

## **Analysis of governance for sustainability planning in the Cairns Region**

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### **Abstract:**

The relationship between governance arrangements and sustainability planning outcomes in complex governance systems remains poorly understood, despite significant discussions of governance in the environmental management literature emerging in the last decade. In order to analyse and examine the relationship between the health of sustainability planning governance and decision-making outcomes, this paper applies the Governance Systems Analysis framework (GSA) in the Cairns region. This paper analyses the sustainability planning governance arrangements in the Cairns region by exploring the capacity, connectivity and knowledge use of institutions in the region to deliver desired sustainability planning outcomes. The paper finds that the planning for sustainability in the Cairns region is on a knife's edge, and could fail or succeed to deliver its intended decision-making outcomes. The paper concludes with recommendations for governance reform for sustainability in the Cairns region.

### **1.0 Introduction**

The Cairns region is highly vulnerable to the impacts of climate and economic change, such as the 2008 global financial crisis, due to its reliance on nature-based tourism and agricultural industries (Emtage, Herbon, & Harrison, 2007; Nilsson, Sutton, & Tobin, 2010). The Cairns region is located in Far North Queensland, Australia and is the second fastest growing local government area in regional Queensland (see Figure 1) (OESR 2012). The regional centre's population is highly transient and has a higher than average proportion of low-income earners, high unemployment and underemployment compared with other regional and capital cities in Queensland (OESR 2012). Despite growing aspirations for sustainability in the region (Emtage et al., 2007), sustainability planning remains ad hoc and inconsistent. This paper analyses the sustainability planning governance arrangements in the Cairns region by exploring the capacity, connectivity and knowledge use of institutions in the region to deliver desired sustainability planning outcomes. The paper outlines a number of recommendations for governance reform to improve the outcomes of sustainability planning in the Cairns region.

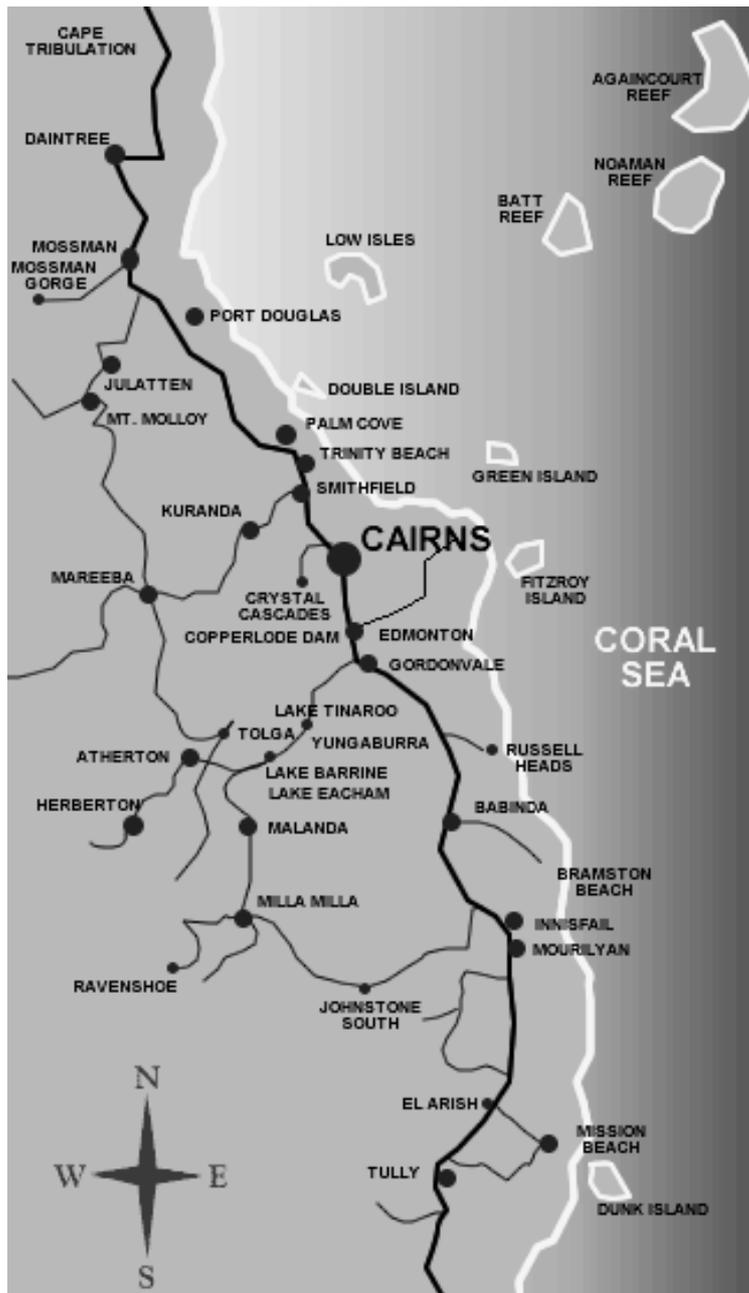


Figure 1: Cairns region (CTSC, 2015)

## 2.0 Evaluative approach

This paper applies the Governance Systems Analysis (GSA) Framework described and developed by Potts, Vella, Dale, and Sipe (2014) and Dale, Vella, and Potts (2013a) to analyse the interactions and quality of governance structures, functions and their outcomes in achieving sustainability outcomes in the Cairns region. The GSA is an analytical framework that was developed specifically to identify and address the lack of systemically-oriented evaluative frameworks for complex governance systems and to inform governance reform in complex landscapes, including sustainability (Dale et al., 2013a; Dale et al., 2013b). It uses the lens of structural-functionalism in combination with planning theory and systems theory to support analysis of the complex, multiscale interactions within sustainability governance systems. Structural-functionalism is an early form of systems theory drawn from sociology that emphasises that social systems (or in this case governance systems) can only be understood through the interactions of systemic components (Fisher, 2010; Fontes & Guardalabene, 1976; Groth, 1970).

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The GSA framework uses the policy-making process described by policy scientists such as Althaus, Bridgman, and Davis (2007) to define structural concepts within its analysis. This enables consideration of the interactions of governance structures and how they function, while also providing an overarching assessment of the system's capacity to deliver strategic sustainability planning or policy-making outcomes. The steps of the policy-making process used to frame the GSA's assessment include:

- 'vision and objective setting;
- strengths, weaknesses, opportunities and threats (SWOT) analysis and research;
- strategy development (within various structural elements of the system).
- implementation; and
- monitoring, evaluation and review' (Dale et al., 2013a, p. 6).

The GSA framework is detailed below in Table 1 (previously described and applied by Dale et al. (2013a), Dale et al. (2013b), and Potts et al. (2014)). This paper pays particular attention to the role of connectivity in delivering desired planning outcomes.

**Table 1: Governance Systems Analysis Framework**

|                              | <b>Decision-making Capacity</b>   | <b>Connectivity</b>   | <b>Knowledge-Use</b>   |
|------------------------------|---|---|--|
| Vision and Objective Setting | <ul style="list-style-type: none"> <li>Do capacities exist to set higher level aspirational or condition targets?</li> <li>Do the relevant stakeholders have the knowledge, financial, human and infrastructure resources required?</li> <li>Do key institutions involved have strong corporate governance/continuous improvement systems?</li> </ul>       | <ul style="list-style-type: none"> <li>Are relevant stakeholders actively connected to decision-making?</li> <li>Are visions and objectives aligned to higher and lower scale visions and objectives?</li> <li>Are collaborative frameworks for setting visions and objectives well designed?</li> <li>Are there structured frameworks for bargaining and negotiation over setting visions and objectives?</li> </ul> | <ul style="list-style-type: none"> <li>Are all forms of social, economic and environmental information available for vision and objective setting?</li> <li>Are traditional and historical knowledge sets being applied?</li> <li>Are appropriate decision-support tools in place to support scenario analysis?</li> </ul>                   |
| Research and Assessment      | <ul style="list-style-type: none"> <li>Are there strong research and analysis capacities in place to inform other structural components of the system?</li> <li>Are there strong environmental, economic, and social research and analysis capacities in the system?</li> </ul>   | <ul style="list-style-type: none"> <li>Are there strong collaborative linkages between different research institutions?</li> <li>Are there effective brokerage and communication arrangements between research provider and end user stakeholders?</li> <li>Are collaborative arrangements in place to integrate social, economic and physical research?</li> </ul>   | <ul style="list-style-type: none"> <li>Are there systems in place for long-term research synthesis and knowledge retention?</li> <li>Are there broad research priority setting exercises that need to be refined?</li> <li>Are all forms of social, economic and environmental information available for systems decision-making?</li> </ul> |
| Strategy Development         | <ul style="list-style-type: none"> <li>Do capacities exist to set clear strategic targets?</li> <li>Do the relevant stakeholders have the knowledge, financial, human and infrastructure resources available to make the decisions required?</li> <li>Do the key institutions involved have strong corporate governance and improvement systems?</li> </ul> | <ul style="list-style-type: none"> <li>Are all relevant stakeholders connected to strategy decision-making?</li> <li>Are strategies aligned to visions and objectives?</li> <li>Are strategies aligned to higher/lower scale strategy development</li> <li>Are collaborative frameworks for setting objectives well designed?</li> <li>Do strategies integrate an appropriate solutions mix?</li> </ul>               | <ul style="list-style-type: none"> <li>Is there social, economic and environmental knowledge relating to the assessment of the efficacy of key strategies?</li> <li>Are decision support tools available to scenario test alternative strategies?</li> </ul>   |
| Implementation               | <ul style="list-style-type: none"> <li>Are there capacities to implement a broad mix of strategic solutions?</li> <li>Do the implementation players have</li> </ul>   | <ul style="list-style-type: none"> <li>Are there effective partnership and integration arrangements between policy and delivery systems?</li> </ul>   | <ul style="list-style-type: none"> <li>Are there research efforts to inform continuous improvement in implementation?</li> </ul>   |

|                                   | <b>Decision-making Capacity</b>   | <b>Connectivity</b>   | <b>Knowledge-Use</b>  |
|-----------------------------------|---|---|---|
|                                   | <p>the financial, human and infrastructure resources to implement?</p> <ul style="list-style-type: none"> <li>Do the key institutions involved have strong corporate governance and improvement systems?</li> </ul>   | <ul style="list-style-type: none"> <li>Do different components of the solution mix collaborate?</li> <li>Are there effective research brokerage arrangements to support implementation?</li> </ul>  | <ul style="list-style-type: none"> <li>Are local and traditional knowledge sets informing implementation?</li> <li>Are effective data sets concerning implementation being managed and retained?</li> </ul>     |
| Monitoring, Evaluation and Review | <ul style="list-style-type: none"> <li>Are there effective monitoring and evaluation capacities in the system?</li> <li>Are there collective monitoring alliances in place?</li> <li>Are there defined and independent evaluation capacities in the system?</li> <li>Are there reporting capacities to enable high levels of accountability?</li> </ul> | <ul style="list-style-type: none"> <li>Are there integration arrangements between objective setting and monitoring systems?</li> <li>Are evaluative and review mechanisms linked to long-term monitoring?</li> <li>Are monitoring and reporting strategic processes able to influence strategic processes and the allocation of resources?</li> </ul> | <ul style="list-style-type: none"> <li>Are social, economic and environmental outcomes from the system being monitored?</li> <li>Are monitoring and evaluation data being retained in the long-term?</li> </ul> |

### 3.0 Methods

The methods for this paper are as follows: Firstly a detailed literature review was undertaken to establish the contemporary and historical context of sustainability planning in the Cairns Region. This provided context for the discussion of the sustainability planning processes in the region. The dynamics of governance for sustainability planning in the region were then explored during an 18-month period of observation and unstructured conversations with the regional participants involved in sustainability planning and decision-making for the region. Regional participants represented a number of sectors (see **Error! Reference source not found.**Table 2), including: the research sector (universities, private organisations, and government research bodies), government sector (Local, State, and Federal Government agencies/departments), and regional non-government organisation (NGO) sector (designated regional NRM groups, community organisations, Indigenous organisations, advocacy groups, representative bodies, etc.). The researcher observed interactions and had unstructured conversations with regional participants and organisations at various events in the 18 month period, including annual general meetings, collaborative regional workshops, planning retreats, focus groups, and organisations' day-to-day activities. The unstructured conversations were guided by the questions contained in the GSA framework (see Table 1).

**Table 2: Summary of regional participants interviewed**

| Sector                         | Number of interviewees |
|--------------------------------|------------------------|
| Research sector                | 3                      |
| Government sector              | 4                      |
| Regional non-government sector | 3                      |
| <b>Total interviewees</b>      | <b>10</b>              |
| <b>Total interviews</b>        | <b>30</b>              |

Based on these observations and conversations a description of the governance system's key structural and functional components was developed using the GSA Framework matrix. This description was further developed and validated through an analysis of 30 semi-structured interviews with 10 regional participants using a three round Delphi process. Within an assessment matrix regional participants applied a five point scoring system (See Table 3) to indicate the functionality of institutions and institutional alliances in the region to complete the steps of the planning process. The content of the matrix was then further analysed against best practice principles of governance to assess the overall quality of the region's sustainability planning governance system. Governance reform priorities were then derived from this assessment.

**Table 3: Governance Systems Analysis Framework scoring system**

| Indicative score | Description   |
|------------------|---|
| 1                | The governance system is <b>dysfunctional</b> . The governance system is currently unable to deliver its intended outcomes.   |
| 2                | The governance system is <b>poorly functioning</b> . The governance system is in poor overall health and is likely to fail to deliver its intended system outcomes. |
| 3                | The governance system is <b>somewhat functional</b> . The governance system is on a knife's edge and could fail or succeed to deliver its intended outcomes.        |
| 4                | The governance system is <b>functional</b> . The governance system is in good overall health and is not likely to fail to deliver its intended system outcomes.     |
| 5                | The governance system is <b>highly functional</b> . The governance system is in excellent overall health and will not fail to deliver its intended system outcomes. |

#### 4.0 Governance of sustainability planning in the Cairns Region

Governance of sustainability planning outcomes in the Cairns Region is affected by the interactions of multiple legislative, planning and policy arrangements at state, local and national levels. The key players and their roles in these governance arrangements in the Cairns region are identified in Table 4 below. The Australian Constitution defines the distribution of power between the States and the Federal Government with respect to the environment and over time these have evolved substantially with concomitant impacts on the way that sustainability is viewed and managed in the Region. The sheer number of relevant planning instruments impacting on sustainability outcomes is beyond the scope of this paper to review. However, in order to contextualize the findings and our analysis we present a brief overview of some key arrangements impacting on sustainability planning in the Cairns Region. We focus on those addressing environmental sustainability, although we recognize that others are also relevant. Our review presents some key features of the sustainability planning system at key levels namely the international, national, state, local and at a property level.

**Table 4: Summary of key sustainability decision-makers in the Cairns region**

| <b>Key sustainability decision-makers</b>              | <b>Role</b>   |
|--|---|
| Terrain NRM  | <i>Planning and implementing environmental activities in the Cairns region and its surrounds</i>      |
| Wet Tropics Management Australia                       | <i>Conserving and managing the Wet Tropics World Heritage Area</i>                                    |
| Great Barrier Reef Marine Park Authority               | <i>Conserving and managing the Great Barrier Reef Marine Park</i>                                     |
| Far North Queensland Regional Organisation of Councils | <i>Coordinating action between councils within Far North Queensland (including the Cairns region)</i> |

#### 4.1 National Level

Managing environmental matters has not historically been the role of the Federal Government in Australia because of the division of powers in the Australian Constitution. Over the last 30 years this has changed substantially with increasing Federal Government intervention on matters of national significance. Section 51 of the constitutional framework provides the power at the national level to meet international obligations in relation to external affairs. Through a number of High Court Rulings Australia has expanded the legal scope of federal powers on environment matters through international treaties. Australia is a signatory to several international treaties and conventions for environmental sustainability. These solidify expectations, both nationally and internationally, about Australia's environmental duty of care requirements in particular circumstances. Key arrangements include the Ramsar Convention on Wetlands of National and International Significance, the World Heritage Convention, Agenda 21, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change (Kyoto Protocol). These conventions establish a framework for the Federal government to introduce other institutional arrangements at a national scale, to manage environmental resources in accordance with expectations.

Of particular relevance in the Cairns Region is the World Heritage Convention. This allows the Australian Government to identify National Heritage places and values and establishes procedures for environmental impact assessment to protect natural and cultural heritage values of national significance such as the Wet Tropics and Great Barrier Reef. It has also required the Australian government to enact and enforce national laws in accordance with international treaties. The Environment Protection and Biodiversity Conservation Act 1999 is an example of this.

In more recent years, the Australian Government has further increased its role in sustainability through fiscal centralization, especially since the GST was introduced in 2000. From this the Government has been able to lever policy control through environmental grants to achieve sustainability outcomes (Head, 2007). These are delivered both independently (as direct incentive grants to landholders and industry sectors) and in partnership with the State

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Governments (as tied grants). For example Caring for Our Country invested \$A2.25 billion between 2008-2013 into the management of the National Reserve System, biodiversity and natural icons, coastal environments and critical aquatic habitats (including Reef Rescue), sustainable farm practices, community skills, knowledge and engagement for NRM, and NRM in Northern and remote Australia.

Commonwealth funded research and information has also increasingly focused on meeting policy-making needs through applied research grants tied to environmental planning and management problems. Examples include the \$A20 Million/annum National Environmental Research Program for applied environmental research, and the Federal Cooperative Research Centre (CRC) Program, which invested \$3.4 billion (with an additional \$10.9 billion in cash and in-kind leveraged investments) in applied research across fields including environmental management. The Australian Government also funds Research and Development (R&D) Corporations, the CSIRO, and the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and Universities to provide strategic environmental, economic and social sustainability research focused around national goals and priorities. This is often linked to arrangements at state, regional and local scales.

### **4.2 State Level**

The management of natural resources is the primary responsibility of the States in the Australian Federation. As sovereign entities, the State governments create and maintain the planning and legislative systems that govern the use and management of natural resources. This typically occurs through legislation, policies, plans, and strategies to target and control the use of environmental resources (e.g. land, water, soil, vegetation, biodiversity, and minerals), to manage issues (e.g. harvesting, land degradation, pollution control) and regulate industry (e.g. agriculture, forestry, fishing, mining and minerals). Key Queensland Government arrangements for environmental sustainability include the *Sustainable Planning Act 2009*, *Environmental Protection Act 1994*, *Vegetation Management Act 1999*, *Nature Conservation Act 1992*, *Water Resources Act 2000*. In Queensland functional delivery of key aspects of the planning system is devolved to local government and they have taken on a key role in identifying and coordinating the implementation of the *Sustainable Planning Act 2009* through the integrated development assessment system (IDAS).

### **4.3 Local Government Level**

Local governments primarily regulate local land use and environment matters upon delegated authority from the Queensland Government. This is primarily achieved through the development control process. Local governments establish planning schemes, which set out aspirations for land use and desired environmental outcomes. Schemes incorporate input from local communities and broader regional considerations for growth and development, environmental conservation, the provision of major services and infrastructure. Local Governments then manage individual development applications in accordance with their scheme. Local governments also establish and maintain parks and environmental reserves, and they have roles in protecting and managing coastal resources, managing waste, managing environmental health and some local governments around Australia manage water supply.

### **4.4 Property Level**

Agricultural, urban, and indigenous traditional owners and the State itself manage the sustainability values of the Cairns Region at a property level. Property ownership is complex in this region and includes multiple combinations of freehold, leasehold, and native title. Over the past two decades, landholder use of key environmental resources such as land, vegetation and water has been decoupled from rights to own property. This has occurred via largely state laws to conserve vegetation and biodiversity, allocate and manage water resources, control land use and its intensity. Increasingly the management of environmental assets at the property scale is subject to incentive-based continuous improvement programs to adopt best management practices (BMPs)– to reduce environmental impact and improve sustainability outcomes. Participation in these schemes is largely voluntary. In practice Landholder management decisions are influenced or regulated by a broad range of social, cultural, economic and institutional– factors. Together this has a powerful impact on environmental sustainability outcomes.

As this brief overview highlights, sustainability planning in the Cairns region is governed by a complex system of policy mechanisms ranging from world heritage obligations and management arrangements at the international level through to statutory and non-statutory arrangements which guide planning and action at the property level. Although these arrangements are designed to achieve sustainability outcomes, the impact of multiple intersecting governance arrangements on sustainability planning is poorly understood.

## 5.0 Results and analysis

Cumulatively regional participants suggested that the structures for sustainability planning in the Cairns region are currently somewhat functional. Regional participants identified strong decision-making capacity, connectivity and knowledge use to support vision and objective setting, research and assessment, and strategy development in the Cairns region (See Table 5). The moderate strength of the structures and functions at the start of the planning process was in contrast to weaker structures and functions to support implementation and monitoring structures in the Cairns Region. While the structures for sustainability planning were considered somewhat functional in the Cairns Region, there remain a number of governance challenges to address. Quotes from regional participants are italicized in this section and identified by institutional sector, including regional non-government organisation, government agency, and research sector to ensure anonymity. Unless otherwise stated, the quotes are representative of consensus of opinion between regional participants.

**Table 5: Summary of structural and functional scores for sustainability planning governance in the Cairns Region**

|  | <b>Decision-making Capacity</b>   | <b>Connectivity</b> | <b>Knowledge Use</b> | <b>Total (out of 15)</b> |
|--|-----------------------------------|---------------------|----------------------|--------------------------|
| <i>Vision and Objective Setting</i>      | 4                                 | 3                   | 3.5                  | 10.5                     |
| <i>Research and Assessment</i>           | 3.5                               | 3                   | 2.5                  | 9                        |
| <i>Strategy Development</i>              | 3.5                               | 2.5                 | 3                    | 9                        |
| <i>Implementation</i>                    | 2.5                               | 3                   | 2                    | 7.5                      |
| <i>Monitoring, Evaluation and Review</i> | 2.5                               | 2                   | 2                    | 6.5                      |
| <b>Total</b>                             | 16                                | 13.5                | 13                   | -                        |
| <b>Average Score</b>                     | <b>3.2</b>                        | <b>2.7</b>          | <b>2.6</b>           | <b>8.5</b>               |
| <b>Region's Cumulative Average Score</b> | <b>2.83 (Somewhat functional)</b> |                     |                      |                          |

The Cairns Region is considered as '*one of the most planned for regions in Australia*' (Regional NGO) and has demonstrated moderately efficient, effective, adaptive, adequate, and sustainable structures and functions for sustainability planning. This is demonstrated by the Wet Tropic's first regional sustainability planning process in 2004, which successfully delivered a community-owned sustainability plan, and the realisation of the current planning process. The 2004 sustainability plan became '*redundant and ineffective*' (Regional NGO) relatively quickly following its publication. Subsequently, the current sustainability planning process is focused on moving away from the static planning model used in 2004.

The primary paradigm shift for the region's sustainability group is the recognition of planning as an ongoing process, rather than a process that occurs semi-regularly (e.g. every 5 years). Based on this paradigm, Terrain NRM is currently developing more effective engagement and planning structures and functions that can be used to support sustainability planning overtime, rather than developing a '*static big book plan*' (Government Agency). The transition towards

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framework-based planning is also likely to increase the equity, accountability, adaptability and sustainability of sustainability planning processes and outputs in the region.

Although the formal and informal relationships between the region's institutions are somewhat fragmented, there is a strong underlying capacity to mobilise effort and coordinate when necessary. Combined with a strong research sector, this demonstrates the adequacy and efficacy of structures and functions for vision and objective setting and strategic development for sustainability planning within the region. The State and Federal Government's lack of engagement in regional planning processes also diminishes the efficacy and adequacy of the existing structures and functions due to limited bipartisan support and overemphasis on project delivery as opposed to achieving policy objectives.

The return to a grant-based approach to regional sustainability in changes to Caring for Our Country funding program in 2008 has also limited the effectiveness of priority setting processes and delivery systems in the region. The State and Federal Government's short, project specific funding time frames (12 months to 3 years) are a significant barrier to efficient and effective sustainability planning and implementation. Although

*'things can be achieved during that time period; it is difficult to be strategic in such a short time. Effective consultation takes a minimum of six months, and doing bad consultation is worse than doing no consultation at all'* (Regional NGO).

The increasingly competitive nature of funding for sustainability has reduced the efficacy, efficiency, and adequacy of structures for strategy development and implementation by weakening the previously very strong collaborative culture in the region.

Strategy development and implementation structures in the region are not particularly adaptive or effective at current and

*'at the moment it's like running under water. It's really slow to respond, it's really difficult, it's really ineffective, but it can be done. Trying to turn some of those things around from a 7 year response to an emerging [issue] to a 3 month response would be helpful'* (Government Agency).

Declining availability of State and Australian Government funding in recent years have led to the some of the region's sustainability institutions scaling back their strategic and on-ground activities to only core functions. It has also required many of the key regional institutions engaged in sustainability, including Terrain NRM and the Great Barrier Reef Marine Park Authority (GBRMPA) to reduce staff numbers to ensure their ongoing efficiency and long-term institutional survival. Terrain NRM, GBRMPA, and the Wet Tropics Management Authority (WTMA) have demonstrated that their structures are flexible and capable of reorganizing and restructuring as needed to ensure their ongoing efficacy and efficiency following changes to financial resource availability. However, the decline in resources has significant short and long-term implications for the sustainability, adequacy, and efficacy of sustainability functions in the region.

Despite the region's sustainability institutions sharing a common vision for the region's natural resources, *'because partnerships are weak, what resources that do exist are not being used effectively, so we rely on external resources to fill the gap.'* (Regional NGO). Regional weed management structures and functions in the region exemplify this. Weed management in the region is currently based entirely on property boundaries, rather than the geographic area infested by weeds and requiring management. Management of cassowaries, and other at risk or endangered species similarly often occurs within institutional jurisdictions (e.g. within a national park), despite the range and habitat of such animals extending beyond the arbitrary lines on maps for such areas. Such inefficiencies can only be reduced through improved connectivity and coordination between regional decision-makers. Knowledge integration and socio-economic data availability is slowly improving in the region, but remains a significant limitation to effective, adaptive, efficient and integrated sustainability planning structures and functions for the Cairns.

Monitoring structures remain weak in the region despite requirements for sustainability projects that are linked to Federal and State Government funding programs to monitor and report on the activities undertaken. In this sense, the region's institutions *'can do monitoring and measure how many farmers we gave grants to, and [identify] the area of impact'* (Regional NGO). However, many interviewees strongly emphasised that existing monitoring structures do not connect activities and outcomes, and are largely focused on outputs. They argue that this limits the decision-makers understanding of whether their activities are effective or efficient in achieving desired outcomes.

Developing and implementing monitoring structures has been a relatively low priority for many of the region's institutions, and *'the reality is we don't get paid to do monitoring'* (Regional NGO) and institutions *'just want to get on with stuff. They don't want to do monitoring'* (Government Agency). The accountability of institutions involved in implementing sustainability strategies is subsequently low, due to a lack of monitoring of sustainability outcomes in the region. Similarly, decision-makers are unable to use existing monitoring data to be adaptive in their planning because existing monitoring processes are often focused on *'we said we would do X and then asking did we do X or not. We hardly ever ask whether doing X made any damn difference and that's something that needs to occur across catchments'* (Government Agency). The inadequacy of monitoring structures is further emphasised by their failure to account for the *'long term impacts of projects which aren't evident in an 18 month or 2 year project. You don't see impacts that quickly'* (Regional NGO).

### **6.0 Discussion**

The quality and responsiveness of governance arrangements to emerging problems is critical to achieving sustainability planning outcomes in cities and communities. Despite this, the complex relationship between governance and sustainability remains poorly understood (Dale et al., 2013b). The governance arrangements for sustainability planning in the Cairns region are balanced precariously on a knife's edge and could fail or succeed to deliver sustainability outcomes. While a range of government and non-government institutions sustain the current governance arrangements, the lack of alignment between regional organisations involved in the strategic development and delivery processes for sustainability policies is a significant risk to the sustainability aspirations of the region. It is consistent with the argument that institutional capacity develops and disperses through the connections between structures (Innes & Booher, 2004). It also reiterates that connectivity between organisations and institutions within governance systems is critical to the overall systems' capacity to deliver sustainability outcomes.

### **7.0 Recommended Governance Reforms**

The governance system for sustainability planning in the Cairns is mature and has developed significantly in the last decade. However, in order to improve the sustainability of the Cairns region and its governance arrangements for sustainability, a number of reforms are necessary. They were formulated by the researchers through an analysis of the findings above and are discussed below.

#### **7.1 Strategy and Effort Alignment Across Scales**

The fragmentation of sustainability delivery systems in the region would benefit greatly from a two-pronged approach. Firstly, the establishment of a regional sustainability committee that includes the major sustainability decision-makers and implementers in the region would provide a mechanism not only for negotiation, but also coordination and collaboration. This committee would provide an opportunity for diversification of the currently limited solutions mix for sustainability, drawing on institutions' varied capacities and mandates, while also ensuring regional institutional interests are considered in strategy development.

#### **7.2 Enhanced Knowledge Brokerage and Collaboration Frameworks**

The Cairns Region has a particularly strong and regionally focused research sector that has established a solid foundation of knowledge to inform sustainability. However, there remain gaps between researchers and end-users, several reforms are suggested. Firstly, in order to increase the integration of social, economic, biophysical, and cultural research in the region, a

full time, region specific knowledge broker/s (as opposed to the current part time knowledge broker) is necessary. The knowledge broker could continue to be hosted by the CSIRO, as the position is currently, and continue to support sustainability planning and decision-making throughout the Cairns region. However, the knowledge broker's role should be broadened from its current climate focus, to a more integrated approach that seeks to develop greater connectivity between researchers from multiple disciplines (not just biophysical) and end users. A second reform stemming from this is the integration of the knowledge broker with monitoring and evaluation frameworks, ensuring enhanced data management and synthesis over time. Additionally, research that is industry-relevant and useful to end-users should be incentivized both financially and institutionally. This would ensure that research would be driven by the needs of end-users, rather than by an individual researcher's passion or the regionally abstract priorities of funding bodies.

### **7.3 Monitoring and Reporting Sustainability Activities and Outcomes**

Monitoring of sustainability activities broadly across the region is almost non-existent, with only a small number of specific projects in the Cairns currently involving monitoring beyond measurable outputs. The region's institutions could establish or apply monitoring and evaluation frameworks that are more robust, pragmatic, and regionally consistent than the existing MERI or SOE reporting mechanisms. These frameworks could be further supported through the creation of a region or state-wide database to store and manage monitoring data. This data would then be accessible by organisations and agencies with an interest or role in sustainability planning both within and external to the region, enabling institutions to build on the successes of others, while identifying ineffective or inefficient strategies prior to investment or implementation.

## **8.0 Conclusions**

This paper analysed the governance arrangements for sustainability planning in the Cairns region. An analysis of regional perspectives reveals that the decision-making arrangements for sustainability planning in the Cairns region are sitting on a knife's edge and could fail or succeed to deliver their intended decision-making outcomes. This is due to a combination of fragmentation between some institutions, high levels of decision-making capacity (despite high levels of operational capacity), and limited data availability to support decision-making. Broader attention and greater investment in institutional coordination and active monitoring of sustainability activities are necessary to ensure the long-term sustainability and achievement of planned sustainability outcomes in the Cairns region.

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