducting surveys and monitoring catches, as well as raising revenue to support fisheries management and research. As with commercial fishing, recreational fishing has also been associated with the generation of regional economic activity through expenditure in the local region (e.g., Moore et al. 2023). However, as with commercial fishing, unless there is a specific management objective associated with supporting regional economies (or reducing health expenditure), then these additional benefits may be considered as positive externalities of management supporting the recreational activities.

Identifying the share of benefits for the purpose of cost attribution, however, is not straightforward. Although both ecosystem services,⁴ comparing recreational non-market benefits with commercial benefits is not appropriate as the former generally relates to the consumption of an experience and the latter to the use of a natural resource. Attempts at estimating the non-market value of the resource to recreational fishers has been limited (Coglan et al. 2021). As a consequence, assigning appropriate proportions of costs to the commercial and recreational sector based on their relative values is not appropriate. In this case, a second-best approach may be to base cost attribution on the nominal share of the species caught. This, in turn, requires a formal (if not notional) allocation of catch between the sectors.

What about policy development?

Fisheries management plans are usually underpinned by government policy and legislation, which determines higher level objectives as to how the marine resources are to be used. These largely embody the community’s expectations about the use of their resources and may prescribe who can access the resource (e.g., commercial fishers), the conditions under which access is allowed (e.g., licences and associated fees/charges) and overarching objectives

⁴ The recreational experiences are a cultural ecosystem service, while the provision of fish for fisheries production is a provisioning ecosystem service.

reflecting social values (e.g., sustainability). In this regard, the sustainability and other objectives subsequently imposed on management reflect the broader values of society.

As such, the main beneficiaries of policy are the general community, and the costs of such policy development should be borne by the general community.

Compliance and enforcement costs – user pays or risk creator approaches?

The cost of compliance and enforcement is often a major cost of fisheries management. The classic model of compliance assumes that the level of compliance is determined by a combination of the risk of detection (e.g., through random inspection) and the penalty if caught (Stigler 1970), and there is some evidence to support this model in relation to compliance with environmental regulations (Gray and Shimshack 2011). Heyes (2000) suggest that this model, however, creates additional incentives for individuals to avoid detection, provided that the cost of the avoidance activities is less than the expected cost associated with detection. Other fisheries-focused studies have found that perceived legitimacy of the regulation and social norms also influence the decision of individuals to comply with fisheries regulations (Hatcher et al. 2000). Given this, compliance does not necessarily correspond with the level of enforcement activities.

There is literature on compliance and enforcement of environmental regulation that assumes that government is responsible for these costs, and the emphasis is on developing systems that ensure compliance that minimises these costs (Stigler 1970; Heyes 2000; Gray and Shimshack 2011). However, McDonald et al. (2016) argue that recovering enforcement costs from fishing industries not only increases the financial resources available for enforcement, but reduces the burden of cost to non-benefitting community members and creates incentives for fishers to demand efficiency in the enforcement services they are funding. Reconciling these different views hinges on the objectives of compliance cost recovery, the objectives of management, and the extent to which society values the public good element of the rule of law. Cost recovery of fisheries enforcement costs has been applied in several countries, including parts of Australia, the United States, New Zealand, Iceland, and Canada (McDonald et al. 2016).

Under a user-pays (or beneficiary pays) approach, compliance and enforcement costs are difficult to allocate. The aim of enforcement is to ensure that the objectives of management are achieved by ensuring that the regulations imposed to achieve these objectives are complied with. From a beneficiary pays perspective, effective management provides benefits to a wide number of users, including both commercial and recreational fishers (who benefit by ensuring their access to sustainable fish stocks), consumers (who benefit from a sustainable supply of seafood) and the general public (who benefit by ensuring that their resource is protected and economic objectives realised). In quota fisheries, individual quota holders also benefit by maintaining the value of the property right, which may otherwise be eroded through non-compliance (Hatcher 2005). For other fisheries, enforcement maintains the value of their licence for the same reason. Maintaining the “rule of law” in the sector as a whole provides benefits to all fishers though instilling confidence that property rights are protected, even in the fisheries where enforcement activities may not be directly applied, while the broader community has confidence that their resource is used appropriately and sustainably. In this regard, enforcement has many public good attributes, as the results of efficient enforcement are non-rivalrous (benefits received by one group of stakeholders does not diminish the benefits received by others) and non-exclusive (different stakeholders cannot be excluded from receiving the benefits).

From a risk-creator perspective, the decision to not comply is generally made at the level of the individual operator and is not a fishery or sectoral-level decision. However, as noted above, non-compliance may arise through perceived legitimacy of the regulation and social norms, which in turn may be affected by the relationship between the management agency and the industry, and systemic non-compliance may be a reflection of problems with the management

process rather than an inherent tendency for fishers (commercial or recreational) to break the rules.⁵ In such cases, improved compliance may be achieved through means other than increased random inspections, such as greater stakeholder engagement in the development of management plans (Greiner et al. 2000) (a perceived benefit of cost recovery), or the use of “nudges” (Mackay et al. 2018).

Activity based cost allocation (i.e., number of inspections in a fishery or days on the beat) do not reflect the broader set of beneficiaries of compliance, which extend beyond the fishery being inspected. Risk-based inspections may improve the efficiency of the enforcement activity in terms of detection rates, and individuals caught infringing the rules are sanctioned directly. Effective enforcement activities in one fishery, however, may also encourage greater compliance in others, again resulting in benefits beyond the targeted fishery.

Given the public good nature of compliance and the associated difficulty in attributing benefits of compliance activities to particular groups and the individual, rather than the sectoral nature of risk creation, there are arguments supporting the spreading of compliance costs across a broader group of stakeholders. At the Commonwealth level, AFMA does not include domestic compliance costs in the set of recoverable costs (AFMA 2023). In other jurisdictions (e.g., Queensland), compliance costs are allocated across all sectors (commercial, recreational, charter and Indigenous) in each fishery based on their allocated share of resource (Webley and Probst 2020) rather than directed compliance activity levels (i.e., focusing on either commercial or recreational fishers).

Beneficiaries of fisheries research

While research related to supporting management primarily benefits those in the fishing industry (commercial and recreational), the research also may have direct use outside the fishing industry.

Fisheries related research is generally considered a public good as, once undertaken, the results are non-rivalrous (i.e., use by one group does not diminish its availability for use by another group) and non-excludable (i.e., the results are available for all potential users to use). For instance, ecological research and fish stock assessment may be of interest to other biological researchers, conservationists and local environmental groups (Arnason 2000). It may also be of benefit to other government management agencies (e.g., those responsible for the management of marine parks, offshore energy, oil and gas and threatened species); the energy sector (e.g., oil and gas, renewable energy); ports and shipping; and regional development groups responsible for coastal development.

Given the benefits communities receive by i) having a fishing industry and ii) ensuring it is operating sustainably, research directed at ensuring these is also of direct benefit to the broader community.

Given the public good nature of research there is an argument, then, that the public, via government, should also contribute to research directly supporting fisheries management. While these other uses of the research could also be considered positive externalities, Squires et al. (2014) notes that failure to recognise the public good nature of fisheries research may result in its undersupply, justifying the use of public subsidy. This is largely recognised in Australia through the funding of research via the Fisheries Research and Development Corporation (FRDC), to which the commercial fishing industry contributes 0.25% of their average Gross Value of Production (GVP) and the Australian Government contributes a matching 0.25%GVP plus a further 0.5% of the average GVP to recognise the public good benefit in RD&E in fisheries. While these funds are not used for tactical research purposes (e.g., routine stock assessments), which are primarily jurisdictional responsibility, such

⁵ Similar issues involving systematic non-compliance have also been seen elsewhere (Salmon et al. 2013; Gebhardt 2020).

projects may also exhibit public good characteristics as identified above. In South Australia there are FRDC funded Industry Partnership Agreements across several major fisheries where industry contributions (0.25%GVP) are matched by the Australian Government (0.25%GVP). The IPA funding arrangements do not automatically receive a portion of the additional 0.5%GVP public good funding provided by the Australian Government but this is available for collaborative RD&E projects with non-IPA fisheries or cross-sector, higher level fishery non-specific RD&E (eg., climate change).

Given the non-rivalrous nature of fisheries research, quantifying the distribution of the benefits for the purposes of cost attribution is not straightforward. In the first instance, the fishing industry and general public are the primary beneficiaries of research relating to the sustainability of the resource. Attributing too high a proportion of these costs to the industry may have unintended consequences. For example, while cost recovery is considered essential to engage fishers in the management process, Stokes et al. (2006) warns that high-quality research largely funded by the fishing industry can contribute substantially to industry objectives, but may not help move the fishery towards other societal objectives. As a result, Stokes et al. (2006) considers as essential a greater public funding of marine research (although not as an alternative to industry paying its share) and improvement of government planning processes to provide clear linkages between fisheries-management needs and all required research.

Charging mechanisms available for collecting licence/access fees

The Australian Government Cost Recovery Guidelines (Department of Finance 2022) identify five different types of government charging mechanisms:

1. Commercial charges based on market rates for provision of services by government business enterprises;
2. Cost recovery fees that reflect the cost of provision of a particular service to an identifiable individual (e.g., fee for service such as issuing a licence or lease);
3. Cost recovery levies to recover costs of providing a service to a group of individuals (e.g., most management services);
4. Fines or monetary penalties which may or may not relate to a specific service but aimed at discouraging an activity by industry; and
5. Taxes and royalties, which are not related to the costs of service delivery but aimed at raising revenue.

In terms of cost recovery, the Australian Government Cost Recovery Guidelines (Department of Finance 2022) suggest that only cost recovery fees and levies (types 2 and 3) be applied. Similar views are expressed elsewhere. For example, in New Zealand, a general preference among the finance and treasury agencies is for explicit cost recovery mechanisms rather than sector-specific taxes that are potentially punitive and inefficient (Harte 2007). These charging mechanisms are consistent with ensuring that the principle that the beneficiaries of government services should meet the costs of services in accordance with the concepts of *user pays* and *risk creator pays*.

Is there a role for resource rent charges, community returns and royalties?

The Australian Government Cost Recovery Guidelines (Department of Finance 2022) note that the use of taxes, royalties or similar resource access payments (such as a charge levied as a percentage of fishery GVP) to levy income are not appropriate as a cost recovery mechanism and would not satisfy the overall objectives of cost recovery as set out in both the Australian (Department of Finance 2022) and South Australian cost recovery policy and guidelines. These mechanisms are more usually used in fisheries to raise revenue for specific purposes (e.g., contribute to industry funded buyback (Holland et al. 2017) or research (Alston

et al. 2004)), but can also be considered as mechanisms for collecting resource rent from resource users on behalf of the community who own these resources.

Resource rent is a measure of the value of the ecosystem service provided by the fish stock in the production of the fish output. In the absence of management, this resource rent is dissipated, and the commercial industry receives only what is known as “normal” returns. Where there is effective management, the commercial industry receives a return that is larger than this normal return and is known as resource rent. It should be noted that the existence of resource rent is a function of both the ecosystem service provided by the resource and the effectiveness of management. A resource rent *charge* represents a community return for the use of this publicly owned resource that produces the ecosystem service.

The value of the resource rent is generally considered as the difference between the level of revenue and the costs of all physical inputs into the production process, including an implicit value for non-paid labour and a normal return on capital (Figure 1).⁶ If management costs are not recovered, these are also captured in the measure of vessel profits. The residual, after management costs and normal returns are deducted, is generally considered to represent the level of resource rent generated. However, resource rent can only be generated through effective management, and as a result, some of the value can also be considered a return to the management initiatives that enable this resource rent to be generated. These management returns are over and above the costs of management delivery (i.e., costs recovered), and could be considered “profit” of the management entity if provided through a market. Separating the returns to management and resource rent components, however, is complex, and the former is usually considered to be implicitly included in the latter.

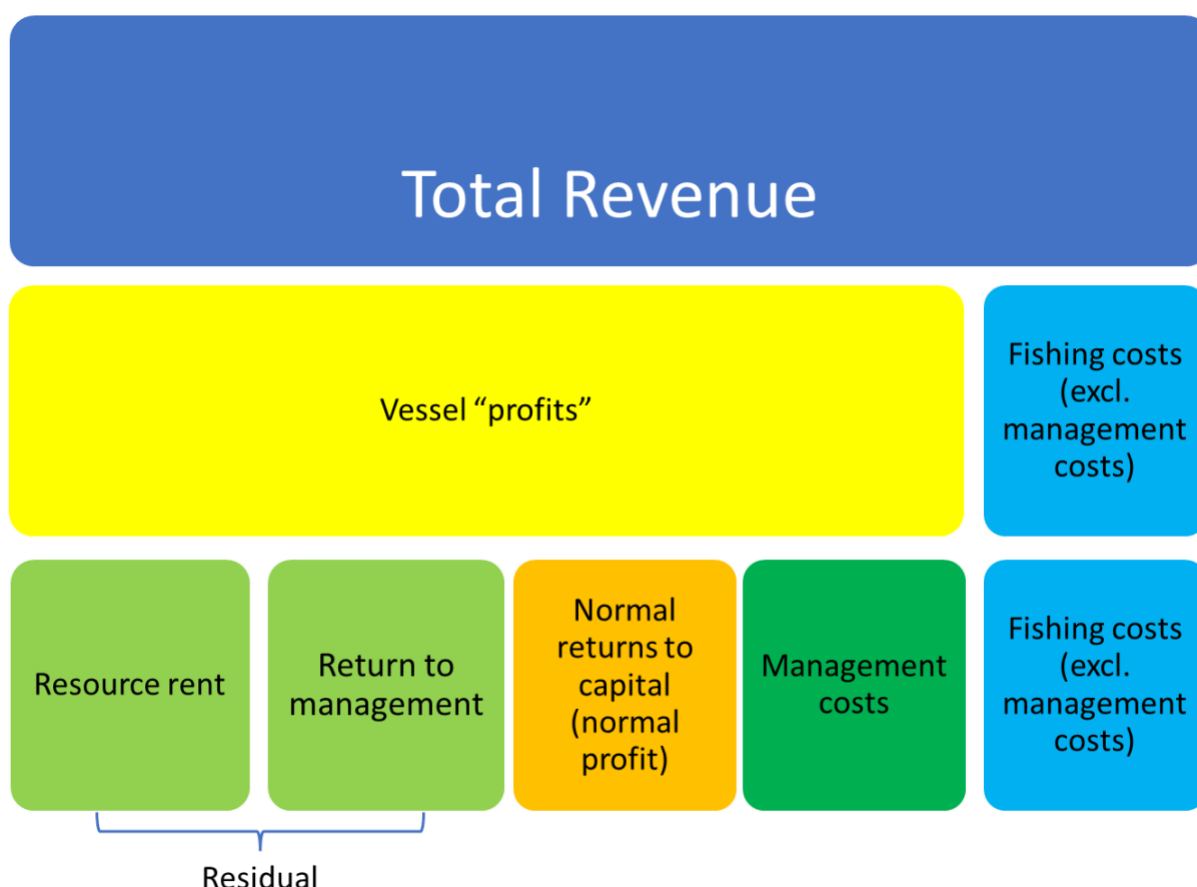


Figure 1. Components of vessel profit

⁶ A range of other forms of rent also exist relating, for example, to the skill of the skipper and location of the operation (Coglan and Pascoe 1999). For simplicity we ignore these in this section.

The collection of some, or all, of the residual generated in the fishery can be considered an explicit community return for the use of the publicly owned resource (as well as a return on the management services provided). In theory, the use of charges to extract resource rent can result in an efficient level of harvest and effort, and this approach has been proposed by economists as a potential alternative to individual quotas since the 1970s (e.g., Scott 1979; Anderson 1986; Androkovich and Stollery 1991).

Resource rent charges are applied to the minerals and energy sectors in Australia through the Commonwealth Minerals Resource Rent Tax (MRRT) (now abolished) and the Petroleum Resource Rent Tax (PRRT), based on a share of their profits. For example, the former Commonwealth MRRT aimed at collecting 22.5% of above normal profits (Australian Tax Office 2016), while the PRRT is levied at the rate of 40% on the taxable profits (Australian Tax Office 2020). In addition, these sectors are also subject to State based royalties paid as a percentage of the value of production. For example, Queensland imposes a variable royalty rate on coal ranging from 20% to 40% depending on the price of coal (Treasurer and Minister for Trade and Investment 2022).

The use of royalties (e.g., percentage of GVP) to collect a community return can be distortionary if not directly related to the level of resource rent generated (Mayo 1979). That is, they may adversely influence the flow of investment into the sector if the proportion of rent extracted is considered too high. Grafton (1995) also noted that, within a fishery, the burden on fishers varied in relation to their relative efficiency: fishers with lower catch per unit of effort (and hence higher cost per unit of catch) will pay a disproportionately higher share of resource rent than more efficient fishers with lower costs per unit of catch if a percentage of the value of catch was extracted as a resource rent charge.

Charging for access to the resource is another form of resource rent extraction, although this is not necessarily linked with the level of extraction, nor the amount of rent generated. Charging foreign fishing fleets fees for access to domestic waters is common in many countries and is a major source of foreign currency (e.g., Belhabib et al. 2015; Bell et al. 2021). In Australia, aquaculture is often subject to lease payments reflecting, amongst other things, the value of the water resources that they are using in their production.

Resource rent charges and the recovery of management costs from resource users are not mutually exclusive. As the level of resource rent generated is also a function of the efficiency of management in achieving economic outcomes, the resource rent is net of the cost of this management activity (Figure 1), and hence management costs can still be recovered separately. Where tax or royalty charges have been applied to fisheries, however, (e.g., Iceland (Gunnlaugsson et al. 2018), Norway (Office of the Prime Minister 2023), Tasmanian abalone), these funds have also been used to cover the costs of fisheries management and there was no additional cost recovery arrangement applied. These resource rent charges presumably exceeded the management costs in order to also provide a community return.

Income tax as a mechanism for community return?

All individuals and businesses in Australia are subject to income tax. Income tax is based on the gross revenues less the costs incurred in undertaking the economic activity. For a business, this represents the profit earned. An argument sometimes put by commercial industry is that a return to the community for using publicly owned resources is captured in the income tax paid on the higher level of profits arising from the resource use. This is then returned to the community for the provision of services such as health, education and other services that are supported by government expenditure.

This argument is attractive, but potentially may be distortive. The fisheries resource is an input into the production process the same as any input, such as fuel, crew, fishing gear and other capital costs. These non-fish inputs are not provided free to the fishing industry with a return on their use captured through taxation. By not explicitly identifying and accounting for the value

of the fisheries resource used in fisheries production, there is a propensity to overuse the resource (as would be the case for any subsidised input).

Income and company tax is a means to raise revenue for the provision of a wide range of government services and investments. It is the individuals' and the companies' contribution for the use of, or access to, these services and investments. Returns on government investments also contribute to this revenue separately, as do (in the case of the minerals and energy sector) returns on the use of community owned natural resources.

Further, income and company taxes are received by the Commonwealth Government, with income being redistributed to the States. This creates an additional disconnect between the areas in which the resource is exploited and where the returns are collected. For the minerals and energy sectors (which are also subject to a separate resource rent tax as well as company tax), State governments also charge some form of royalty to ensure that returns directly accrue to the communities in which the resources are extracted.

Other considerations

The review of the cost recovery literature identified several other considerations that may help inform the implementation of an appropriate cost recovery policy. These are outlined in [Appendix 5](#).

PIRSA Cost Recovery Process

The South Australian Fisheries Act (2007) includes objectives that effectively seek to manage the State's aquatic resources so as not to endanger or overexploit the resource and allocate resources between users in an equitable manner to ensure optimum utilisation of those resources to the benefit of the community.

The Act notes that management should ensure the use, conservation, development and enhancement of the aquatic resources of the State in a way, and at a rate, that will enable people and communities to provide for their economic, social and physical well-being while sustaining the potential of aquatic resources to meet the reasonably foreseeable needs of future generations.

The Act includes the objective that the aquatic resources of the State are to be managed in an efficient and cost-effective manner, and targets are set for the recovery of management costs.

PIRSA cost recovery principles

The PIRSA Cost Recovery Policy (PIRSA 2020) encompasses the principles embodied in the South Australian Fisheries Act (2007). These are largely consistent with those principles included in the Australian Government Cost Recovery Guidelines (Department of Finance 2022) as well as the other jurisdictions noted in previous sections.

Principle 1 establishes that charges should recover all costs of services where it is efficient to do so, although partial cost recovery may be appropriate when there are government-endorsed community service obligations or explicit government policies that support partial recovery. Cross-subsidies should be avoided, unless there is an explicit decision of the government to cross subsidise, for example, in order to pursue equity or social policy objectives. Principle 4 ensures that there is legal authority of PIRSA to collect these charges while Principle 9 ensures that the arrangements are consistent with SA legislative and policy requirements.

Principle 2 of the policy notes that full cost recovery may not be appropriate if the industry does not have the ability to pay these costs.

Principles 3 and 5 note that any charge should reflect the costs of providing the product or service and should generally be imposed on a fee-for-service basis or, where efficient, as a levy. Costs that are not related or integral to the provision of products or services (e.g., some policy and parliamentary servicing functions, including fundamental development and review of government policies – including regulatory and information services) should not be recovered. Principle 6 is that where possible, definable activities should be grouped and shared across individuals within an industry group (e.g., biosecurity, research).

Principle 7 states that the approach to cost recovery should align with the key principles of the Australian Government Cost Recovery Guidelines and recognise:

- Efficiency and effectiveness;
- Transparency and accountability;
- [involve] stakeholder engagement; and
- [undertake] policy review.

Transparency is established in Principle 8 through the development of Cost Recovery Implementation Statements (CRIS) and Principle 10, which requires stakeholder engagement to negotiate these costs.

Finally, Principle 11 requires that all arrangements will be monitored and periodically reviewed.

Cost recovery policy development over time

The Panel was provided with a copy of an historical document titled *Cost Recovery in South Australia Commercial Fisheries – Fisheries Management Paper No.7* (Hall 1995). This document provided a reasonable history of the earliest establishment of cost recovery in South Australia, including commercial fisheries.

In July 1992, the South Australian Fishing Industry Council (SAFIC) and the Department of Fisheries agreed to a number of principles for cost recovery. The general principle was that service recipients pay a fee for government services equivalent to the cost of activities for which direct benefits were received.

These principles were tied in with a broad agreement for commercial and recreational fishing industries to have joint responsibility, with government, for managing the State's fisheries including the funding of government services through licence fees. A specific meaning of joint responsibility was not provided.

A summary of the main principles in the management paper (Hall 1995) were as follows:

- Government should support the fishing industry to an extent equal to that support provided to other primary producers (e.g., agriculture).
- A long-term strategic plan should be developed for each fishery and its associated costs centres.
- Once management and resource management plans are developed and approved a mechanism for contracting out should be agreed upon.
- Given the monopoly power of the managing agency there must be a high level of consultation with industry.
- A zero-based budget approach is to be adopted on an annual basis and define what costs would apply if fishing did not exist.
- Separate costs to be determined for resource management costs (what amount of fish, caught by whom) vs industry management costs (how fish are caught).
- Fishers will pay on a fee-for-service basis where the benefit is clearly defined.
- All costs attributed to any fishery must be fully considered by the relevant fishery management committee which will make recommendations to the Minister for fisheries regarding expenditure for the fishery.
- Recoverable costs to be determined to the satisfaction of the industry representatives for a particular fishery.
- Commercial sector will not bear the costs of management for the recreational sector.
- Where a research component assists a resource accessed by both recreational and commercial fishers, a proportion of that research cost must be set aside for the recreational sector and not recovered from the commercial sector.
- The costs of social justice are to be borne by government. That is, the fishing industry has a legitimate expectation to be protected by government from adverse outside influences just as every citizen has a right to be protected from theft and assault in the street.
- Government has a responsibility to manage the resource (and the costs) even if there are no fishers (e.g., collapsed fishery). This was labelled a 'benchmark responsibility'. Costs may be recouped when industry/fishery becomes sufficiently viable.
- Some costs (e.g., pollution, exotic species etc) are for protection from other sectors than fishing and should be set aside and not recovered from the commercial fishing sector.

- Industry will only participate with a higher financial input where it can have a major input into a review of current administrative structure with a view to achieving high level costs effectiveness (e.g., consideration should be given to an alternate form of management structure involving much greater industry participation).

Hall (1995) also set out a range of mechanisms considered by PIRSA and industry in 1992 to recover the costs including:

- A cost attribution model. This was found to:
 - provide a strong base for ensuring efficient and accountable government services;
 - involve the agency negotiating with each industry sector over departmental cost centres and budgets each year; but
 - one criticism was that there is no correlation to an industry sector's capacity to pay (e.g., MSF).
- Percentage of gross value of production method (%GVP). This was found to:
 - use the value of production to determine fees not actual service levels and costs;
 - is therefore a community return not cost recovery;
 - take into account capacity to pay but this is distorted by having no lens on the costs of fishing in any sector; but
 - would result in some reductions in fees for industries where there is a high level of resource rent (e.g., abalone) which is inequitable.
- Percentage of gross goodwill value of licences method (%GVL). This was found to:
 - recognise rent is capitalised in the form of transferable licence prices;
 - is therefore a community return not cost recovery; but
 - encounter difficulty in accurately determining licence values in a sector.

The outcome in 1992 from industry and government considering these various mechanisms was to support the '*cost attribution model*' rather than any form of '*access/community return model*' considered at that time.

However, at the same time, the Government established an 'integrated management committee contingency fund', together with the 'fisheries development fund' (Hall 1995). All commercial industry sectors contributed towards these funds through application of a set percentage of their individual fishery Gross Value of Production (GVP). These 'contingency funds' were to be used to improve the economic performance of a fishery by assisting those industries experiencing difficulties in meeting cost recovery levels or generally unable to amass sufficient funds for required rationalisation (i.e., effort reduction or fishery restructure). The Minister was required to consult with industry before these funds were expended. Over time, as overall profitability in each fishery improved, it was expected that this fund would no longer be needed⁷.

Hall (1995) sets out that in early 1994, further negotiations were held in an effort to reach agreement on attributable cost and required services. These negotiations resulted in agreement that 56% of recurrent expenditure on services was to be recovered from the

⁷ The Panel was unable to confirm the establishment of these contingency funds and, if established, what these funds were used for and what is the current status of these funds (i.e., whether they still exist and where any of the fund balances are now held).

commercial fishing sector, 18% from the recreational sector and 14% from the aquaculture sector, with the remaining 12% attributed to public good.

It was also considered that there should be a review measuring the performance of the research and compliance activities before additional funds were provided from levies or from general revenue.

Hall (1995) set out that in 1995/96 PIRSA recovered 100% of the attributable costs to the commercial sector.

In 2009, PIRSA developed the first formal Cost Recovery Policy containing a range of general, costing and pricing principles (PIRSA 2020), and applying across its entire portfolio. The Panel sought copies of any fisheries cost recovery policies between 1995 and 2009 but were told by PIRSA these were archived and difficult to access. PIRSA advised the Panel that the cost recovery policies at the time were relatively consistent from 1998 through to 2009. A 2002 Cabinet paper was viewed by the Panel that considered introducing full cost recovery to the aquaculture sector but did not appear to progress until 2009.

Previous cost recovery reviews

Over time there have been several Independent Review Reports into the PIRSA cost recovery arrangements as applied to commercial fisheries. The ICRRP has considered the independent review reports from 2009, 2015 and 2018 and noted that these reports:

- identified issues and recommended improvements in the cost recovery process; and,
- tracked the progress made by government through the years in implementing the respective independent review recommendations.

The various report findings and government action provided the ICRRP the opportunity to assess the progress of cost recovery in commercial fisheries over the years.

In 2009, the independent review findings/recommendations included:

- That the Fisheries Council process to review cost recovery activities (membership of which included an independent chair, industry and government) gave confidence to stakeholders that policy principles were being applied appropriately.
- Need for better recognition of the degree to which activities (e.g., research) undertaken as part of commercial fisheries management (and paid for by the commercial sector) may provide benefits to recreational fishers or the community more broadly or provide information to facilitate other activities or other spill-over benefits.
- There is very limited transparency around the costs, and what activities these relate to, specifically in regard to regulation of recreational fishers, management of the resource for Indigenous users and the benefits to the broader community.
- That regular benchmarking analysis (perhaps every 3-5 years) of PIRSA regulatory and SARDI research costs (and making the results publicly available) to improve transparency and ensure regulatory costs are efficient.
- If a small commercial fishery is allocated higher research costs, it may make the fishery uncompetitive (or unviable). Government may then choose to further intervene in the market to support funding - at least there would have been a clear and transparent decision-making process supporting this intervention.
- Overall, the review concluded the cost recovery framework appears to be consistent with PIRSA's cost recovery principles and appears to be allocating costs between commercial fisheries, aquaculture and other sector in a reasonable manner.

In 2014, PIRSA updated its Cost Recovery Policy for consistency with the newly released Australian Government's Cost Recovery Guidelines (2014).⁸ The updated PIRSA Cost Recovery Policy noted that overhead or corporate costs should be recovered, provided they can be '*reasonably attributed to the provision of the product or service*'. Corporate services were not charged to industries as part of PIRSA's model nor were asset or shared services costs.

In 2015, the independent review found there were advantages to PIRSA's existing approach including:

- Cost reflective charges.
- Economic efficiency.
- The ability to report detailed information (transparency).
- Certainty regarding the costs PIRSA will be recovering each year.

However, there were also identified disadvantages of PIRSA's approach at the time:

- Lack of simplicity: PIRSA's cost recovery approach was complex and may present barriers to industry in understanding the objectives of cost recovery and how to respond to price signals.
- Cost to administer: the cost of administering PIRSA's cost recovery approach was high. The current process is an annual process, which takes a number of months to administer.
- Volatility: Currently, the licence fees being charged to industry can significantly vary each year. This can pose issues for fisheries looking to undertake business planning exercises and can be a barrier to investment.

In 2015, the independent review findings/recommendations included:

- PIRSA's approach to cost recovery creates a significant administrative burden through annually negotiating management plans, recording time and resetting charges. This administrative burden increases the overall cost of the cost recovery approach, which is ultimately recovered from industry.
- PIRSA's cost recovery approach is largely transparent and accountable but could be improved by publicly providing documents (online) that explain how PIRSA recovers costs, the services it will provide, the cost of those services and the performance of PIRSA activities against the cost recovery budget.
- PIRSA's approach to allocating costs has become more accurate since the 2009 review as it now uses data from time-recording software. Staff are now required to complete a timesheet each week and allocate hours to each fishery (e.g., tuna, rock lobster, abalone) and the tasks undertaken within each fishery (e.g., licensing, compliance).
- PIRSA's cost recovery approach represents a trade-off between the principle of economic efficiency and other principles of simplicity (including the cost to implement) and avoiding volatility.
- There was a need to update PIRSA Cost Recovery Policy to include:
 - an explicit principle for transparency, accountability and performance measures.
 - that charges be simple, clear and easy to understand.
 - include only efficient costs and avoid volatility.
 - Setting fees for longer periods (with annual indexation) to increase the degree of certainty for PIRSA and industry.

⁸ Australian Government Cost Recovery Guidelines (2014)

In 2015, the Fisheries Council (which had industry representation) was replaced by the Cost Recovery Committee (with no industry representation).

In 2016, the Productivity Commission reviewed fisheries and aquaculture generally in Australia and called for implementation of best practice for cost recovery (Productivity Commission 2016).

Through 2015 to 2017, there were continued concerns raised by industry with PIRSA's cost recovery process resulting in a 2018 pre-election commitment to establish an independent review including comparison with other Australian jurisdictions.

The independent review in 2018 found PIRSA had made significant progress on a number of fronts following the 2015 independent review, including:

- Cost recovery policy amended to include 11 principles, including a specific principle on transparency and accountability.
- Key cost recovery documentation was now available online.
- Four-year cost recovery programs were implemented in some fisheries to reduce administrative burden and increase certainty to industry and PIRSA. PIRSA did advise the Panel that despite introduction of 4-year terms there are still requests from industry for regular meetings and administrative actions.
- A 'co-management policy' had been established.

The 2018 independent review findings also noted:

- The previous role of the Fisheries Council (including a focus on cost recovery) was now transferred to a PIRSA Finance Committee (with no industry representation),
- Lack of details as to the costing, timing and negotiation process that occurs every one to four years between industry and PIRSA.

The recommendations of the review included:

- The cost recovery policy should contain documentation around risk assessment and the CRIS (similar to the Commonwealth guidelines).
- The cost recovery policy should provide greater detail when aligning expenses to revenue to ensure it is clear and easy to understand (similar to the Commonwealth guidelines).
- Establish a more robust independent verification process for the five-year cycle review encompassing all elements of the cost recovery framework, including:
 - Cost model reviews should be a regular requirement going forward including best practice and financial modelling standards.
 - Cost models should enable sensitivity analysis of various activities and costs recovered.

The South Australian government responded to the 2018 review by:

- Noting the review advice that transparency and accountability had improved whilst reducing administrative burden with the introduction of four-year cycles.
- Updating several sections of the South Australian Cost Recovery Policy in line with recommendations.
- Agreeing to PIRSA establishing a more robust, independent verification process encompassing all elements of the costing framework (policy, process, cost model, cost inputs and drivers). This should be utilised as a basis to strengthen review processes in future years.

There were several key themes raised by industry (listed below) that fell outside the terms of reference of the 2018 independent review (set out on page 42 and 43 of the KPMG final

report), however these were noted for consideration in the anticipated review of the Cost Recovery Program in 2020. These included:

- Inconsistent application of cost recovery policy within PIRSA (e.g., fisheries vs agriculture).
- Lack of transparency and reporting leading to queries that public good, recreational and other sectors are subsidised by the commercial industry.
- Programs not derived/linked with a risk-based / innovative approach in mind (e.g., e-logs).
- Program negotiation is highly prescribed. Little opportunity to have meaningful impact to help drive costs down.
- No reporting of effort/cost against anticipated outcomes/budget.
- Mixed views over cost and service level of SARDI stock assessments.

The recent Heilbron report (SG Heilbron Economic & Policy Consulting 2023) was commissioned by the SA government to detail:

- Output 1) - a review of the current cost recovery approaches in fisheries and aquaculture undertaken in South Australia (including advising on the economic logic) and other comparable jurisdictions; and
- Output 2) – a business case detailing a proposed move from the current cost recovery model to a GVP cost recovery model.

Unfortunately Output 1) was not provided but Heilbron suggested under Output 2) that a %GVP model:

- may provide benefits as it shares the risk between industry and government,
- reduces complexity in administrative processes;
- reduces disputation around management costs; and,
- protects fisheries that are relatively high cost to management (relative to their GVP) from unsustainably high management charges, particularly in periods of volatile prices and costs.

However, the Report also noted that:

- such a system would create potential inequities between fisheries, with some fisheries effectively subsidising the management of others; and,
- it also distorts the price signal between provision of, and payment for, management services.

Overview of Current PIRSA Cost Recovery Process

The South Australian Government Fisheries Management Act 2007 (S7(3)) provides that the aquatic resources of the State are to be managed in an efficient and cost-effective manner and targets are set for the recovery of management costs. The Government introduced a Cost Recovery Policy some 14 years ago (based on the similar policy initiated by the Commonwealth government for cost recovery) to enable consistent decision making on the appropriate recovery of costs of services delivered by the Department of Primary Industries and Regions (PIRSA) across the portfolio, including commercial fisheries managed by PIRSA.

The key milestones in PIRSA's cost recovery process are set out in the PIRSA Fisheries and Aquaculture Cost Recovery Framework (PIRSA 2022) and includes:

- September: In conjunction with the relevant industry association, review the long-term objectives for each fishery or aquaculture sector, update if necessary and identify priority outcomes for the upcoming financial year;

- October: PIRSA to develop policy, research and compliance work programs in readiness for discussions of fisheries managers with industry in November;
- November: PIRSA to consult and reach agreement with the relevant industry association in relation to proposed program content including objectives, strategies, actions, initiatives, performance indicators, deliverables. Industry associations are required to consult with wider industry stakeholders;
- February: Formal meetings between PIRSA and industry association to finalise work programs and summarise costs;
- March: PIRSA to submit proposed commercial licence fees for approval to the Minister and setting regulations;
- June: Invoices sent for annual licence or lease fees.

For those fisheries or aquaculture sectors that have entered into a longer term agreement (Cost Recovery Implementation Agreement), the annual meeting cycle moves to a single meeting in February of each year. Either PIRSA or the industry representative may initiate additional meetings if programs or services require amendment.

PIRSA's cost recovery consultation process with industry comprises:

- Development of management priorities for each fishery (e.g., tuna, rock lobster);
- Agreement on draft work program and services to be undertaken to address the priorities identified;
- Finalising work programs and summarising costs for delivery of work program in the Cost Recovery Implementation Statement (CRIS) in order to establish setting of fees, licences and other charges to recover costs.

PIRSA provides documents to industry that cover the following information in a financial year for each fishery or aquaculture sector:

- The management objectives for each fishery or aquaculture sector.
- The total cost of services.
- PIRSA's charge out rates for different activities.
- How charges are calculated and supporting documentation.
- Program initiatives to be completed by PIRSA.
- Anticipated outcomes, including performance indicators.

This information is provided in the following key documents:

- Cost Recovery Implementation Statement (CRIS) for each fishery/aquaculture sector based on a single year or, where agreed, a four-year term (with CPI index applied)
- Annual compliance risk profiles developed for each fishery covering all main activities in a fishery (e.g., quota management, closed areas, undersize, protected females, gear use, TEPs, failure to report fishing, no CDR, disease management).
- Annual report on PIRSA Service Delivery on Cost Recovery for each fishery/aquaculture sector, listing key deliverables achieved for each service program.
- Compliance Performance Reports provided to industry every six months (reports usually drafted in a form requested by industry).

PIRSA delivers cost recovered activity services such as:

- Directorate Services,
- Legal Services,
- Fisheries Compliance,
- Operations,
- Licensing Services,
- Fisheries Policy and Management,
- Stock Assessment and
- Monitoring.

PIRSA calculates a daily rate for each service and includes:

- Employee expenses
- Operating expenses
- Depreciation and capital costs
- Other expenses – IT, HR, WHS, office accommodation, insurance

In addition to past reviews, the ICRRP has been provided with documentation by PIRSA including (but not limited to):

- SA Fisheries legislation and regulations
- PIRSA Cost Recovery Policy
- PIRSA Cost Recovery Framework
- Cost Recovery Implementation Statement (CRIS) for each fishery
- Commercial Fisheries production: South Australia, 2021/22 - \$196,075,000
- Breakdown of PIRSA expenditure separated into commercial and recreational fishery activities for MSF, 2020/21 (Note: Is not provided to industry)
- Goals and objectives for all commercial fisheries
- Fisheries and Aquaculture Stakeholder Engagement Internal Audit – Galphins Report, November 2022 (Confidential – not provided to industry)
- PIRSA Annual Service Delivery Reports
- Compliance risk profiles for selected fisheries.
- Compliance Performance Reports for selected fisheries.
- FRDC: Informing the Structural Reform of the South Australian Marine Scalefish Fishery
- SARDI Cost Recovery Process for Commercial Fisheries (see [Appendix 6](#))

Findings and Recommendations

Overall findings and recommendations

The Panel found strong support from PIRSA and industry for the existing PIRSA Cost Recovery Policy (PIRSA 2020) including the overall objectives of cost recovery, the eleven principles set out in the Policy and specifically the key elements as set out in Principle 7 of the Policy (i.e., effectiveness, transparency, accountability, stakeholder engagement).

The Panel was advised by participants in some specific fisheries that they were comfortable with the existing cost recovery model. In the main these were fisheries where the overall cost was low in comparison to the annual GVP of the fishery. However, the Panel considers that implementation of cost recovery by PIRSA has, over time, eroded the confidence of the majority of industry in PIRSA's ability to actively manage the cost recovery process in a manner consistent with these key elements and to ensure that the right service activity is applied, the level at which that service activities delivered is right and that the cost of that activity is attributed and recovered in the most appropriate way. The Panel received strong messages from both PIRSA and industry that parts of the cost recovery process are 'broken' and that some relationships are fractured. Even in those fisheries comfortable with the existing cost recovery model there were concerns raised that some attributed costs were questionable, different compliance activities could be considered and greater clarification of application and costs of science implemented.

The Terms of Reference for this Independent Review also stated that *'Irrespective of the findings of the [past] independent reviews and the recent improvements in the cost recovery process, there remains significant and increasing challenges with the current process.'* (Appendix 2).

This is despite past independent review reports having consistently cited issues of transparency around activities and costs associated with management and a lack of a transparent and consultative risk-based framework for setting activity levels as catalysts for ongoing tension between PIRSA, SARDI and industry. Recommendations have repeatedly been made to, among others, more clearly identify the attribution of costs between all beneficiary user groups, introduce regular benchmarking of key processes and costs, and improve performance reporting.

The Panel noted that its overall assessment of the current situation is consistent with the findings of these previous reviews, and that a lack of response to some recommendations of these past reviews has contributed to escalating tensions and transaction costs for some fisheries. These past review recommendations include:

- Need for better recognition of the degree to which activities (e.g., research) undertaken as part of commercial fisheries management (and paid for by the commercial sector) may provide benefits to recreational fishers or the community more broadly or provide information to facilitate other activities or other spill-over benefits.
- There is very limited transparency around the costs, and what activities these relate to, specifically in regard to regulation of recreational fishers, management of the resource for Indigenous users and the benefits to the broader community.
- That regular benchmarking analysis (perhaps every 3-5 years) of PIRSA regulatory and SARDI research costs (and making the results publicly available) to improve transparency and ensure regulatory costs are efficient.
- Establish a more robust independent verification process for the five-year cycle review encompassing all elements of the cost recovery framework, including:
 - Cost model reviews should be a regular requirement going forward including best practice and financial modelling standards.

- Cost models should enable sensitivity analysis of various activities and costs recovered.

That said, the Panel identified goodwill on the part of PIRSA, SARDI and industry to positively engage in the ICRRP review process with the aim to 'fix' the cost recovery system in fisheries in South Australia.

The Panel reviewed cost recovery and revenue models in other jurisdictions, both in Australia and internationally (see [Appendix 7](#)), and found no alternative model that would be consistent with the overall objectives of a cost recovery approach as set out in both the Australian (Department of Finance, 2022) and South Australian cost recovery policies and guidelines.

In relation to the use of a %GVP charge to collect management costs from industry, the recent Heilbron report (SG Heilbron Economic & Policy Consulting 2023) suggested that:

- a %GVP model may provide benefits as it shares the risk between industry and government,
- reduces complexity in administrative processes,
- reduces disputation around management costs and
- protects fisheries that are relatively high cost to management (relative to their GVP) from unsustainably high management charges, particularly in periods of volatile prices and costs.

However, the report also noted that:

- such a system would create potential inequities between fisheries, with some fisheries effectively subsidising the management of others.
- it also distorts the price signal between provision of, and payment for, management services.

The Panel found the use of the %GVP model in Western Australia reflected the findings in the Heilbron Report.

There has been a reduction in the tensions between the WA industry and government arising from the constant call for explanation and justification of costs attributed to a fishery under the previously applied cost recovery system. The WA fisheries management agency advised that they can apply the levels of funding to agency priorities rather than being restricted by cost recovered funding tied to a specific fishery's priorities.

The Panel was also advised in discussions with industry and the agency that the management agency in WA has been unable to deliver against particular objectives and stated priorities due to lack of resources. This is curious as the funding agreement sets out the agency annual expenditure budget is always covered by a combination of the %GVP revenue raised supplemented by government appropriation and so agreed priorities should always be funded (as would be the case under a cost recovery model). It appears that in practice the agency resourcing is impacted by broader government appropriation decisions and public service policy restrictions (eg maximum FTEs). The Panel was advised that the increase in broader non-fisheries management government priorities such as cyber security, marine parks development, renewable energy site development, WHS, environmental oversight took precedence over specific fisheries priorities.

Contrary to expectations in WA there has been a continuing level of disconnect between industry and the management agency in relation to management decisions. Management activities and priorities in a specific fishery may not be progressed in any one year given available resources are directed to priorities elsewhere. Given that funding arrangements can be changed by decision of the Minister this does not provide for a long-term planning capacity by industry.

There also appears to be ongoing contention and review over setting GVP values for individual fisheries, especially those in multi-species and vertically integrated fisheries.

Some in the Western Australian industry argue a uniform percentage of fishery GVP approach entails cross subsidisation and has disincentivised investment in industry.

Importantly, the Western Rock Lobster Fishery contributes approximately 70% of the total state GVP and the advent of the China import restrictions on Australian rock lobster has reduced this revenue stream significantly placing even more pressure on the Government to provide funding of baseline core sustainability requirements across all fisheries.

The Panel accepts that many of the issues of concern raised with the %GVP model are not specifically attributed to the model but do impact the application of the revenue model to achieving fisheries management objectives.

Specifically, the Panel does not support moving to a %GVP funding model for the recovery of fisheries management costs as has been suggested by some as a way to improve recovery of fisheries management costs in South Australia. The reasons for this are:

- The Panel found no support from industry for the %GVP model, even among those fisheries where the total cost recovered currently comprises a high percentage of GVP (see industry issues raised - Appendix 3).
- Attempting to recover costs through a charge levied as a %GVP is inconsistent with accepted cost recovery principles (e.g., user pays) and Commonwealth guidelines on appropriate charging mechanisms.
- The Panel discourages the use of a charging mechanism that conflates the recovery of management costs and a community return, as may occur with a uniform %GVP model.
- The existing PIRSA cost recovery policy is acceptable and as such specifically excludes resource rents and instructs that cross-subsidy should be avoided.

The Panel supports retaining the existing PIRSA Cost Recovery Policy, and hence the activity based, attributable cost model, on the basis of it having a strong theoretical and policy rationale, and the strong support of industry.

<p>Recommendation 1: The Panel recommends retaining the existing PIRSA Cost Recovery Policy, and hence the activity based, attributable cost model, on the basis of it having a strong theoretical and policy rationale, and the strong support of industry.</p>

Notwithstanding Recommendation 1, the Panel acknowledges that should Government further consider the introduction of a resource rent charge as a way of securing a return to the community for the use of the fishery resource, that this would necessitate further review of the existing cost recovery model given the link between fisheries management (and costs) and resource rent, and the need for administrative efficiency (*see the Theoretical basis for cost recovery section earlier in the Report*). Resource rent charges did not form part of the Panel's discussions with industry or PIRSA, other than it being noted that access charges, such as %GVP, were more generally suited to the collection of a community return than to the recovery of management costs from beneficiaries.

The Panel identified weaknesses in several aspects of the current cost recovery system that must be addressed to ensure that cost recovery, as applied in South Australian fisheries, delivers outcomes that are consistent with the overall objectives and principles of the PIRSA Cost Recovery Policy.

The Panel noted that the South Australian government responded to the findings of the 2018 Independent Review by agreeing to PIRSA establishing a more robust, independent verification process encompassing all elements of the costing framework (policy, process, cost model, cost inputs and drivers). This independent verification process was expected to be utilised as the basis to strengthen review processes in future years. The Panel did not see evidence of this verification process having taken place.

The Panel sees value in renegotiating the principles as a way of bridging the gap between the generic principles that apply to the entire portfolio contained in the PIRSA Cost Recovery Policy (2020) and the application of this policy to fisheries.

Recommendation 2: The Panel recommends a ‘revise and reset’ process, that:

- addresses the range of issues with existing cost recovery policy, principles and implementation (revises); and,
- based on this revision, recalibrates cost recovery settings and charges (resets).

The Panel is strongly of the view that a ‘revise and reset’ process should as a minimum:

- establish a joint working group to allow for meaningful engagement between PIRSA and the South Australian commercial fishing industry peak body and include membership with direct cost recovery experience (external to PIRSA and Industry);
- involve external facilitation of key stages;
- include terms of reference that requires, at least, establishing cost recovery principles, a revised attribution model, a documented set of guidelines for implementation and key benchmarking processes;
- include consideration of transitional arrangements;
- include an impact assessment of key revisions (e.g., attribution model), of reset charges and of transitional arrangements;
- be adequately resourced and funded by the South Australian Government. The recommended process is to review government policy which is in place to benefit the community. Any review of government policy should be government funded.

The Panel noted that a potential weakness of the current activity based, attributable cost model is that fisheries vary widely in their ability to pay for management, and as the level and costs of fisheries management grow, recovered costs may put pressure on economic viability for some fisheries.

Principle 2 of the Cost Recovery Policy (PIRSA 2020) notes that full cost recovery may not be appropriate if the industry is unable to cover these costs. This situation should firstly trigger a review to:

- i) ensure the existing management regime is appropriate for the circumstances of the fishery; and,
- ii) to avoid unnecessary regulation, with the aim of reducing recovered costs.

The Panel does see a role for introducing a sector-wide ‘self-insurance fund’ that would act as a short-term safety net for at risk fisheries and be used to fund initiatives to improve their long-term viability.

The Panel noted that this industry self-insurance fund would be much the same as the previously existing Industry Development Fund (as noted in Hall, 1995) which was levied as a small percentage of GVP. The Panel supports a %GVP approach for this fund as its intent is 'revenue raising' and on that basis is different to 'cost recovery'. This differentiation is based on this levy being a negotiated agreement with industry (including support for cross-subsidy) resulting in clear principles and guidelines managed by PIRSA and the industry peak body upon receiving a formal application request.

Recommendation 3: The Panel recommends that the 'revise and reset' process consider creating a fisheries self-insurance fund, levied as a small percentage of GVP to provide a 'safety net' for at-risk fisheries.

Specific findings and recommendations

The Panel has identified weaknesses across the cost recovery system framework and processes as described below. Recommendations for how these could be addressed as part of the 'revise and reset' process are also set out below.

1. Cost Recovery Policy Framework

Detailed guidelines for implementing cost recovery policy and management processes can ensure consistency and transparency and are central to a well-functioning cost recovery system. Similarly, principles are the primary criteria against which options for cost recovery are tested and assist in weighing up the trade-offs about when, and who, to charge and how costs should be calculated and charges designed. It is the Panel's view that read together, PIRSA's Cost Recovery Policy (2020) and Fisheries and Aquaculture Cost Recovery Framework (PIRSA 2022) do not provide agreed principles or implementation guidelines that are adequately contextualised to fisheries, and that this is contributing to the current lack of mutual understanding and acceptance of cost recovery processes and outcomes between PIRSA and industry.

The Panel was provided with a copy of the initial mutually agreed South Australian fisheries and aquaculture cost recovery principles (Hall 1995) which many in industry were of the belief was still of relevance, but of which PIRSA was unaware.

As referred in Recommendation 1, the Panel sees value in renegotiating the cost recovery principles as a way of bridging the gap between the generic principles that apply to the entire portfolio contained in the PIRSA Cost Recovery Policy (2020) and the application of this policy to fisheries.⁹

Furthermore, the Panel supports the conclusion of its theoretical review of cost recovery in fisheries that both the user pays and risk-creator principles are relevant here, and that this needs to be made explicit in the policy framework.

The Panel also found that the heavy reliance in the policy on references to the Productivity Commission Cost Recovery Review (2002) and Australian Government Cost Recovery Guidelines (2014) to provide guidance on cost recovery processes and implementation in the PIRSA Cost Recovery Policy contributes to opaqueness in the system, and that such guidelines should be contextualised to fisheries and clearly visible. For example, the Panel could not locate any documentation clearly explaining how PIRSA attributes costs, what these attributions are or how often these attributions are reviewed.

⁹ The Panel does not necessarily endorse the principles in FMP7 (Hall, 1995).

Recommendation 4:

- The Fisheries and Aquaculture Cost Recovery Framework document be revised and expanded to include a set of negotiated fisheries and aquaculture cost recovery principles, including making explicit that both user pays and risk creator principles are relevant to the recovery of fisheries management costs.
- The Fisheries and Aquaculture Cost Recovery Framework document be revised and expanded to include comprehensive guidelines on cost recovery implementation, including, but not limited to, the agreed attribution model and activity costing model.

The Panel considered the AFMA process should be considered carefully during the recommended 'revise and reset' process. The AFMA model applies high level cost recovery principles that are similar to those used in South Australia to its activities and the negotiated outcomes from the application of those principles clearly establishes, in the first instance, the attribution of activities across the identified beneficiary sectors across the entire AFMA budget. This results in a clear explanation of what management activities are applied, who benefits from those activities and what proportion of the costs of an activity is to be attributed to each sector. Importantly this is set out in a single, annual CRIS for transparency and ease of comparison.

The proportion determined to be recovered from the commercial industry can then be further attributed across the individual commercial fisheries based on agreed criteria/formulae and then the individual licences or quota holders. The proportion determined to be 'public benefit' is found from Government revenue. Any proportion attributed to other sectors (e.g., recreational, Indigenous, external to fisheries) is clearly established under this approach and allows government to make determinations on whether to recover those costs. These proportions can also be set out in the same single annual CRIS providing transparency across the entire AFMA budget to all stakeholder groups.

The current AFMA attribution splits across industry, government and other revenue are demonstrated in Appendix 7 (p64).

The current PIRSA Cost Recovery Implementation Statement (CRIS) goes some way towards capturing the AFMA attribution characteristics. Long term objectives and goals ("outcomes") are identified in a PIRSA CRIS. However, the links between the management activities and these objectives and goals are not articulated. Instead, they are more procedural in terms - what the activity will be rather than how it will help achieve the desired outcomes. The costs of these activities are transparent in that they identify what each of the cost components relate to but are not justified as to why they are required to be that level.

Recommendation 5:

- A single, annual, whole of agency, cost recovery implementation statement (CRIS) for the PIRSA Fisheries and Aquaculture Budget needs to be developed similar to that created by AFMA (See AFMA 2022-23 CRIS)
- This CRIS should set out the proportions attributed to each sector for (including the recreational sector in the case of fisheries, and the general public for both fisheries and aquaculture) the entire PIRSA fisheries and aquaculture cost recovery budget (with supporting rationale from applying the cost recovery policy, principles and guidance developed through the 'revise and reset process')
- The CRIS should include the attribution of activities and associated costs to the individual fisheries (with supporting rationale).

2. Designing Cost Recovery arrangements

2.1. Cost Attribution (When and who should pay?)

The Panel received many industry submissions that challenged the attribution of costs under existing cost recovery arrangements. The Panel's review of theoretical issues related to cost attribution and assessment of attribution processes in other jurisdictions suggests that a more structured and transparent approach to determining whom should pay for the cost of particular services/activities be established in South Australia, based on the assessment of a range of considerations related to the economic nature, benefit and risk creator attributes of the service/activity, and the explicit management objectives as set out in relevant aquaculture management plans and legislation.

The Panel stresses the importance of applying the same cost attribution model to all fisheries sectors (commercial, recreational and Indigenous) and aquaculture and, that where final attributions of comparable services differ, this should be transparent, with rationale provided and be justifiable against the policy, principles and guidelines.

Recommendation 6:

- An attribution model be developed that enables the structured and transparent attribution of services across beneficiaries and risk creators, and accounts for both administrative and economic efficiency.
- Attributions be revisited every three years and the attribution model be reviewed every five years.

The Panel noted that management costs attributed to recreational fishing are currently not recovered by government. Discussions with PIRSA suggested that these are considered social benefits and hence it is appropriate to cover these from general revenue. From the theory review section earlier in the Panel report, recreational fishers represent a small (23%) portion of the general public, and benefits from recreational fishing largely accrue directly to the recreational fishers, and not the broader public. Recovering costs directly from this beneficiary group would free up resources to allow other public good elements of fisheries management to be publicly funded and enable other groups of beneficiaries (e.g., consumers in the case of domestic fisheries) to be recognised in the cost attribution model (see *Theoretical basis for cost recovery section and Appendix 4*). Recreational fisheries are an identifiable group, while consumers are less identifiable. Under the efficiency criterion of Principle 7 of the PIRSA's Cost Recovery Policy (2020), there is a rationale to recover costs from recreational fisheries in proportion to their benefits, but not recover costs directly from consumers (i.e., these costs are covered through general government funds).

Recommendation 7: Consideration be given to the introduction of a recreational fishing licence with an associated fee that can be used to support management of the fisheries.

2.2. What costs should be recovered?

As a general principle, PIRSA's Cost Recovery Policy (2020) requires recovery of the full cost of attributable services, where full costs are to include direct and indirect (corporate and other overhead costs), the cost of capital and the cost for capital. While the Panel did not conduct a detailed assessment of PIRSA's costing method/model, several issues related to recoverable costs were identified by the Panel over the course of this review.

The Panel received conflicting reports regarding the percentage of recoverable costs that are charged to industry, with the vast majority of industry generally believing they paid 100% while, for the same period, PIRSA cited several examples of recoverable costs that were not fully recovered (e.g., some overheads, in-kind contributions and the cost of producing an individual

fishery CRIS). The recent Heilbron report (SG Heilbron Economic & Policy Consulting 2023) seems to confirm PIRSA's position on this, using PIRSA data to estimate that overall 57-60 percent of recoverable costs are charged to industry (excluding co-management and FRDC costs).

Some parts of industry were concerned that they are regularly charged costs that should have been attributed to other beneficiaries, believing that some costs associated with managing recreational fisheries in multi-user fisheries are being debited against commercial fisheries, particularly where specific compliance activities relate to both sectors and where the transaction cost of allocating costs across beneficiaries is high. This contributes to industries belief in some commercial fisheries that they are subsidising recreational fishers. PIRSA provided evidence to the Panel that they apply attribution of activities and costs on a sector-by-sector basis but this is not made transparent to industry nor is any justification provided that the attributions are consistent with the cost recovery principles or an agreed attribution model.

The Panel was also advised that, in some commercial fisheries, there is the belief that industry is paying costs that should not be attributed to them, but that they prefer to not "*rock the boat*" by questioning the basis for attributing these costs because they are currently accepting of the overall level of cost recovered charges (usually being a small % of GVP).

The Panel heard that some parts of industry view PIRSA's approach to the determination of recoverable costs as a zero-sum game, whereby reductions in costs in one fishery are offset by increases in costs to another fishery, with the overall aim of maintaining a stable budget and staffing levels. The Panel found no evidence for this occurring but the fact the perception exists reflects the deep mistrust that characterises some relationships and poor transparency in processes. PIRSA did advise that all fisheries would show recent reductions in the level of service for which they pay as a result improvements in management service delivery and in recognition of activities not delivered in previous years as planned. There was discussion with the Panel from both PIRSA and industry on the matter of how best to apply the cost recovery model when actual annual activity levels vary, either 'under' or 'over' those levels budgeted. The cause of the 'unders and overs' against annual budget is in most cases identifiable and include unanticipated issues that need to be addressed within the current budget year (e.g., the recent issue within the Sardine fishery with TEP interactions). The Panel is of the view that the cost recovery framework needs to provide a clear pathway for determining these matters including risk assessment, options for management and impact of cost and cost volatility on licence holders.

The Panel supports the use of reductions, or discounts¹⁰, in the portion of costs recovered from industry so long as this is transparent, justifiable and efficient. There is currently no clear statement of permissible circumstances under which such reductions can justifiably be made, and this contributes to the impression that where these are made, they are *ad hoc* and inconsistent. Permissible circumstances should include short term relief in response to disruptions (such as has occurred in the past as part of Covid support, trade disruption support, structural adjustment support etc.) and to smooth the impact on industry of large changes to charges, and discounts in pursuit of broader social and economic government policy considerations (such as support to emerging industries (aquaculture) and regional development goals).¹¹

The Panel supports the recommendations of past South Australian cost recovery reviews that fees and charges should initially be developed exhibiting full cost attribution to sectors (e.g., commercial and recreational) and then further to individual commercial fisheries. Where

¹⁰ In this case we consider discounts to be a reduction in costs that have been attributed to a sector in order to recognise exceptional circumstances. Appropriate attribution to different beneficiaries (including the public) is appropriate as a first step before discounts are considered.

¹¹ The broader policy considerations should also be explicitly captured in the fisheries management objectives for consistency and transparency.

Government chooses to intervene in the market there should be a transparent decision-making process supporting this intervention. Any social implications should be taken into consideration in determining whether a government subsidy or discount applies against the fully attributed costs to some user sectors (as set out above). The level of government subsidy, if any, to be provided should be clearly documented.

2.3. *How should charges be designed?*

The Panel found the current reliance on recovering costs using a mixture of levies and fee-for-service to be consistent with policy and generally applied appropriately.

Recommendation 8: The 'revise and reset' process should consider the appropriate use of levies and fee-for-service to ensure the mix is consistent with any revised attributions and with the principles of efficient and equitable cost recovery.

3. *Management Processes*

3.1. *Frequency and scope of review*

The Panel noted the 2009 independent review findings and recommendation for establishing a regular benchmarking analysis (perhaps every 3-5 years) of PIRSA's management and regulatory activities and SARDI's research activities and the costs of these activities. The authors of the 2009 review recommended that the results of such analyses should be made publicly available to improve transparency and ensure regulatory and research activities and costs are efficient, effective and contemporary. This recommendation does not seem to have been implemented by government. However, the Panel noted in the PIRSA Corporate Plan 2022-23 a commitment to benchmark and analyse performance to inform decisions.

The Panel found support within PIRSA, SARDI and industry for regular benchmarking analysis (every 3-5 years) of PIRSA's management and regulatory activities, SARDI's research activities and the costs of these activities. In fact, the majority of industry indicated that they saw this benchmarking requirement as so important they would support the costs be recovered.

Recommendation 9: The revised cost recovery framework should include a clear timetable for regular benchmarking of PIRSA and SARDI activities and costs.

3.2. *Stakeholder engagement and consultation*

The Panel sensed that there is a mismatch in the way PIRSA and some within industry view the consultation process. Industry viewed cost recovery as a negotiated outcome, with some seeing this process being based firmly on the original agreed arrangements for cost recovery in South Australia set out in 1995 under FMP#7 (Hall,1995). PIRSA considers the cost recovery process as a consultation following which PIRSA makes the final decisions. This contributes significantly to the tension around this process.

The Panel's recommended 'revise and reset' process is intended to engender greater trust, confidence and transparency in the structures and processes that sit behind cost recovery, on the assumption that if industry trusts the structures and processes (attribution model, compliance risk model, benchmarking processes and costing model) there will be greater acceptance of outcomes and lower transactions costs.

The Panel identified lack of trust between PIRSA and sections of industry as one of the primary reasons for the current unsustainable and challenging situation noting that this has manifested as an environment of suspicion. This has reached the low point that even previously recovered costs refunded to a fishery is deemed by industry as evidence of PIRSA and/or SARDI failing

to deliver previously agreed services and thus exhibiting further their inability to properly implement cost recovery. As set out earlier in this report the Panel is of the view that the cost recovery framework needs to provide a clear pathway for determining these matters of 'unders and overs' including risk assessment, options for management and impact of cost on licence holders.

The Panel noted that there is currently no over-seeing 'cost recovery advisory body' that includes industry representation that could help to diffuse tensions and provide industry with confidence in the cost recovery system. The Panel also noted that the 2009 cost recovery review advised that the previous Fisheries Council 'gave confidence to industry that the cost recovery policy principles were being applied appropriately', yet this structure was removed in 2015 and replaced with an internal PIRSA group.

Recommendation 10: The Panel recommends the establishment of an over-seeing 'cost recovery advisory body' charged with responsibility to consider and advise on broader sector-wide cost recovery policy, principles and implementation issues.

The Panel notes the establishment of the new South Australian industry peak body and proposes this group work with PIRSA which may alleviate the requirement to establish another body.

3.3. *Monitoring and Performance Reporting*

The Panel noted that annual compliance risk profiles are developed in conjunction with industry in each fishery covering all main activities in a fishery (e.g., quota management, closed areas, undersize, protected females, gear use, TEPs, failure to report fishing, no CDR, disease management). Compliance Performance Reports are provided to industry every six months (usually drafted in a form requested by industry).

PIRSA's Annual Reports on Service Delivery document key deliverables and are provided to relevant industry groups but do not include reported actual against budgeted expenditure across programs, or any measures of outcome (i.e., whether cost recovered activities are meeting intended objectives).

AFMA acquits its cost recovered expenditure each year and adjusts levies in the following year for each fishery for any over or under recoveries. All cost recovered activities are subject to a detailed annual review as part of AFMA's budgeting processes.

New Zealand undertakes regular reporting to stakeholders about the performance of cost recovered services to support improved transparency and accountability for delivery of efficient and effective services. It is intended that reporting includes a wider range of information, including actual and forecast breakdowns of the types of costs that are involved in service delivery (both direct and indirect costs), service volumes and achievement of service standards.

Recommendation 11: A comprehensive cost recovery performance framework be developed and that the recommended revised CRIS (see Recommendation 5) report appropriate outcome, output and input performance measures.

4. *Services provided*

4.1. *Management*

The Panel received positive feedback from industry about activities and costs associated with PIRSA's fisheries management program, noting that this generally comprised the smallest component of most fisheries recovered costs.

4.2. Compliance

Compliance, which generally comprises the second largest PIRSA-related¹² cost component in all fisheries, stood out to the Panel as the most contentious area of service delivery in PIRSA's fisheries program and is the area in need of repair most urgently.

The Panel found PIRSA and industry have views that differ markedly on the best compliance approach to managing fisheries. PIRSA appears to apply a very precautionary and risk averse approach, with many in industry of the view this is based on a somewhat outdated attitude to compliance. There was a view that PIRSA applies a 'rinse and repeat' compliance program in some cases. Some in industry have experience within other jurisdictions, and when comparisons are made, they noted that these other jurisdictions take an approach that new compliance ideas are possible, examined transparently in conjunction with industry and rejected only when determined that they cannot be implemented. They feel PIRSA does not follow this approach.

Those in industry with experience in Commonwealth fisheries outlined how AFMA seems prepared to investigate changes to management practices and clearly outline 'upfront' how activities and costs may change should a new approach be agreed (e.g., cameras, e-logs, VMS, other technology). The AFMA Corporate Plan states *"We are actively committed to minimising the regulatory burden of compliance, while continuing to ensure that the legislative requirements are met."* A performance measure in the AFMA Corporate Plan is to increase the number of empirical data collection services offered electronically.

The Panel noted the PIRSA Corporate Plan 2022-23 commits to resetting the operating environment by removing barriers to economic growth of primary industries and ensuring policy and legislation are fit-for-purpose to underpin effective responses and efficient systems. The Plan highlights the need for technological innovation capabilities aligned with PIRSA priorities and to driving adoption of emerging innovative production practices and technologies. The Plan included improvements to electronic catch and disposal records for all quota-based fisheries.

Some within industry claims there is little trust within PIRSA that industry will comply with management arrangements (regardless of claimed nil/low levels of incidents/breaches over many years past). Similarly, industry feels that PIRSA does not accept industry has the capacity to take greater responsibility for self-compliance that comes with the increased incentives of higher quota/licence values, the need for longer term outlooks to support that investment, a more corporate approach and the overall improved professionalism in industry.

Industry's preference is for a more contemporary approach to compliance with greater self-responsibility and greater acceptance of technological advances all operating under a PIRSA 'trust and verify' process. PIRSA advised that they are very supportive of technological advances and has recently funded (at no expense to industry) e-CDRs, e-Logbooks, and is continuing to drive digital transformation in the management of fisheries.

Industry has a range of issues with the current PIRSA compliance approach:

- perception that there is no responsible, contemporary risk assessment approach applied (again based on claimed nil/low levels of incidents/breaches and technological improvements),
- perception that the process lacks transparency/consultation,
- perception that the levels of service are often not justifiable (even in fisheries where recovered costs are relatively low, the participants sometimes do not accept service

¹² Based on figures provided to the Panel by PIRSA, research costs were the largest cost component for commercial fisheries in South Australia

levels and activity costs allocated to their sector but they don't want to 'rock the boat' by raising this as an issue),

- a belief that compliance costs attributable to the recreational sector are charged to them and that the process is not responsive to industry-driven initiatives.

There is also a fundamental clash of views regarding the appropriate attribution of policing and enforcement activities and outcomes with industry arguing that these costs should not be attributed to industry. The Panel's review of theoretical issues earlier in the report related to cost attribution and of attribution processes in other jurisdictions suggest there may be grounds for these components of compliance costs to be paid by Government, at least in part. The distribution of benefits of these activities is complex. All sectors benefit in proportion to their share of the resource in terms of ensuring sustainability of the resource and enforcing property rights. Commercial fisheries benefit from compliance and enforcement activities in recreational fisheries and vice versa. Compliant fishers benefit from enforcement preventing non-compliance of others. The community also benefits by ensuring their resource is used sustainably.

Also, an argument can be made that since the fish are typically owned by the State in the relevant waters, at first principle the relevant State is responsible for policing and enforcement. Even when there are licences issued to fish commercially, any wrongdoing takes place in open access/non-exclusive waters and to a stock which is State owned. The benefits of full compliance accrue directly to the State who owns the stock and only indirectly to individual licenced commercial fishers.

This line of argument would conclude that the wrongdoing is against the State who owns and manages the fish (and prosecutes charges), not the individual commercial fisher. It is the State who has decided to manage the fishery as an economic and social resource for a range of users and is therefore charged with meeting management objectives for sustainability and therefore for controlling extraction.

Policing and enforcement costs are differentiated from those costs of complying with the Individual Transferable Quota (ITQ) system (such as auditing landings, quota transfers, quota monitoring) which would not be required were there no commercial fishing and ITQ system to manage. These should be cost recovered.

Many New Zealand stakeholders noted in a 'first principles' review of cost recovery that compliance costs impact on their ability to remain competitive, and that it is not always possible to pass these costs on to consumers and that it is important to consider the impact on growth in export markets and wider economic objectives. Government did agree that it is important to consider how charges might impact on market competitiveness (or other management and regulatory objectives). It was highlighted in this review that in some cases it may be appropriate to consider recovering less than full costs or to phase in cost recovery.

Recommendation 12: The broader attribution of benefits arising from policing and enforcement activities should be further explored as part of the recommended 'revise and reset' process.

Comments made by industry indicated that the PIRSA risk assessment model and processes that drive compliance service levels, and hence costs, appear to not translate observed improvements in compliance or improvements in technology, industry processes or fisher behaviour that could reasonably be expected to result in lower compliance needs and/or costs to industry. While industry may make these improvements regardless, on the basis of the direct industry benefits they confer, failure to translate them to lower recovered costs, or uncertainty about this occurring, will dampen investment and the incentive to comply. Where possible, industry are seeking greater understanding of how the compliance model works, and what the impact on recovered costs of industry-driven improvements will be.

The AFMA Compliance Risk Assessment is undertaken in consultation with key stakeholders. Ongoing monitoring and review is undertaken during the course of the year to ensure that any new or emerging risks are identified and managed effectively. In accordance with the National Compliance and Enforcement Policy, AFMA adopts a risk-based compliance approach enabling AFMA's resources to be deployed to target areas when required and where most effective. It involves a series of steps to identify and assess non-compliance risks and then apply appropriate actions to mitigate these risks. The methodology utilised for risk analysis is detailed in AFMA's National Compliance Risk Assessment Methodology. PIRSA advised that it follows a similar approach through use of a regionalised model consistent with most of the fisheries state agencies applying, traditional compliance strategies through education, deterrence and enforcement. PIRSA emphasised to the Panel that a mature fishery should expect about a third of the effort undertaken by compliance to be divided between each of these strategies.

Recommendation 13: An independent review/benchmarking of PIRSA's compliance program and costs is undertaken as part of the 'revise and reset' process and that this include:

- Review of the compliance risk model and of the consultative arrangements to determine the risk profile for each fishery
- Assessment of the scope for using external compliance contractors for some more straightforward aspects of compliance (e.g., weighing product, boundary checking, gear checking, data confirmation)
- Assessment of other jurisdictional approaches to new technological opportunities for compliance delivery
- That, as part of the 'revise and reset' process, this review/benchmarking be paid for by government

Recommendation 14: A review of the PIRSA compliance program and benchmarking of compliance costs is undertaken on a regular basis (3-5 years) and that these activities are cost recovered proportionally across sectors.

4.3. *Science and Research*

There were several concerns raised by industry that they believed the research applied in the majority of South Australian commercial fisheries was not sophisticated (e.g., data input, CPUE updates annually, simple stock assessments), but resulted in very expensive research projects when compared to what they perceive to be more sophisticated research in similar fisheries in other jurisdictions.

The Panel recognises this is hard to compare with other jurisdictions as was seen with an historical rock lobster research benchmark study provided by industry.

AFMA required research is contestable to a point and each research project is approved by the nominated fishery Research Advisory Group (RAG), the subject of a competitive call to research providers, and is costed separately for full transparency.

As with other management costs discussed earlier (e.g., policing and enforcement), there is an argument that the public, via government, should also contribute to research directly supporting fisheries management.

Given the benefits communities receive by i) having a fishing industry, ii) ensuring it is operating sustainably, and iii) the public good nature of much of the research undertaken, research directed at ensuring these benefits are achieved is of direct benefit to the broader community.

In New Zealand, research targeted at general biodiversity or geographic features, land or water use is taxpayer funded in recognition that all the different groups of beneficiaries or risk creators (exacerbators) cannot be efficiently or equitably identified or charged.

Recommendation 15: An independent review of PIRSA's research program and costs as part of the 'revise and reset' process is undertaken.

Recommendation 16: SARDI to produce fully-costed research on a project by project basis for each individual fishery's research program and then apply any State contributions, 'in-kind' contributions, and non-inclusion of overheads to provide full transparency.

Recommendation 17: A review of the SARDI science program and benchmarking of science costs is undertaken on a regular basis (3-5 years) and that these activities be cost recovered proportionally across sectors.

5 Other considerations

Current issues affecting cost recovery in commercial fisheries need to be considered in light of the broader contextual factors that are impacting fisheries and the marine environment to ensure fisheries management funding is sustainable into the future.

For example, climate change driven environmental impacts, heightened demands on the marine estate for traditional and non-traditional uses as the Blue Economy evolves, and various issues related to social licence, are transforming the policy, management and operational landscape of the marine estate for Government, managers and industry alike, in many cases putting pressure on industry viability and management resources, and on industries capacity to fund management programs. At the same time, management agency budgets are under increasing pressure due to cost of inflation and, in some cases, reduced central budget allocations.

In the context of cost recovery, in addition to ensuring appropriate and efficient levels of service delivery across all fisheries management programs, the contestable provision of service delivery and minimising unnecessary regulatory burden, Government should:

- Futureproof the cost recovery attribution model by:
 - Ensuring cost recovery attribution models and processes are responsive to growth in the level, types and variations of use made of the marine estate/environment by being capable of recognising where fisheries management activities may benefit groups other than commercial fishers and where the activity of these other groups may be creating or exacerbating risk to fisheries sustainability.
 - Recognising that risks to sustainability created by global pressures, such as climate change, require substantial investments in fisheries science and research and that the cost recovery attribution model must be capable of supporting fair and justifiable attributions of activities/costs that arise as a result.
- Look for opportunities to expand the use of co-management arrangements between PIRSA and industry, particularly where these would result in more efficient delivery of services.
- Explore other funding streams. For example, as the Blue Economy evolves there may be opportunities for alternate revenue or cost savings by exploiting synergistic needs across marine user sectors, particularly in data collection, but potentially in other management activities, such as planning, compliance and research. While such collaborations should be sought out on a sector-by-sector basis, it will also be important for fisheries (industry and PIRSA) to be proactive in engaging with integrated oceans management processes and initiatives as they unfold at all levels of government.

- Make greater use of fee-for-service charges for services (e.g., data provision) provided to other government agencies and outside organisations/groups.

The Panel identified other factors relating to more general processes and systemic issues within PIRSA that it believes may be impacting the functioning and performance of the cost recovery system. One area is that PIRSA's IT systems may not be capable of supporting the efficiency gains and cost savings that could reasonably be expected to flow from some Industry process improvements and investments in technology (e.g., electronic logs, CDRs, VMS or weighing systems, pot locators). If so, this will dampen the incentive for industry to innovate and invest, and ultimately reduce competitiveness.

Appendix 1 Biographies of ICRRP Members

Brett McCallum

Brett has over 40 years experience in the commercial fishing, pearling and aquaculture industries commencing with the MG Kailis Group in Fremantle in 1979.

The majority of his career has been as CEO of two major peak fishing industry representative groups - the WA Fishing Industry Council and the Pearl Producers Association.

Brett is currently a Commissioner for the Australian Fisheries Management Authority and a past Deputy Chair of the Fisheries Research & Development Corporation.

He has represented the commercial fishing industry in a number of state and federal government working groups and committees. His expertise covers commercial fisheries management, government policy setting, natural resource management, consultation, economics and business management.

He has held senior managerial positions with several leading Australian fishing, pearling and exporting companies including the MG Kailis Group, Broome Pearls and Lombardo Seafoods.

He is also currently:

- Chair - Fisheries Research and Development Corporation Research Advisory Committee (in both WA & SA);
- Chair - Australian Aquatic Animal Welfare Strategy Working Group;
- Chair - Offshore Snapper Fishery Advisory Committee in the NT;
- Consultant – Safety and Training – WA Fishing Industry Council; and,
- Director of a private fisheries consulting business since November 2015.

Brett has a strong belief in inclusiveness and a passion for empowering industry stakeholders through providing them with the necessary information to make informed, responsible decisions about their industry. He actively encourages younger people in industry to take on leadership roles - often mentoring them along the way.

Dr Sean Pascoe

Sean is a marine resource economist with over 35 years of experience in the economic analysis of fisheries and the marine environment across a range of sectors:

- Australian Bureau of Agricultural and Resource Economics, (10 years)
- University of Portsmouth, UK (as Professor of Natural Resource Economics and Director of the Centre for the Economics & Management of Aquatic Resources (CEMARE) (12 years),
- CSIRO (2006 – current).

Sean has worked with the UN Food and Agricultural Organisation, the OECD and the European Commission on several international fisheries management issues. He also worked with the UK Government as an advisor on the Prime Minister's Strategy Unit "Net Benefits" study considering fisheries reform in the UK, and on a study on cost recovery for UK fisheries.

Since returning to Australia in 2006, Dr Pascoe has worked with several key Australian fisheries, including the Commonwealth Northern Prawn Fishery, the Southern and Eastern

Scalefish and Shark Fishery and the Torres Strait Rock Lobster Fishery, as well as several State fisheries in Queensland and NSW.

He is a current member of the Queensland Fisheries Expert Panel, the AFMA Economics Working Group and a recent member of the NSW Total Allowable Fishing Committee. He was also recently President of the International Institute of Fisheries Economics and Trade (IIFET) and is currently an Adjunct Professor of Economics at the Queensland University of Technology.

Dr Sarah Jennings

Sarah is a natural resource economist with broad experience in applying sound economic thinking and analysis (quantitative and qualitative) to inform marine management; and in working in interdisciplinary teams to address complex system-level problems (e.g. climate change).

Sarah has played a central role in developing economic capability in marine economics, through her extensive research, research training, teaching, administrative and leadership experience in the university sector, as leader of the FRDC's Economic Capability Building Project and Co-coordinator of the Human Dimensions Research Subprogram.

Now retired from the university sector, Sarah maintains a strong commitment to working in roles that capitalize on her skills and experience to contribute to sustainable and equitable economic, social and ecological outcomes in the marine environment at all scales.

She holds an adjunct position at the University of Tasmania and is a founding member of the Centre for Marine Socioecology; she is a member of the Commonwealth SERAG, SESSFRAG, and SEMAC, and of the AFMA Economics Working Group.

Sarah maintains a small research program through her occasional involvement in a number of projects, including the FRDC's Impact of Covid-19 on Australian Fisheries project.

Appendix 2 Terms of Reference – Fisheries

SOUTH AUSTRALIAN COMMERCIAL FISHERIES COST RECOVERY REVIEW

INDEPENDENT COST RECOVERY REVIEW PANEL

Background

The South Australian Government introduced a Cost Recovery Policy, which the Department of Primary Industries and Regions (PIRSA) has been operating for approximately 20 years. The policy operates from the premise that South Australia's aquatic resources are owned by the State and managed by PIRSA on behalf of the South Australian community. Any costs associated with government services that arise as a direct result of commercial access to the resources, are recovered partly from commercial licence holders through regulated licence fees.

These services include, but are not limited to, management, policy, scientific monitoring and stock assessment, compliance and licensing. PIRSA established a cost recovery policy to enable consistent decision making on the appropriate recovery of costs of PIRSA's goods and services which is based on the Australian Government Cost Recovery Guidelines 2014.

In order to ensure the State's public aquatic resources are managed in a sustainable, efficient and cost-effective manner a review process was established under the PIRSA cost recovery policy, which is undertaken on a five-year cycle to ensure best practice arrangements are maintained. The PIRSA cost recovery policy has been independently reviewed by Deloitte in 2009 and 2015 and KPMG in 2018. These reviews have typically focused on incremental improvements to, or streamlining, the existing system of cost recovery, and hence on the process or mechanics of the system rather than its inherent economic logic and the model itself. Irrespective of the findings of the independent reviews and the recent improvements in the cost recovery process, there remains significant and increasing challenges with the current process.

In March 2022, the South Australian Minister for Primary Industries and Regional Development announced the Government's Election Commitment to undertake an independent cost recovery review of the current seafood sector cost recovery policy/model to ensure it is sustainable and appropriate.

Across Australia, there is significant variability in the cost recovery models used in the various jurisdictions, from the current activity-based model used by PIRSA to a Gross Value of Production (GVP) access fee approach used by Western Australia. A GVP cost recovery model has been raised by various fisheries industry sectors as a viable alternative to the current approach used in South Australia.

In order to address the Election Commitment, the Minister has established an Independent Cost Recovery Review Panel to review PIRSA's current cost recovery arrangements. The Panel will comprise members with expertise in fisheries economics, management and commercial business practices. As part of this review, it will be necessary for the Panel to consider alternative cost recovery approaches that are fair and equitable and assess these against current arrangements. In undertaking the review, submissions will be invited from the commercial fisheries sector, other interested stakeholders, PIRSA and other relevant government agencies.

Independent Panel Members

Membership of the Independent Cost Recovery Review Panel comprises:

- Mr Brett McCallum – Chair and fisheries management and commercial business expertise
- Dr Sarah Jennings – Fisheries economic expertise
- Dr Sean Pascoe – Fisheries economic expertise

Purpose

To provide advice to the Minister on the most appropriate, fair and equitable cost recovery arrangements for the commercial fisheries sector in South Australia.

Scope

In developing its recommendations, the Independent Cost Recovery Review Panel is to:

- Consider existing government cost recovery policies in South Australia and other jurisdictions.
- Consider previous cost recovery review reports (i.e., Deloitte, KPMG), as well as the recently commissioned report by independent consultant SG Heilbron, to review the current economic logic, consistency and transparency of the current cost recovery policy framework in South Australia, paying particular attention to the different resources involved and varying risk levels.
- Consider the above reports and any business cases detailing alternative approaches for the commercial fisheries sector,
- Examine and report on the application of the current cost recovery process and policy in South Australia in relation to other jurisdictions for the commercial fisheries sector,
- Examine, assess and, if appropriate, recommend alternative cost recovery processes and policies applied in other Australian jurisdictions and internationally, for the commercial fisheries sector,
- Consider any other matters considered relevant by the Panel or the Minister.

In achieving this task, the Panel will be required to:

- Engage with PIRSA to identify the data, information, reports and policies necessary to undertake the review and analysis.
- If deemed necessary by the Panel, undertake consultation with technical experts familiar with cost recovery models used for fisheries.
- Consult (online or face-to-face) with commercial fisheries sector, other relevant stakeholders and government agencies.
- Consider submissions invited from the commercial fisheries sector, other relevant stakeholders and government agencies.
- Explain and justify the recommended cost recovery approaches to the Minister in a written report and be available for discussion of the report recommendations.
- Maintain full records of all activities undertaken by the Panel.
- Individual Panel members may be required to undertake separate tasks and variable time commitments.

PIRSA will provide relevant background information, any additional relevant information requested by the Panel where such information exists, and access to PIRSA's files regarding relevant matters. PIRSA will also provide executive support and administrative services to assist with the deliberations of the Panel.

Reporting Relationship

The Panel will report directly to the Minister.

Deliverables and Timeframe

A draft report of the Panel is to be completed by 30 April 2023, subject to all necessary data and information being provided to the Panel in a timely manner.

Appendix 3 Issues raised by Commercial Fisheries Submissions and Consultations

Industry representatives raised several issues relating to cost recovery and the provision of fisheries management services. These were both through written submissions and at the in-person meetings. These issues, reflecting the perceptions of industry presented to the Panel, are summarised below. The perceptions have not been independently validated by the Panel.¹³

Industry Status

- It is a critical time for this Cost Recovery Review as there has been increased costs and reduced returns for many in industry and this has driven some licence fees well beyond their capacity to pay. The majority of industry are operating in the regions where costs are higher than in metropolitan areas.
- In most commercial fisheries, the base management was developed in the 1970s – 90s. Since the 2000s, industry management has become much more sophisticated – licence values have increased, greater responsibility placed on industry to take a long term perspective, there has been many years of restructure and reduced catches – but PIRSA has not been reactive enough to make the shift in their service delivery.
- The quota system drives the incentive to become more efficient. This reduces the need for taking risks and the ‘race-to-fish’. The reduced risk profile of industry needs to be reflected in reduced government services delivery as well.
- Time for a recalibration/resetting of cost recovery principles and activities delivered by PIRSA to recognise the current make-up of each fishery and its operating status.
- Stability of a cost recovery process allows longer term decision making and investment by industry and enhanced economic efficiency.

Cost Recovery

- Cost recovery is not applied in many parts of the world
- Cost recovery is an economic issue not a social issue. Cost recovery guidelines do not refer to social outcomes.
- Cost recovery and implications have been under consideration for some time and previous reviews have simply looked at whether various cost elements were justified under the existing policy and framework
- Industry has no issues with cost recovery as long as:
 - it is equitable between all users/ beneficiaries
 - is efficient and effective (stated in the Act),
 - it does not allow cross subsidy
 - does not threaten viability, or unduly stifle industry
 - is transparent and accountable
 - recognises new technology (e.g., digital reporting, e-weighing, cameras, VMS)
 - recognises improved industry risk profile (e.g., quota management, reduced operators, no serious breaches for many years)
- There has never been a comprehensive re-negotiation of the fundamental principles since 1995 (referring to Hall (1995) FMP#7).

¹³ Responses to these perceptions from PIRSA have been taken into consideration when finalising this report. The perceptions are reported as presented for transparency.

- Initially a cost recovery committee existed and included industry (Fisheries Council) but was disbanded in 2015. This was replaced with an internal PIRSA process with no industry representation.
- Sectors which are stable and have more fully exploited stocks (e.g. Spencer Gulf Prawn, Southern Rock Lobster) were generally more content with the current cost recovery approach and outcomes, than were those in the midst of recalibrating as fisheries and where new approaches and ways of doing things may be needed.
- The current process is very resource intensive – for both industry and PIRSA (e.g., annual basis, detailed reports, multiple meetings).
- Trust has been lost between some industry sectors and PIRSA. Less so in those fisheries which have had stable management over time and are running at capacity.
- Concern that the PIRSA overall budget is fixed, and that numbers are just moved around between fisheries (some up/some down by the same amounts in any year)
- Appears PIRSA apply a ‘rinse and repeat’ approach to management and research (e.g., Pipi fishery)
- Volatility in levies from year to year has seen licence fees charged to industry significantly varying each year (e.g., Sardine compliance costs in 2023/24) with little explanation. This can pose issues for fisheries looking to undertake business planning exercises and can be a barrier to investment.
- Industry expect core allocation from government to PIRSA to cover the costs associated with recreational and other non-cost recovered sectors.
- Four-year cost recovery budget cycles a positive outcome.

Government

- The new SA Premier has stated that cost recovery should provide more flexibility during increasingly volatile market conditions while the Treasurer has stated there will be no new taxes or tax increases.
 - Industry interprets this as a need to reduce costs to industry, no increases in costs and no cost shifting between sectors.
- Improving access rights will provide certainty and incentive for industry to take long term view.
- High values in fishing licences acts as a further incentive for industry to comply.
- Exceptional circumstances should apply to fisheries under financial pressure from natural disasters (e.g., Lakes & Coorong - flood, drought, waterflow management decisions, recovering protected species) as it does to land based primary industries.

Alternate models of cost recovery

- The %GVP model may suit some but not all and can create distortions in fees and through cross subsidy.
- The %GVP model is a ‘resource rent tax’, not intended for the recovery of costs of service delivery from beneficiaries.
 - The %GVP model does not encourage industry to be inventive or drive efficiencies as there is no reward for improving outcomes.
- Concerns that services would be cut if revenue collected does not cover the PIRSA expenditure budget.
- Increases volatility in revenue and reduces certainty for all parties.
- One-size-fits-all cost recovery model will not suit all fisheries.
- There may be benefit in fit-for-purpose cost recovery policies for fisheries with multi-species, multi-user groups, high public good benefits as per the Minister’s letter of 9/2/23

(e.g., MSF). In multi-species, multi-sector fishery (e.g., MSF), suggested cost attribution for quota species and baseline fee for non-quota species spread across users.

Transparency

- Some fisheries are comfortable with the current cost recovery levels (which is low compared to their GVP) but still feel transparency is lacking, especially around compliance activities and costs.
- It is not transparent that the recreational sector is required to contribute to management costs.
- No knowledge of attribution of costs across sectors fishing the same species (e.g., calamari/King George Whiting – MSF, prawn trawl, recreational)
- As monopoly suppliers, PIRSA and SARDI are required to meet very high accountability and transparency standards but are not achieving this.
- No contestability for services, especially compliance and research. Research should be reviewed for science and cost regularly.
- No performance assessment or accountability against CRIS. Often work delayed but cost not reduced.
- Alternate monitoring systems (e.g., electronic weighing, cameras at unload stations, e-logs) should result in reductions in costs of compliance but this is not happening or not happening quickly enough.
- Not clear how 'accommodation cost savings' (\$850k pa) from PIRSA shift to SARDI premises is being applied to cost recovery budget.

Compliance and Risk

- South Australia is the only jurisdiction that charges industry directly for all compliance activity.
- There appears to be no contribution to compliance costs made by recreational or indigenous sectors or by government (i.e., industry is cross-subsidising compliance activities relating to these groups).
- Compliance department of the view that only commercial operators will breach rules and set program for lowest common denominator, and there is no risk assessment review.
- Compliance department has too much input into developing annual fisheries management program. Fisheries management program should be determined and rules laid down first then compliance determined to manage those rules.
- Serious review required of cost recovery of compliance (monitoring and enforcement). This part of compliance should be funded by government in the same way as other parts of community (e.g., police). Should be the same as AFMA.
- Compliance in some fisheries greater than 55% of total costs despite no prosecutions in over 10 years and many, many other quota risk mitigation arrangements introduced.
- Lack of meaningful consideration of industry concerns during cost reviews (e.g., NZRL changes to 27 vessels and 270t annual catch in 2022 but compliance remains the same as 63 vessels and 600t catch in 2000).
- Compliance for managing integrity of quota systems should be paid by industry.
- Insufficient recognition of industry compliance performance. The PIRSA compliance activities continue applying 'old school' compliance approach that is set at lowest common denominator. No assessment of the improved risk profile of particular activities taken into account.

Research

- No contestability.
- No regular review of science or activity delivery cost.
- SARDI research costs are very high (overheads and research vessel costs high) for what is perceived as essentially very basic harvest strategies, data collection run through simple models and using unstandardised CPUE in the main.
- South Australian research not as sophisticated as AFMA yet same if not more expensive.
- Regular lack of delivery against agreed timelines and failure to meet budgeted costs.

Co-management

- Is a stated priority of PIRSA CEO for improving service delivery.
- Should offset PIRSA costs (less PIRSA staff to deliver services) to a significant degree and yet no savings are appearing in the budgets for fisheries.

Legislation

- Removing unnecessary regulation is also of benefit.
- Legislation should keep pace with technological initiatives delivering more efficient services and outcomes, particularly for compliance (e.g., electronic monitoring, e-logs)

Appendix 4 Distribution of benefits between consumers and fishers

The economic theory underlying the distribution of benefits between consumers and fishers identifies the level of consumer and producer surplus received by each. Consumer surplus is the additional benefits that consumers receive over and above the price (P) they are required to pay for the fish given the quantity (Q) supplied. This is the green area under the demand curve in Figure 2. Producer surplus is the level of profits received by fishers given quantity Q , determined from the level of revenue ($P \cdot Q$) less the costs of fishing, defined by the area under the supply curve. This is the blue area above the supply curve in Figure 2. This producer surplus represents a number of different types of “rent”, including intra-marginal rent reflecting different levels of individual fisher efficiency and also heterogeneity in cost structures within the fleet. The total benefits generated in the fishery is the sum of the consumer surplus plus producer surplus.

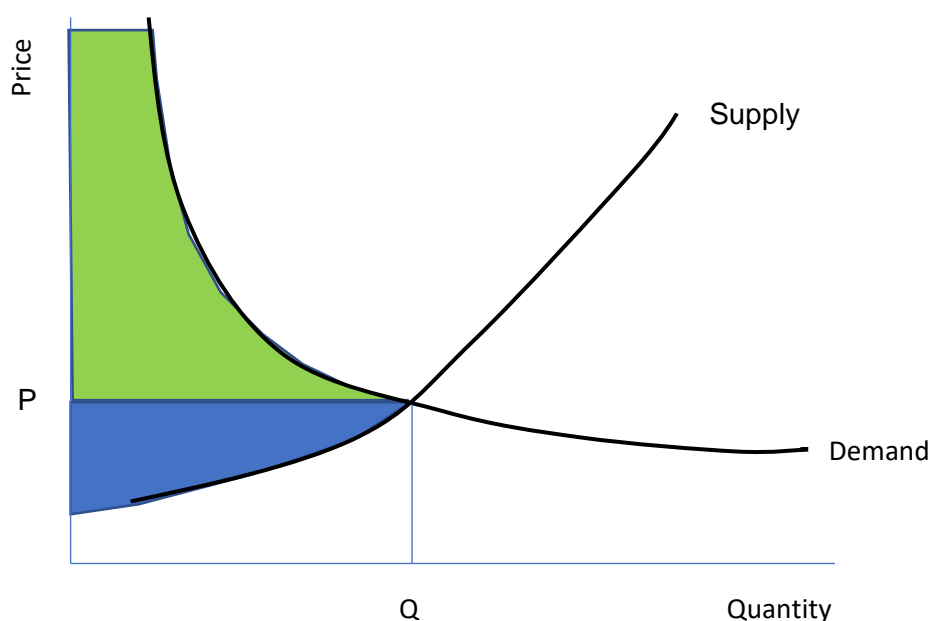


Figure 2. Producer and consumer surplus in an unrestricted fishery

The share of total benefits accruing to consumers can be derived given the characteristics of demand and the fishing fleet. We derive the (price dependent) demand function as $P = \alpha Q^f$ where $f < 0$ is the own price flexibility. That is the price received for the species on the market decreases as the quantity landed increases. The demand curve also represents the average revenue curve (important for the next section).

The supply of product (excluding the stock input for simplification) reflects the marginal cost (MC) of production. That is, the additional cost of supplying an additional unit of output. More fish will be supplied provided the price is greater than the marginal cost, and the equilibrium point is where the price is equal to the marginal cost. Beyond this point, the cost of capturing an extra unit of fish exceeds the price received. Given this, we can identify a supply curve given by $MC = P = \beta Q^c$ where $c > 0$ represents increasing marginal cost with quantity supplied (the steepness of the supply curve), and $c = 0$ represents constant marginal cost (implying a perfectly homogeneous fishing fleet).

Given this, we can estimate consumer surplus (CS) as

$$\begin{aligned}
 CS &= \int_0^Q aQ^f dq - PQ = \frac{1}{f+1} aQ^{f+1} - PQ = \frac{1}{f+1} PQ - PQ \\
 &= PQ \left(\frac{1}{f+1} - 1 \right)
 \end{aligned} \tag{1}$$

and producer surplus (PS) as

$$\begin{aligned}
 PS &= PQ - \int_0^Q \beta Q^c dq = PQ - \frac{1}{c+1} \beta Q^{c+1} = PQ - \frac{1}{c+1} PQ \\
 &= PQ \left(1 - \frac{1}{c+1} \right)
 \end{aligned} \tag{2}$$

The share of consumer surplus (CS/(CS+PS)) is then given by

$$\begin{aligned}
 \frac{CS}{CS+PS} &= \frac{PQ \left(\frac{1}{f+1} - 1 \right)}{PQ \left(\frac{1}{f+1} - 1 \right) + PQ \left(1 - \frac{1}{c+1} \right)} = \frac{\left(\frac{1}{f+1} - 1 \right)}{\left(\frac{1}{f+1} - 1 \right) + \left(1 - \frac{1}{c+1} \right)} \\
 &= \frac{\left(\frac{1}{f+1} - 1 \right)}{\left(\frac{1}{f+1} - \frac{1}{c+1} \right)}
 \end{aligned} \tag{3}$$

and the share of producer surplus is hence $PS/(CS+PS) = 1-CS$.

Given this, the share of consumer surplus given different cost coefficients (c) and price flexibilities (f) can be derived (Figure 3).

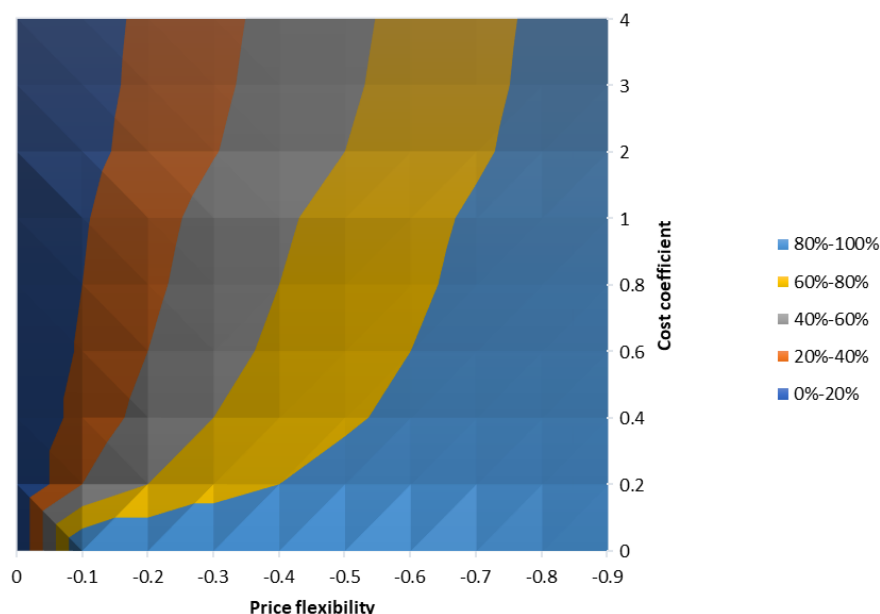


Figure 3. Share of CS in total benefits under different demand and supply conditions

Consumers are the main beneficiaries when price flexibilities are relatively high in absolute terms (i.e., a steeper demand curve) and fleets are relatively homogeneous (i.e., a fairly flat supply curve). Conversely, consumers gain little or no benefits when prices inflexible (i.e., low price flexibilities) irrespective of the cost structure of the fleet.

Price flexibilities for key SA species are not known. However, for key export species, price flexibilities can be assumed to be zero. Any consumer benefits would be realised in overseas markets and not in SA, so all benefits would accrue to producers. For domestically landed product, earlier studies elsewhere have found short run fish price flexibilities to be around -0.39 for high value species and around -0.63 for low value species (Pascoe et al. 2022), and short run prawn price flexibilities to be around -0.44 (Schrobbach et al. 2019). Given these price flexibilities, we would expect consumer benefits to be in the order of between 40% and 60% of total benefits with very heterogeneous vessels, and between 80% and 90% for very homogeneous vessels (Table 1).

Table 1. Consumer surplus share of total benefits, unrestricted fishery

Price flexibility (f)	Marginal cost parameter (c)								
	0	0.2	0.4	0.6	0.8	1	2	3	4
0	0%	0%	0%	0%	0%	0%	0%	0%	0%
-0.1	100%	40%	28%	23%	20%	18%	14%	13%	12%
-0.2	100%	60%	47%	40%	36%	33%	27%	25%	24%
-0.3	100%	72%	60%	53%	49%	46%	39%	36%	35%
-0.4	100%	80%	70%	64%	60%	57%	50%	47%	45%
-0.5	100%	86%	78%	73%	69%	67%	60%	57%	56%
-0.6	100%	90%	84%	80%	77%	75%	69%	67%	65%
-0.7	100%	93%	89%	86%	84%	82%	78%	76%	74%

Impact of management on the distribution of benefits

Management can impact the distribution of benefits through affecting the quantity landed. In quota fisheries, for example, this is an explicit limit.

How much quantity is impacted will depend on the objectives of management. Taking maximising industry profits as one extreme, then we can define the profit maximising level of output as that at which marginal revenue is equal to marginal cost.

First, we define total revenue as $TR = PQ = \alpha Q^{f+1}$, and hence marginal revenue as $MR = \frac{\partial(PQ)}{\partial Q} = (f+1)\alpha Q^f = (f+1)P$. As $f < 0$, marginal revenue will be lower than average revenue as defined by the demand curve. As before, the marginal cost defines the supply curve, given by $MC = \beta Q^c$

Profit maximisation occurs when marginal revenue is equal to marginal cost, such that $\beta Q^c = (f+1)\alpha Q^f$. Rearranging this provides an estimate of the new quantity that maximises profits, namely $Q^* = ((f+1)\alpha / \beta)^{-c+f}$. Substituting this into the demand curve equation ($P = \alpha Q^f$) gives the market price at this quantity, namely $P^* = \alpha \left[((f+1)\alpha / \beta)^{-c+f} \right]^f$.

These points can be seen in Figure 4. At the restricted level of supply, the price increases from P to P^* , and the marginal cost of industry decreases from P to P^\wedge . Industry benefits from both lower costs and higher prices received. Part of what was previously consumer surplus is also transferred to industry i.e. $(P^* - P)Q^*$.

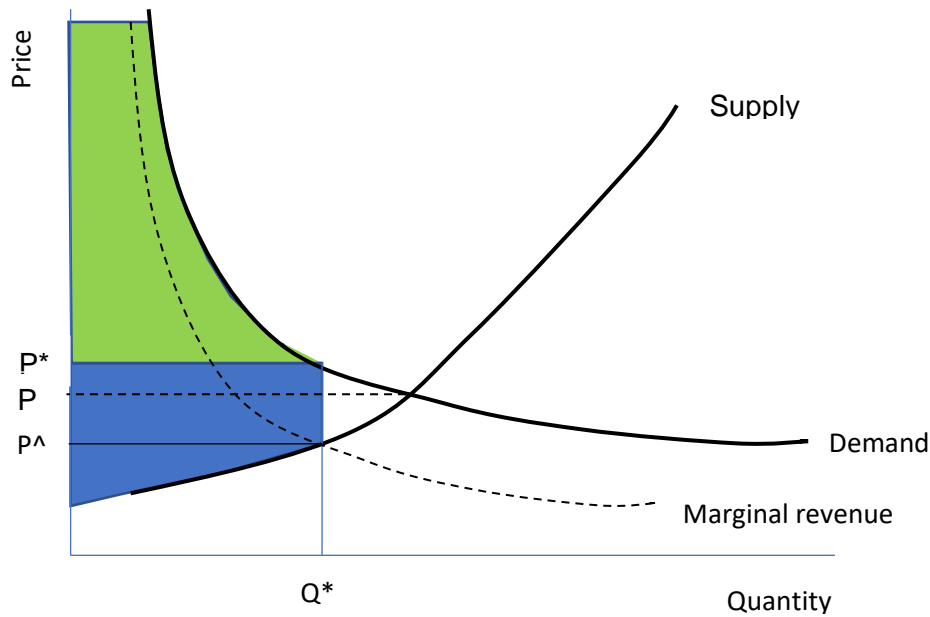


Figure 4. Producer and consumer surplus under restricted supply

Given this, we can redefine the level of consumer surplus to be:

$$\begin{aligned}
 CS &= \int_0^{Q^*} aQ^f dq - P^*Q^* = \frac{1}{f+1}aQ^{*f+1} - P^*Q^* = \frac{1}{f+1}P^*Q^* - P^*Q^* \\
 &= P^*Q^* \left(\frac{1}{f+1} - 1 \right)
 \end{aligned} \tag{4}$$

and producer surplus as:

$$\begin{aligned}
 PS &= P^\wedge Q^* - \int_0^{Q^*} \beta Q^c dq + (P^* - P^\wedge)Q^* = P^\wedge Q^* - \frac{1}{c+1}\beta Q^{*c+1} + (P^* - P^\wedge)Q^* \\
 &= P^\wedge Q^* - \frac{1}{c+1}P^\wedge Q^* + (P^* - P^\wedge)Q^* \\
 &= P^\wedge Q^* \left(1 - \frac{1}{c+1} \right) + (P^* - P^\wedge)Q^*
 \end{aligned} \tag{5}$$

We re-estimate the share of consumer surplus as:

$$\begin{aligned}
\frac{CS}{CS + PS} &= \frac{P^* Q^* \left(\frac{1}{f+1} - 1 \right)}{P^* Q^* \left(\frac{1}{f+1} - 1 \right) + P^\wedge Q^* \left(1 - \frac{1}{c+1} \right) + (P^* - P^\wedge) Q^*} \\
&= \frac{P^* \left(\frac{1}{f+1} - 1 \right)}{P^* \left(\frac{1}{f+1} - 1 \right) + P^\wedge \left(1 - \frac{1}{c+1} \right) + (P^* - P^\wedge)} \\
&= \frac{P^* \left(\frac{1}{f+1} - 1 \right)}{\left(\frac{P^*}{f+1} - \frac{P^\wedge}{c+1} \right)}
\end{aligned} \tag{6}$$

We can also express our prices as a function of the key model parameters. Given $P^* = \alpha Q^{*f}$ and $P^\wedge = \beta Q^{*c}$, we can express quantity as either $Q^* = (P^*/\alpha)^{-1/f}$ or $Q^* = (P^\wedge/\beta)^{-1/c}$. From this, $P^* = \alpha (P^\wedge/\beta)^{-cf}$ and $P^\wedge = \beta (P^*/\alpha)^{-cf} = (\beta \alpha^{cf}) P^{*-cf}$. This allows re-expression of [6] as

$$\begin{aligned}
\frac{CS}{CS + PS} &= \frac{P^* \left(\frac{1}{f+1} - 1 \right)}{\left(\frac{P^*}{f+1} - \frac{\beta (P^*/\alpha)^{-cf}}{c+1} \right)} \\
&= \frac{\left(\frac{1}{f+1} - 1 \right)}{\left(\frac{1}{f+1} - \frac{(\beta \alpha^{cf}) P^{*-cf-1}}{c+1} \right)}
\end{aligned} \tag{7}$$

where P^* is given by $P^* = \alpha \left[((f+1)\alpha/\beta)^{-c+f} \right]^f$ as above. In this case, the share of consumer surplus is dependent on the relative price and cost per unit of output (i.e., the α and β) as well as the price flexibility and slope of the supply curve.

An example for the case $\alpha=10, \beta=5$ (i.e., moderate price, moderate cost of capture) and $\alpha=20, \beta=1$ (i.e., high price species, low cost of capture) is given in Table 2. The difference between the shares in Table 2 and Table 1 reflect the transfer of benefits from consumers to producers between the unrestricted and restricted fisheries. This transfer is greatest when the base cost of fishing is low relative to the price received and the slope of the supply curve is relatively flat (i.e., a low value of c reflecting a homogeneous fleet). Even in such circumstances, and based on the price flexibilities seen elsewhere, consumers may still receive 30% to 50% of the total benefits generated through management. While this is substantially below the benefit share in an unregulated fishery, the consumer benefits may still be reasonable.

Table 2. Consumer surplus share of total benefits, maximising economic profits

Price flexibility (f)	Marginal cost parameter (c)								
	0	0.2	0.4	0.6	0.8	1	2	3	4
$\alpha = 10, \beta = 5$									
0	0%	0%	0%	0%	0%	0%	0%	0%	0%
-0.1	18%	16%	15%	14%	13%	13%	10%	10%	10%
-0.2	33%	29%	27%	26%	25%	24%	20%	20%	20%
-0.3	45%	42%	39%	38%	37%	36%	30%	30%	30%
-0.4	56%	53%	50%	49%	47%	47%	40%	40%	40%
-0.5	67%	63%	61%	59%	58%	57%	50%	50%	50%
-0.6	77%	73%	71%	70%	68%	67%	60%	60%	60%
-0.7	87%	84%	82%	80%	78%	77%	70%	70%	70%
$\alpha = 20, \beta = 1$									
0	0%	0%	0%	0%	0%	0%	0%	0%	0%
-0.1	10%	10%	10%	10%	10%	10%	10%	10%	10%
-0.2	21%	21%	20%	20%	20%	20%	20%	20%	20%
-0.3	31%	31%	30%	30%	30%	30%	30%	30%	30%
-0.4	41%	41%	40%	40%	40%	40%	40%	40%	40%
-0.5	51%	51%	50%	50%	50%	50%	50%	50%	50%
-0.6	61%	60%	60%	60%	60%	60%	60%	60%	60%
-0.7	70%	70%	70%	70%	70%	70%	70%	70%	70%

So do consumers benefit from fisheries management?

At face value, consumers may benefit more from an unregulated fishery as the higher quantity landed results in a lower market price and hence consumer surplus is a higher share of total benefits. However, if stocks are depleted, the marginal cost of capture is expected to increase. From Table 2, the consumer share of benefits (and indeed total benefits) decreases as the marginal cost of capture increases. Hence, while a regulated fishery may result in a transfer of some potential consumer surplus to fishers, ensuring the stock is at a sustainable level also increases the share of consumer benefits compared to under a higher marginal cost scenario.

The net effect is not apparent from the static analysis. However, an unregulated fishery is more likely to have a lower stock biomass than a regulated fishery, and hence the marginal costs are likely to be at the higher end of the scale. Moving to a regulated (or a better managed) fishery is likely to reduce the costs of harvest as the stock recovers, and hence increase the share of consumer surplus also, even if a greater share of the benefits accrue to the industry.

Can we recover a contribution to management costs from consumers?

The ability to recover any of the consumer surplus generated through providing fish to the local market is limited. Given that demand for most Australian seafood is relatively elastic (that is, it has a relatively low price flexibility), then any levy or tax imposed on seafood at the point of sale will result in a lower price to industry (i.e., $P^I < P$) and a reduction in the total quantity demanded (i.e., $Q' < Q$) (Figure 5). The net impact on consumer price will be small (i.e., $P^C - P$).

As a cost recovery mechanism, attempting to collect a return from consumers is inefficient.

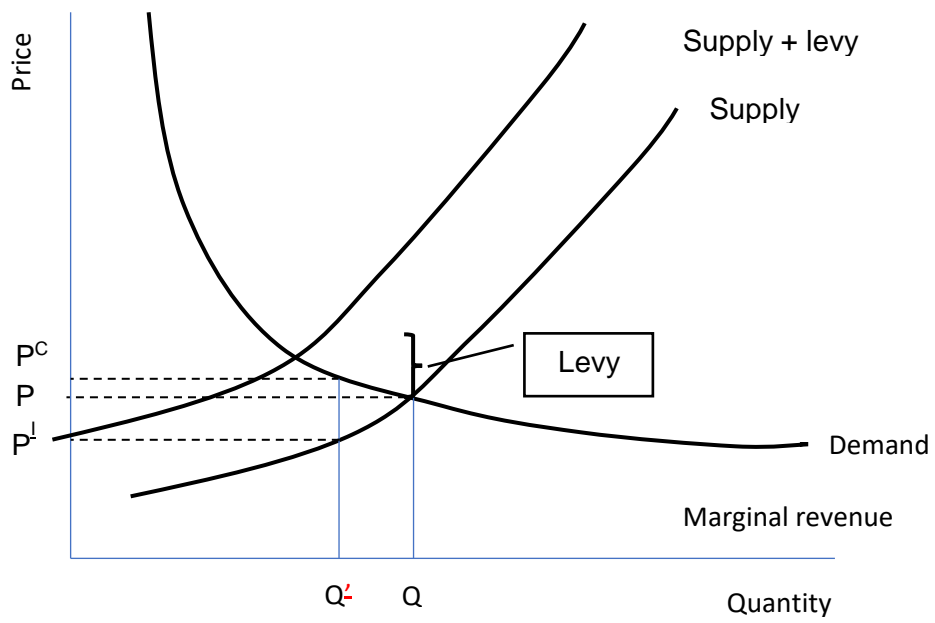


Figure 5. Producer and consumer surplus under restricted supply

Appendix 5 Additional considerations for determining attribution of recoverable management costs

The review of the theory identified several other considerations that may help inform the implementation of an appropriate cost recovery policy.

What are the broad objectives of management?

- To what extent is management focused on ecological, economic and social objectives?
- What is the relative importance of each?

The choice of fisheries management option will depend on the objectives that it is trying to achieve. Management focused on social objectives, for example, will involve different management instruments and restrictions than management focused on economic performance of the fleet. For example, this may result in a larger fleet size, or higher effort level than may be economically optimal in order to support regional communities. As a result, the commercial sector will receive lower benefits than they might otherwise given different management objectives. An explicit attribution of costs relating to these objectives needs to be determined. This may cover all aspects of management, as the subsequent management activities (e.g., monitoring, compliance etc) will be influenced by these objectives also.

The management objectives will also help identify the potential set of beneficiaries to consider.

What is the explicit or implicit resource allocation between sectors?

Many costs of management are not specific to one sector or another, and the benefits derived from management are shared across sectors. In such cases, their implicit (or preferably explicit) share of the resource can be used as a guide to cost attribution.

For example, with compliance and enforcement costs, all sectors benefit in proportion to their share of the resource in terms of ensuring sustainability of the resource and enforcing property rights. Commercial fisheries benefit from compliance and enforcement activities in recreational fisheries and vice versa. Compliant fishers benefit from enforcement preventing non-compliance of others. The community also benefits by ensuring their resource is used sustainably.

Webley and Probst (2020) provide an example of one approach to allocate management costs across different sectors and fisheries based on explicit resource shares applied to Queensland fisheries.

User pays or risk creator?

While many management actions benefit multiple sectors, some are specific to the particular actions of a fishery. For example, fisheries that have a high risk of TEP interactions may require additional monitoring compared with those that have lower risks. These higher costs are directly related to the risk created, which, if unchecked, may result in a loss of societal benefits through higher than acceptable TEP interactions.

Some other costs are also sector specific e.g., licencing, catch monitoring against quota, sector negotiations etc. These costs only exist because of the need to manage the fishery, and hence their associated management actions provide no “benefits” other than to the sector involved.

Domestic versus export industries

Domestic fisheries provide fish to local consumers. That a market exists for these fish indicates that consumers have a demand for these products and gain benefits in the form of consumer surplus from their consumption. If consumers did not benefit from these products, there would be no market price (and many fish species are not sold on the market for this reason but are avoided by fishers or discarded at sea). Accounting for these benefits in the attribution model is therefore appropriate.

Export oriented fisheries may also provide benefits in the form of consumer surplus, but this is outside the country. Hence, there is no additional benefits to the “owners” of the resource and benefits only accrue to the fishers who produce the product.

Recovering costs – efficiency, transparency and equity?

The ability to recover costs requires identification of the beneficiaries and the ability to collect these attributable costs.

The general community: As noted above, individuals in the broader community are generally willing to pay to ensure that the marine resource is used in a sustainable manner. These sustainability objectives are largely imposed at a broad policy level, implemented through management. Recovery of such costs from the broader community is likely infeasible and is most efficiently and equitably covered by the Government out of general revenue.

Commercial fishers: Sector specific costs (e.g., licencing, monitoring against quota, data collection) and attributable science and compliance costs can be recovered through levies linked to their use of the resource (e.g., quota holding, licence, lease). Equity considerations requires that the costs are allocated fairly across the different sectors within and outside the commercial fishing industry.

Consumers: It is difficult to identify who is consuming the fish. Attempts to add a levy to the sale price to recover management costs from these beneficiaries is likely to be ineffective, particularly when demand is relatively inflexible, as these costs will just be passed back onto the fishers. Direct recovery of the share of management costs is likely therefore to be infeasible and inefficient. There is a case for these costs to be covered by the Government out of general revenue.

Local coastal communities and other beneficiaries: As with consumers, these beneficiaries are both difficult to identify and infeasible to recover costs in line with the benefits received. There is a case for these costs to be covered by the Government out of general revenue.

Charter fishers: As with commercial fishers, attributable costs are recovered through licencing charges and/or levies. Recreational fishers using the charter sector also benefit. The attributable costs to this group could be recovered through a per fisher levy charged to the charter fisher and passed on to the recreational fishers through the charter costs.

Recreational fishers: Recreational fishers are the main beneficiary of recreational fishing. Identification of this group is possible through a licencing system. Identifying individual shares within the sector is unlikely to be feasible. A licence fee may be the most efficient means of recovering attributable costs to this sector. This can potentially be linked to fishing effort (and benefits) through different time coverage of the licence. For example, NSW offers a 3-day, one month or 12 month licence with different costs associated with each. WA offers a specific annual recreational fishery licence for each of the following fisheries - rock lobster, abalone, marron, net fishing and general fishing from a boat. South Australia has a recreational rock lobster registration.

Indigenous fisheries: Indigenous communities obtain both economic and cultural benefits through utilising the fisheries resource. Cultural benefits, by definition, extend beyond the

individuals directly involved in the fishing activities. Identifying individuals to recover costs associated with these benefits is likely to be infeasible and potentially distortionary as it may discourage ongoing cultural fishing activities. As with other community and social related benefits there is a case for these costs to be covered by the Government out of general revenue.

Appendix 6 Current SARDI Cost Recovery Process – Commercial Fisheries

PIRSA uses a range of management systems across their wild catch fisheries. These are supported by research undertaken by the South Australian Research and Development Institute (SARDI).

SARDI and PIRSA employ a 'tier system' that differs to that used by AFMA. The AFMA 'tier system' relates to the sophistication of the research and data knowledge in a fishery with Tier 1 being the highest. The SA Sardine Fishery is the only fishery in SA to adopt this model.

The use of the terminology 'tiered management' in SA relates to the type of fisheries management system applied in the Marine Scale Fishery (MSF). The transformative reform of the commercial marine scalefish fishery came into effect 1 July 2021, with the goal of strengthening the long-term financial and ecological sustainability of the fishery. Approximately 100 licences were voluntarily surrendered, four fishery zones were established (WC, SG, GSV/KI, SE), and an ITQ management system for King George Whiting, Snapper, Garfish and Calamari was introduced to managed commercial catch limits.

The MSF co-design approach is built on a multi-tier management approach including:

- Recognition of multi-sector participants (commercial, recreational and indigenous fishing etc)
- Tier 1 – quota management with multi-species total allowable commercial catch limits (TACCs) plus individual transferable quotas (ITQs) in the commercial sector
- Tier 2 – total allowable commercial catch limit (TACC) but no ITQ system
- Tier 3 – management of stock through monitoring of indicators (e.g., CPUE)

The next major development in the MSF will be the development of a Harvest Strategy which will require a good working relationship through the involvement of all parties.

All other fisheries are managed individually (i.e., no tier management) and are a combination of quota management and limited entry/input control fisheries.

Abalone is an ITQ managed fishery with recent quota cuts (up to 100%) reflecting low stock abundance in the Western and Central Zones. The Southern Zone was subject to a warm water event that resulted in higher mortalities about a decade ago. The fishery is also limited in terms of available fishing days due to weather. As a result, quota holders in this zone are happy to remain at TACC levels below the potential sustainable take.

SARDI is funded through a range of sources:

- Cost recovery from industry including specific requested research
- State support – provision made to fund outcomes against delivery of specific state-based priorities and applied as 'in-kind or cash contribution' to leverage funding support (e.g., FRDC or marine parks). In 2022/23, this will equate to ~\$2.5M across all aquatic-based research activities that support the sustainable development of South Australia's seafood industry.
- FRDC – funded through a 0.25% of GVP contribution from the commercial fishing industry, and up to a 0.5% of GVP contribution from the Commonwealth Government (depending on project costs).
- Other grant funding sources

SARDI works closely with industry to determine timing of projects and to streamline research without compromising the required scientific outcomes.

Stock assessments vary from:

- Annual – update latest data and run through a quantitative model
- Biennial – e.g., alternate species in Western Zone abalone, alternate years in Central and Southern abalone
- Every 3 years (usually multi-species fishery) on a species rotating cycle as the model is sophisticated

External review of these models is only undertaken sporadically

Research programs go through a 'research integrity review', with all scientific / client reports advancing through a 20-step critical review process. This process largely aligns with:

- Internal review first through pro-forma process
- Authors address identified issues or gaps
- Reviewed by PIRSA fisheries managers / SARDI Research Director
- Final Report presented to industry

Where the assessment and/or model demonstrates a high level of complexity or informs any significant management changes (i.e., depleted stock status) an independent external peer review is considered and, in some cases, undertaken. This process is occurring on a more regular basis and likely to become a more routine part of the review process.

The current government aims to ensure greater transparency in fisheries management by better communicating the science behind decision-making.

No benchmarking of costs of research have been formally carried out. Only evidence provided to ICRRP was an industry-based benchmark process of Southern Rock Lobster some years ago indicating SARDI was mid-range on cost. SARDI staff support the idea of regular review of SARDI costs.

There is also no formal risk profile process carried out for the science program. Risk is worked out with fisheries managers and industry.

SARDI includes following components in the project scopes for transparency:

- Salaries + on-cost (staff costs)
- Funds paid to industry for service delivery (e.g., vessel hire for surveys; up to \$500k/year)
- operational costs,
- overheads
- SARDI investment
- Fisheries and Aquaculture investment

The total value of the fisheries service level agreements (SLAs) provided by SARDI for stock assessments in 2022/23 is \$6.2m of which the State contribution is \$1.148m (\$819k SARDI, \$329k Fisheries and Aquaculture). This State contribution is direct recognition there is a recreational sector in some fisheries. This State contribution varies among years, particularly for MSF where the State contribution for the stock assessment is based on the proportion of the total catch taken by recreational fishers and estimated from surveys. Similar recognition is made through State contributions for Blue Crab (\$71k) and Southern Rock Lobster (\$57k).

Significant state government funds are also used to leverage FRDC funds (e.g., \$500k for recreational fishing survey project, \$2.5m for Snapper research).

Appendix 7 Cost Recovery in Other Jurisdictions

Australian Fisheries Management Authority (AFMA)

Operates under the premise that Australia's Commonwealth fisheries are community owned.

AFMA implements a cost recovery policy and model that is almost exactly the same as PIRSA. Both are based on the Australian Government Cost Recovery Guidelines (2014).

The Commonwealth commercial fishing industry pays for those costs directly attributable to the fishing industry while the Australian Government pays for any costs identified as more directly benefiting the broader community.

The commercial fishing industry is not identified as the sole beneficiary of all of the AFMA activities and therefore the costs for activities are recovered proportionally between industry and the Government. Proportions were negotiated some years ago between government and industry. Those activities that are recoverable are then charged as a levy (eg management costs) or as fee-for-service (eg licensing and quota administration).

Negotiations were held between AFMA, Department of Agriculture and Department of Finance in 1990s to determine attribution rates payable by each group:

- compliance risk assessments, investigations and enforcement actions, cooperation with state, territory and overseas bodies - 100% payable by government
- research projects - 75% payable by industry
- data collection and data management - 60% payable by industry

These negotiated attribution levels have been reviewed several times but Government has seen no reason to make changes.

AFMA's activity-based approach has enabled the agency to determine the costs associated with each activity within the defined activity groups.

AFMA sets fees and charges to recover all the costs of services provided where it is efficient and effective to do so, where the beneficiaries are an identifiable group and where charging is consistent with Australian Government policy objectives.

Determination of priorities and availability of funding may be impacted if, and when, a particular activity occurs.

AFMA explanations of each of the key activity groups provides an overview of the activities included, the beneficiaries of those activities and who is responsible for the costs associated with each activity.

Cost Attribution Process

AFMA undertakes an annual budget process using an activity-based costing process.

AFMA reviews which group(s) uses and / or benefits from each activity and applies an approved method to allocate the costs proportionally.

Costs for activities are comprised of:

- Direct costs – mostly comprises staff costs for each fishery management area

- Indirect costs – allocated for specific activities using a cost driver for allocation (eg observer costs attributed using observer days in a fishery)
- Overheads – cannot be directly traced to specific activities (eg rent, maintenance, HR, payroll and information technology infrastructure)
- Capital costs – forward capital budget set and where attributable to a specific activity the cost will be directly allocated

Each activity is reviewed and its associated cost adjusted annually based on operational requirements, the price of goods and services received and estimates of achievable cost savings.

As part of the annual budget process AFMA consults in April with the peak industry body for Commonwealth fisheries, relevant fishery sector associations and each fishery management advisory committee (MAC). The quantum and composition of levied activities in each fishery is developed through this consultation and may change over time according to circumstances in a particular fishery. Following any consultation rounds AFMA will consider the comments received and make any necessary changes to address issues or suggestions made for improvement and final CRIS released in June.

AFMA acquits its cost recovered expenditure each year and adjusts levies in the following year for each fishery for any over or under recoveries. All cost recovered activities are subject to a detailed annual review as part of AFMA's budgeting processes.

AFMA currently uses government appropriation to supplement cash flow while levy regulations are being made, invoiced and then receipted in the latter half of the financial year.

Performance reporting

Measuring and publicly reporting performance will give the fishing industry, the community and individuals confidence that AFMA is effectively and flexibly managing risk.

AFMA utilises reporting from the Regulator Performance Framework under the Government's red tape reduction initiative. Activities are directly mapped to AFMA's goals and KPIs in its Annual Operational Plan and reported publicly.

AFMA Expenditure and Cost Recovery Levels

The total annual AFMA budget is ~\$47m.

Cost recovery activity budget ~\$23-26m pa (recovered across industry, government and other revenue)

In 2006 a government directive to AFMA was to maintain into the future the same cost to industry (+ CPI). Since 2012/13 to 2020/21 the AFMA cost recovery levy expenses budget has been consistently in the range of \$14.6m - \$12.6m with an underspend (often significant) in every year but one.

International fisheries management, foreign fishing compliance and indigenous and non-commercial fisheries - ~\$10.14m (Government funded)

Compliance - ~\$4.22m (Government funded). See detail below

Fee-for-service recovers ~\$900,000

Specific activity groups and cost recovery determinations by AFMA

Management of Domestic Commercial Fisheries

This activity group involves developing and setting management arrangements, such as catch and effort levels, in line with harvest strategies, monitoring the performance of domestic commercial fisheries, by-catch mitigation and stakeholder engagement.

There is no impediment to charging for these activities and the group that creates the need for the activities is identifiable. The user group is predominately Commonwealth fishery concession holders and it is appropriate that they are charged the majority of costs for the activity through a levy or a fee-for-service.

Split: Industry 63%: Government 37%

- Bycatch - Some bycatch management activities are performed to meet requirements from non-industry stakeholders and therefore is 30% funded by government
- Consultation and engagement - 20% of the costs associated with engagement with science organisations and agencies due to work being performed beyond essential fisheries management science is funded by government
- MACs/RAGS - 20% of the costs associated with engagement to meet the needs of non-industry stakeholders such as environmental non-government organisations (eNGOs) and recreational fishers is funded by government
- Risk Management - Includes assessment of fisheries under the *Environment Protection and Biodiversity Conservation Act 1991*. A small portion of activity costs (5%) are government funded as there are additional activities required beyond essential fisheries risk management.
- Species & environmental management – 5% of fisheries management activities (including implementing harvest strategies, setting total allowable catch and effort) are additional activities not essential for fisheries
- Strategy, governance and leadership - AFMA does not cost recover costs associated with its Commission, Chief Executive Officer or General Manager Operations. However, partial costs are recovered for the General Manager Corporate Services (25%) and the Executive Manager Fisheries (50%).

Data collection and management

Data collected through this activity group is essential to assessing the impact of Commonwealth fisheries on marine resources and the broader marine environment.

Directed at supporting fishing activity and monitoring the activities of commercial fishers

- implementing electronic monitoring systems,
- data entry of catch data records and logbooks,
- providing data analysis and extracts,
- placement of observers to collect scientific data,
- specific monitoring of certain fishing sectors,
- vessel monitoring

As this activity is primarily driven by commercial fishing activities it is appropriate that the majority of costs for these activities are recovered from the commercial fishing industry.

Requests for data extracts from other government agencies or released to the public are not cost recovered. In other cases, AFMA will recover costs on a fee-for-service basis.

Split: Industry 59%: Government 22%: Other revenue 19%

- Logbooks/Catch Records – 81% recovered from industry
- Data management
 - Analysing data - 20% reflects the needs of government, eNGOs and other non-commercial stakeholders and is government funded.
 - Management of fishery data plans and research reporting - 50% cost recovered because this activity benefits the government and industry in approximately equal proportions.
 - Publishing data - for public access or use by government agencies is 100% government funded
- Electronic monitoring - includes the implementation and administration of the e-monitoring program. Currently includes additional system establishment costs -50% government funded to assist establishment and encourage uptake
- Observers – some work done to meet non-industry requirements – 80% industry funded
- Fishery monitoring/data collection – undertake specific fishery monitoring – 100% industry funded
- Vessel monitoring – defined as part of compliance activity - 20% industry : Government 80%

Licensing administration and revenue collection

Involves licensing transactions (grant, issue and register), transfer and leasing of concessions and recovery and accounting for fees/levies. Includes maintenance of systems and amortisation of systems.

Majority costs charged as mix of fee-for service for transactions and levy for balance

Split: Industry 50% : Government 42% : Other revenue 8%

- Licensing admin and revenue collection - licencing administration and transactional services such as processing applications, renewals and, transfers and includes formulating, reconciling, issuing and recovering levies and fees. – 62% Government funded
- Licensing administration and revenue collection systems - Involves recovering the costs for the development and maintenance of AFMA's licensing administration and revenue collection systems – 90% Industry funded

Domestic fisheries compliance enforcement

The activities in this key activity group contribute to the orderly management of the fishery as a whole to benefit the broader community.

This activity group is comprised of:

- compliance risk assessments,
- investigations and enforcement actions
- cooperation, consultation and the exchange of information with state, territory and overseas bodies having similar functions to AFMA.

AFMA sees the scope for non-compliance in fisheries is broad, but not solely attributable to the members of the commercial fishing industry. There are a range of users of fisheries resources such as the members of the public, recreational fishers, charter operators and state/ territory commercial fishers.

All of these sectors are accessing a community owned resource, so rather than recover domestic fisheries compliance enforcement costs from the commercial fishing industry, these costs are 100% government funded reflecting the range of threats to the community-owned fishery resource.

Research

AFMA required to establish research to support fisheries management decisions. This activity group includes activities and products that are used primarily by the Commonwealth commercial fishing industry including:

- surveys,
- fishery assessments,
- fishery modelling,
- new technologies,
- data analysis
- resource assessment groups.

Split: Industry 62%: Government 34% : Other revenue 2%

- Research Contract Administration – 50:50
- Research projects - Research costs have been split across cost recoverable activities (75%) and government funded activities (25%) to simplify administration and to better represent the general use of fisheries science by the Australian public.

New Zealand

Operates under the premise that all New Zealand fisheries are community owned.

NZ government implements a cost recovery policy and model that is almost exactly the same as PIRSA and AFMA.

The New Zealand government (NZ) supports cost recovery to improve the efficiency of resource use, for example, by encouraging users to be prepared before engaging with services, to make good decisions about how much of a service to use, or to take steps to mitigate the risks they create¹⁴.

Approximately 40% of MPI's departmental funding comes from cost recovery (2018)¹⁵.

The main objectives are to;

- Ensure application of principles of equity, efficiency, transparency and justifiability
- Ensure those who use services which enable commercial or private benefits pay for the services that deliver those benefits.
- Encourage those undertaking certain activities to take responsibility for managing risks to public health, biosecurity, or the sustainability of New Zealand's primary resources by ensuring they pay for the costs of managing those risks.
- Encourage efficient service delivery, while minimising transaction costs for service users and stakeholders wherever possible.

Principle of justifiability requires that, so far as is possible, only the reasonable costs of providing a service should be recovered.

Principle of transparency requires costs to be allocated as closely as practicable to the service, and the period in which the service was provided and that the link between service costs and charges should be clear enough to enable scrutiny by those that pay charges.

¹⁴ Ministry for Primary Industries Cost Recovery Policy Guidance - MPI Information Paper No: 2018/08 - August 2018 (Prepared by the Ministry for Primary Industries)

¹⁵ Supporting information for: Cost Recovery at MPI - Findings from the First Principles Review of MPI's cost recovery arrangements - MPI Information Paper No: 2018/06 - August 2018 (Prepared by the Ministry for Primary Industries, New Zealand)

When charges are reviewed, cost estimates and forecasts are based on actual and known costs, and clearly documented assumptions (such as growth rates in service demand).

NZ recovers costs associated with activities and services that deliver outputs – those specific things that government services produce, or the immediate and direct result of those services.

In considering this approach it is recognised that a range of groups and individuals may benefit from this service and there is a public good component however the government takes the view the cost should be recovered from those who create the risk which is those who undertake the activity requiring audit or inspection. NZ government does not generally seek to recover costs or reflect benefits associated where a service contributes to wider outcomes (eg policy development as factors external to MPI also influence or contribute to these outcomes)

Levies cover costs of:

- monitoring commercial fishing activities
- monitoring commercial fishing activity through observer coverage
- administering commercial fishing services, registries, and quota.
- fisheries stock assessment research
- research necessary to manage and mitigate the effects of commercial fishing on the aquatic environment and biodiversity, including protected species

Wild catch licencees who must pay levies, and basis for levy

- quota owners, on the basis of the quota weight equivalent in relation to their quota share:
- individual catch entitlement holders (ICE), on the basis of the amount of ICE held:
- permit holders, on the basis of the amount of actual catch of non-QMS stock reported on the holders' MHRs:

Where undertaking science and/or research is used to inform specific management controls or setting of utilisation limits (e.g. stock assessment) then costs to be recovered from those that create the need for management controls. However, research targeted at general biodiversity or geographic features or land or water use to be taxpayer funded in recognition that all the different groups of beneficiaries or risk exacerbators cannot be efficiently or equitably identified or charged.

In some instances where government delivers science and research, there is more than one direct beneficiary of the output (e.g. where fisheries stock assessment research informs management decisions in shared fisheries, or research relates to protected species where risk exacerbators other than commercial fishing are known). In relation to these services, it is possible to identify other direct beneficiaries or risk exacerbators, but it is not feasible or efficient to equitably to charge them under the current regulatory framework, so the taxpayer funds on their behalf.

NZ assesses the practicality or expense to identify and charge parties. Generally, it will be straightforward to identify direct beneficiaries and risk exacerbators as those that use or give rise to the need for the service. The level of service use may be a good indicator of risk or benefit.

NZ includes consideration of the cumulative impact of different government cost recovery arrangements. In some circumstances, government may choose not to recover costs, to share costs or to phase in cost recovery. Where charging would create perverse incentives (e.g. discourage voluntary reporting) and thus would be inefficient. This will however need to be considered on a case by case basis.

NZ government agrees it has an obligation to ensure stakeholders have confidence in the way cost recovered funding is used and managed and this is achieved through:

- Consultation when changes are proposed
- Regular reporting on the performance of cost recovered services.

Stakeholders are provided with information to ensure they understand:

- Why and how government delivers services and how to ensure service provision is efficient and effective.
- The principled basis for charges and the level of cost recovery.
- The forecast for actual costs of service delivery, including any historic under or over-recovery.
- The relationship between costs, volumes and service standards.
- The rationale for how charges have been designed, including whether charges represent average or actual costs.

Good strategic and operational planning underpins effective budgeting and forecasting, which in turn supports more accuracy in setting of charges. In NZ they encourage industry sectors to assist with understanding likely changes in service demand and emerging risks that can have implications for how government prioritise resources.

NZ ensures service users have input into planning where services are provided at the request of, or seek to provide a benefit to, specific individuals or groups.

NZ does acknowledge that it may be less straightforward however for service users to have input where services are designed to manage risks or ensure compliance with regulatory requirements. Care must be taken to ensure the agency maintains regulatory independence from the sectors it regulates.

NZ undertake regular reporting to stakeholders about the performance of cost recovered services to support improved transparency and accountability for delivery of efficient and effective services. Intended that reporting includes a wider range of information, including actual and forecast breakdowns of the types of costs that are involved in service delivery (both direct and indirect costs), service volumes and achievement of service standards.

In 2016 NZ undertook a First Principles Review (the Review) of cost recovery across all of the primary industry systems they manage (including fisheries). The purpose of the Review was to support a more consistent and transparent approach to cost recovery.

Many NZ stakeholders noted in the Review that compliance costs impact on their ability to remain competitive, and that it is not always possible to pass these costs on to consumers and that that it is important to consider the impact on growth in export markets and wider economic objectives. The government view was that in many cases, industry is able to internalise charges into cost structures and that is an efficient way to ensure that downstream or indirect beneficiaries or risk exacerbators contribute to costs. Government did agree that it is important to consider how charges might impact on market competitiveness (or other regulatory objectives). In some cases, it may be appropriate to consider recovering less than full costs or phase in cost recovery.

NZ government supports regular reviews of the cost recovery process, including charges, but the frequency of the reviews of charges needs to be balanced against the costs of the reviews and costs of any change for government and industry. The NZ government favours the review of cost recovery regulations on a three yearly basis and to undertake out of cycle reviews if large, unexpected surpluses or deficits emerge.

Government agrees that the way it recovers costs can influence incentives for efficiency improvement and is addressing this in the following ways:

- by improving the data held on costs, expenditure and revenue drivers and service performance
- through more frequent engagement with industry on cost recovery and by developing regular industry reporting
- examining the balance between input based charges (such as hourly rates) and output based charges (such as fixed fees), and the extent to which each support incentives for efficiency improvement.

Western Australia (supplemented by the SG Heilbron Report to PIRSA, February 2023)

Western Australia operated under an activity-based attribution cost recovery model for many years from 1995 under an industry/government policy agreement commonly known as the *Cole/House Agreement*. Essentially this approach mirrored the current cost recovery system in South Australia.

At the time this only applied to WA 'major' fisheries. Minor fisheries paid fees on the basis of a percentage of GVP of their fishery. In most cases this GVP contribution did not cover management costs.

All fisheries also paid 0.65% of the GVP of their respective fisheries into a Developing and Better Interests Fund (DBIF) from which industry peak bodies and FRDC contributions were paid among funding of other strategic fisheries, pearling or aquaculture matters.

Over time the policy of cost-recovery was seen to contain problematic issues:

- Industry felt that there was a lack of opportunity to assess the efficiency and effectiveness of service delivery through contestability of service provision,
- The Department felt the model was too inflexible because services (resources) were effectively tied to the major fisheries (which contributed the most funds), rather than to the areas of greatest need and / or risk (eg MPAs, EPBC).
- The model was costly to administer, provided difficulties in reaching agreement on priorities
- There was a negative impact on relationships with industry due to the on-going conflicts about the costs of services and their equitable recovery from industry.

In 2010 the Western Australian Government, through the Minister for Fisheries, introduced a 'package' of reform measures into the commercial fishing industry designed to achieve a range of objectives aimed at:

- Improving relationships between industry and government agencies
- More certainty over funding levels for both the Department and WAFIC
- A simplified system for the commercial licence fee system with greater transparency.
- Lower cost of fisheries management administration / more resources for strategic issues
- Clear and predictable cost to industry that can be factored into their business decisions.
- Improved equity in what fishers contribute through access fees
- New legislation to enhance commercial fishing (and aquaculture) access rights
- Greater flexibility in the use of revenue to meet priority needs of fisheries / greater focus on strategic planning over a reasonable time frame,

- Providing a foundation for a progressive development of risk-based regulation and/or self-regulatory approaches
- Introducing enhanced industry consultation arrangements,

The decision abolished the activity-based attribution cost recovery model and introduced an access fee related to a same-rate proportion of the Gross Value of Production (GVP) for each managed commercial fishery in WA. Importantly it was promoted as based on revenue, not profit, and was not therefore a resources rent tax.

Importantly the revenue raised was delinked from the costs of management for the fishery from which the revenue was received.

Some argued at the time that under cost recovery there was inequity in what fishers paid in fees because the costs recovered were unrelated to industry economic conditions and capacity to pay and the costs of regulation fell disproportionately on some parts of the industry. Others argued a single rate proportion per fishery GVP approach entails cross subsidisation. Yet others argued it disincentivised investment in industry that may see GVP growth.

The package consisted of:

- Introduction of a new uniform system for determining 'access fees' for the State's commercial fishing, calculated at 5.75% of the GVP for each individual managed fishery.
- A new Recreational Fishing from Boat licence fee.
- Commercial fishing access rights were to be strengthened in upcoming new legislation.
- Co-management arrangements to be developed
- New consultation arrangements between industry and government
- New representation funding arrangements for the peak commercial industry body

Government provided undertakings as follows in a Ministerial Policy Guideline¹⁶:

- 0.5% of the GVP collected would be used for peak industry body funding (WAFIC). Industry advocacy would need to be channelled through WAFIC to government
- 0.25% of the GVP collected would be provided as the WA contribution to FRDC
- Balance of 5% of GVP would be applied by the fisheries management agency, at their discretion, to meet core sustainability requirements in each fishery and strategic priorities.
 - Principles and criteria were to be developed to satisfy core sustainability requirements and those that are over and above will be identified
 - WAFIC would be provided an opportunity to input into the Department's annual planning and priority setting process, including providing input on industry priorities for management and research.

¹⁶ MATTERS RELATED TO THE 2010 FUNDING REFORM DECISIONS OF GOVERNMENT, Ministerial Policy Guideline No.21, Department of Fisheries (WA), February 2012

- WAFIC will be advised of progress on project outcomes and deliverables.
- Revenue from the fees could only be used for commercial fisheries purposes – management, enforcement, research and monitoring fishing activity.
- GVP to be calculated on three year rolling average
- GVP calculation methodology would be determined with industry, collected and reviewed independently
- New fee system would be phased in over 5 years for some fisheries with no more than 100% increase in fees in any year
- Where a particular fishery requires services that exceed those required to meet core sustainability requirements, the services will be provided on a cost recovery basis unless otherwise negotiated between WAFIC and the CEO.
- Aquaculture licence holders would be charged on a fee-per -hectare basis
- Management Advisory Committees were abolished and replaced with a more streamlined, cost-effective process of annual fishery management meetings and tasked fishery working groups administered via an independent consultation process contracted through WAFIC under a Service Level Agreement to government.
- Review the funding model every 5 years

Budgeting

- Agency funded by access fees, licence fees and consolidated revenue
- Agency develops annual expenditure budget based on identified priorities and submits to Treasury for funding
- As access fees (GVP) rises and falls the treasury component varies to meet annual expenditure budget on a ‘swings and roundabouts’ approach
- Rock lobster 80% of WA commercial fisheries annual GVP. The huge GVP drop in rock lobster in 2021 due to China import limits left a big hole in the Department bucket
- More and more government priorities (eg MPAs, sharks, machinery of government) has placed pressure government dollars available.
- Government limits on total FTEs in public service means less fisheries management services able to be provided
- Creates difficult decisions for government to manage some fisheries to much lesser extent and overall services diminish

Findings from 2015 Review of WA GVP model¹⁷

The Review (2015) considered the objectives of the ‘package’ introduced by the WA government in 2010 which included:

- a proposed new legislative approach will incorporate a “risk based” approach to assessing the management needs of fisheries,
- an enhancement of the access right of participants;
- a greater recognition of the economic and social objectives.

To achieve these ends, the government drafted a new fisheries Bill and at the same time introduced changes to streamline the funding arrangements for the commercial fishing sector

¹⁷ REPORT ON THE REVIEW OF THE 2010 FISHERIES FUNDING REFORM DECISIONS OF THE WESTERN AUSTRALIAN GOVERNMENT - Peter J. Neville (September 2015)

(introducing a %GVP licence fee and pearling and aquaculture (introducing a per hectare lease fee).

In terms of the overall implementation and efficacy of the new funding model, the 2015 Review found that implementation had satisfied the above stated objectives other than fact that the legislation to strengthen access rights was still not in place. (Note: The legislation remains outstanding at the time of this ICRRP report – August 2023).

The 2015 Review identified that the removal of the annual cost recovery “debates” and negotiations had taken away a source of constant friction in relationships and helped in changing the tenor of discussions between the parties towards a focus on more important and productive priority research and management issues. However, with the emphasis no longer on cost recovery there was a noted shift away from a focus on transparency in budget matters, to one of risk management and priority setting in Departmental activities. This had impacted adversely in some areas (e.g., a lessening of interest in co-management issues and outsourcing initiatives). The Review emphasised the need to ensure that these important areas are not forgotten to ensure delivery of services in the most efficient manner.

Through introduction of this funding model through a Ministerial Policy Guideline the Government effectively placed a ‘term of government’ timeline on the revenue model itself and the rate of proportion of GVP charged. To date successive governments have supported the policy without significant amendment. Given that funding arrangements can be changed by decision of the Minister this does not provide for a long term planning capacity by industry.

This industry and government have recognised that there will always be activities / priorities that will not be resourced in any one year with available resources. However, with a fixed fee basis, industry is wanting to achieve the maximum service delivery in a wide range of program areas from their fees and this creates its own tensions which need to be resolved within the consultation process for setting Departmental priorities, annual planning decisions, monitoring and auditing of outcomes.

Agreed criteria and principles allow industry (WAFIC) and the Department to have input into the evaluation of risks and subsequent priority setting which becomes captured in the Department’s Fish Plan.

The GVP methodology itself has been the subject of on-going review due to issues related to its calculation in some sectors and difficulties where companies are vertically integrated, or where only a few companies are operating and confidentiality issues arise. In order to improve the efficacy and acceptance of the model, a number of reviews (including identifying beach price) have addressed particular aspects of the model.

With the abolition of MACs and other committees there is a view that the annual fishery consultation meetings have needed to be supplemented with special purpose meetings involving not only fishermen, but a broader range of participants depending on the issue under consideration. It was always envisaged that the Department would need to continue with such consultation notwithstanding the SLA above. This may involve “tasked working groups” as a more appropriate format. This has been further highlighted by the requirements of the Marine Stewardship Council process where wider stakeholder/community-based consultation mechanisms are required.

Panel Findings since 2015 Review

The obvious issue in WA arising with the GVP model is that one sector, Western Rock Lobster, with a GVP approaching \$500 million per annum in 2018/19 was contributing approximately 80% of the total GVP revenue for the commercial industry as a whole. The advent of the China import restrictions on Australian rock lobster in 2019/20 has reduced this revenue stream significantly and placed obvious pressure on the Department to fund

baseline core sustainability requirements in each fishery – let alone any strategic priority matters across the industry. Coupled with increasing government requirements on fisheries management agencies within existing budgets and FTE limitations (increased governance matters, marine parks management, increased spatial access inputs (eg seismic and renewable energy industry) has seen a reduction in the delivery of services by the Department.

There continues to be disagreements between industry and government in relation to the beachprice settings for the calculation of %GVP in some sectors.

Tasmania

There is currently no cost recovery in Tasmanian wild-capture fisheries. A formal cost recovery framework has recently been implemented for the salmon aquaculture industry.

Current fees contribute to costs of management with the understanding the majority of costs are created due to there being a commercial fishery in place.

There is no formal process for setting fees and no relationship to cost of management. A base fishery management cost is charged whether the fishery is open or not. Additional fees are charged should a fishery open in any season (eg scallops).

Abalone is the only fishery that differs having a deed in place which agrees to payment of a resource rent. In 1994, a Deed of Agreement was negotiated (the “Old Deed”) to give long-term certainty to the abalone quota holders developed under the under the *Fisheries Act 1959*. The Deed represented a major change in the management of the abalone fishery setting out quota entitlements and a fee structure based on a sliding percentage of the beach price for abalone. Existing quota owners were given the choice of continuing with their annual abalone licences or entering into an agreement under the Deed that would apply for 10 years with a perpetual right of renewal. Unsurprisingly, 90% of quota owners chose an Agreement under the Deed.

This certainty was touted to encourage business lending and increase demand and price for quota units. In 2005, a new Deed of Agreement was negotiated under the Tasmanian fisheries legislation. The vast majority of operational abalone quota units in Tasmania are now held under the New Deed, although some quota units persist under the Old Deed. Licences issued under the New Deed grant full authority over one abalone quota, being 1/3500th of the total allowable catch. The New Deed will continue to 2033 but provides for 20 year rolling renewals beyond that time. This effectively provides abalone quota holders with secure access to the abalone fishery in perpetuity.

The increased security for quota holders, and their third parties, is considered to be at a cost in terms of the flexibility of possible management arrangements due to the wording of the abalone Deed of Agreement. Given the number of shares issued is fixed by the deed any attempt to terminate the commercial access granted under the Deed could expose the Government to a costly compensation liability. The prospect of having to pay compensation can make government reluctant to implement policy changes which is a problem when policy and management flexibility are needed.

The Deed requires the TAC to be determined to target maximum sustainable yield (MSY), rather than maximum economic yield (MEY) targets as are adopted in most modern fisheries. Any attempt to move the abalone fishery to MEY targets is prohibited under the Deed. Variations in abundance, spatial zoning, new access policies (introducing recreational or cultural fishing access), new management objectives, or new scientific information can all give rise to the need for timely changes to management practices.

The Deed introduced a reasonable recovery of a share of the resource rent available in the commercial abalone fishery however the revenue collected has been in decline over the last decade. The fee for quotas under the New Deed was originally based on 8.125% of the average beach price in 2005 but has since been reduced to 7%. It was only \$4M in 2016 and \$6m in 2019. Reduced fees paid by the industry, coupled with increasing government support, has meant that revenue is now estimated to be only \$699,000 higher than government costs of managing the fishery. As a result, fees in the abalone fishery have evolved to primarily represent cost recovery, rather than a royalty.

The overriding commentary is that benefits accruing from a Deed of Agreement may be asymmetrical if it results in a loss of regulatory flexibility that stifles adaptive management approaches needed to respond to changing climatic conditions (e.g. adjusting catch or spatial management arrangements), community expectations and other external factors.

Victoria

In April 2004, a dedicated Fisheries Activity Costing System (FACS) was put in place to track specific activities carried out by Victorian Fisheries Authority staff, and retrospective cost recovery was introduced.

The Fisheries Cost Recovery Standing Committee (FCRSC) was established by the Minister responsible for fisheries to provide advice on the implementation and ongoing operation of the cost recovery program.

By 2008 complexity in data accuracy and reliability resulted in a call for a simpler, more transparent forward-budget cost recovery system. In 2014, after significant industry government consultation, the new process was implemented and included:

- a set of cost recovery principles;
- the services that Victorian Fisheries Authority (VFA) provides to industry (both recoverable and non-recoverable);
- the levels of recoverability for each cost recoverable service (i.e. the proportion to be attributed to the commercial sector);
- the costs incurred to deliver that service (both staff and operating);
- a preferred consultation approach; and
- milestones that industry can measure the department's performance against.

The Victorian system recognises the lack of clear demarcation between public and private goods.

Victoria has developed a cost recovery system which collects only around 11% of the total cost for fisheries and aquaculture with the rest provided from public funds. However there remains complexity, administrative resource intensity and tension with industry.

Many services there are non-recoverable because they are considered to generate public benefits.

Victoria does have a provision that allows for a waiver of the payment of a certain number of prescribed fee units to refund to industry the value of services which were not provided to them.

In Victoria, there is currently a movement for change to charging industry on the basis of a percentage of the Gross Value of Production (GVP) to reduce complexity, resource intensity and industry disaffection. Similar to Tasmania, Victoria has a royalty system applying to abalone.

USA

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) governs fisheries management in the U.S. Exclusive Economic Zone.

Section 304(d)(2) of the Magnuson-Stevens Fishery Conservation and Management Act authorizes and requires NOAA Fisheries to recover the actual costs directly related to the incremental costs of management, data collection, and enforcement of any Limited Access Privilege (LAP) program, the Western Alaska Community Development Quota (CDQ) Program, registrations of vessels and observer services.

Limited access privilege programs are those that allocate a percentage of the total allowable catch of a fishery for exclusive use by a person. Cost recovery fees recover the actual costs directly related to the management, data collection, and enforcement of the programs.

The Magnuson-Stevens Act limits fees to 3% of the annual ex-vessel value of fish harvested by a program.

Payments received by the agency as a result of cost recovery are deposited in the Limited Access System Administrative Fund as required by the Magnuson-Stevens Act. Funds deposited in this account are available only to the Secretary of Commerce and may only be used to administer and implement the Magnuson-Stevens Act in the fishery in which the fees were collected.

The fisheries management agency uses a “but for” approach when determining the actual costs of managing a fishery. This approach looks at incremental costs that would not have been incurred ‘but for’ the implementation of the commercial fishery program. The agency determines which tasks are incremental before staff attribute their time spent on these tasks to the cost recovery program¹⁸. When evaluating the incremental status of tasks, the agency may determine that some tasks are ‘partially incremental’. If the agency makes such a determination, agency staff are instructed to allocate their time into incremental and non-incremental hours. In 2021 the agency put in place a system to track and recover all categories of incremental costs including travel, supplies, and equipment.

Recovering costs is a four-step annual process:

1. Calculate the incremental costs incurred to manage and enforce the fishery.
2. Calculate the total value of the fishery.
3. Divide the total costs in step one by the total fishery value in step two to determine the fee percentage.
4. Apply the fee percentage to each permit holder’s catch and invoice each permit holder.

To determine the ex-vessel value for the IFQ program, the agency uses the ex-vessel value for previous calendar year reported from IFQ electronic fish tickets (ie CDRs) as the most recent complete set of data. The calculation for 2022 equated to 4.2% in the Pacific Groundfish Fishery but was reduced to the statutory limit of 3%. It is unclear in the literature considered but it is assumed the balance is absorbed by the government agency.

For example, observer coverage is funded through a system of fees based on the ex-vessel value of groundfish and halibut landed by vessels. As of 2019, the funds from this fee have also been used to deploy Electronic Monitoring in the fixed gear fleet.

¹⁸ Pacific Coast Groundfish Trawl Rationalization Program Cost Recovery Annual Report (*Fee Calculation for 2022 and Fishing Year 2021 Payments*)

Through 2020, landings accruing against an individual fishing quota (IFQ) allocation or a Federal TAC for groundfish from vessels were assessed at 1.25 percent fee using standard ex-vessels prices multiplied by the landed catch weight of groundfish and halibut. Starting in 2021, landings will be assessed at a 1.65% fee.

The agency produces a Cost Recovery Annual Report containing fee calculations for the new year and cost breakdown and payments for the previous year for each fishery.

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