International Network for Government Science Advice

INGSA CASE STUDIES

Coralesia

Balancing Biodiversity Sustainability & Indigeneous Population Interests

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Background and context

Coralesia is an archipelago country; consisting of 50 islands. Coralesia extends along the Equator for about 500 miles and extends 400 miles in its greatest north-south dimension. Situated between the Pacific and Indian oceans, the islands of Coralesia enclose various seas. As a result, Coralesia has developed diplomatic ties with various other countries that share these international waters. Due to the strategic location of these international waters, these diplomatic ties are continuously under threat as there remains unresolved disputed territories. Coralesia became a United Nations-recognised independent country in 1982.

Coralesia is a parliamentary democracy. The majority of the rural population of Coralesia are the indigenious population, the Sepian. While, the majority of the urban population are Temuan people that share a strong genetic lineage with the Megalion population who are the ruling class of Megalia. While evidence of Sepian settlement in Coralesia date back to more than 1000 years, the earliest evidence of Temuan settlement in Coralesia date back to 100 years; although huge wave of Temuan migration from Megalia into Coralesia occurred 100 years ago. Until independence, the Sepian language and culture was systematically suppressed by the Temuan settlers but over the last decades their position in the Coralesian society has improved. Efforts have been made to revive the Sepian language and anime religion and culture by setting up early childhood centres, schools and adult immersion courses. The Sepian traditional knowledge has become increasingly valued. In particular their oral culture, traditional ecological knowledge and indigenous practices have come to be highly appreciated by the Coralesian officials and local scientists, in the context of environmental protection.

Most of the islands of Coralesia receive rainfall from both the northeast and southwest monsoons. Another climatic element is the tropical typhoon, of which more than 20 arise each year in the southwestern Pacific (July to November) and then swing westward and northward, bringing violent winds and heavy rains to Coralesia. In 2017, a major typhoon wrecked through the Coralesia; resulting in significant damages. A large and rich neighbouring country, Megalia provided signficant aid to Coralesia; including providing development low-interest loans to rebuild roads and communication infrastructure that were destroyed by the typhoon. Megalia's largest telecommunication and construction conglomerate Megatron were awarded a large share of these contracts. As a result, Coralesia was able to rebound quickly from the destruction faced from the typhoon and 2 years after the disaster, the country's communication infrastructure is better than never.

Coralesia islands' economy is very dependent on its fertile soil and rich natural resources. The population is 70% urban and 30% rural. The majority of the urban population are involved in the banking and service industry (Coralesia is a tax-haven) while the rural populace are sedentary cultivators, usually growing irrigated rice but sometimes corn (maize), yams, or cassava as their principal food crop. Other important resources include the forests, which provide valuable timber, resins, rattans, and additional gathered products. Petroleum is the chief mineral resource, exploited offshore of these islands. Manufacturing is not greatly developed. The most important industries are handicraft production and the primary processing of agricultural and mineral products for export. The majority of the urban population is highly educated; most of whom are environmentally-concious; although much of the eco-friendly behaviour is dependent on convenience.

Coralesia's economy is also very dependent on eco-tourism. The flora and fauna of the archipelago are extremely rich and varied and reflect the strategic location of Coralesia islands as a bridge between Asia and Oceania. In fact, Coralesia derives its name from the rich coral reefs and marine life that are amongst the most biodiverse in the world. The sea occupies a major role in the Sepian culture: they see themselves as seafarers and guardians of sea creatures; as part of their animistic religious belief. However, as a result of global warming, unsustainable fishing (mostly by Temuan fishermen; the Sepian tend to fish only for their own consumption), tourism and petroleum drilliing, the coral reefs and unique marine creatures are continuously under threat. Accidental introduction of alien invasive fish species have also negatively impacted a few native species.

Recently, the government of Coralesia announced the establishment of a large marine protected area some 200 kilometres off the coast of the largest island of Coralesia, Reefa where many sacred religious Sepian sites are located. The government plans to make it the third largest marine protected area in the world. No fishing or seabed development will be permitted. Nevertheless, the protected marine area will house a world-class marine research that will be primarily sponsored by Megalia. Top marine researchers around the world will be invited to conduct research and rehabilitation programmes. The Sepian community immediately objected to the plan. They fear that this is further evidence of a Megalian 'invasion' and government corruption.

The Sepian community also complain that the Coralesian government did not consult them and that it is not the Sepian but the Temuan that are the threat to the marine ecosystem. The significant loss from eco-tourism is unimaginable to many Sepian families. They argue that this another way the Temuan-led government is discriminating against them. Scientists are divided; some believe the merits of developing the protected area while some believe that collaboration with the Semuan; with their rich oral tradition about the biodiversity would be more useful. Some scientists are also concerned that the potential intellectual properties generated from the research centre will only benefit Megalia. There is great distrust regarding Megalian's interest in this endeavour.

Sepians also argue that effectively separating humans from nature breaches an important bond and does not bring about sustainability. Instead, they propose to the government to accept the traditional Sepian ways of environmental stewardship which are based on a principle of respectful human-environment interaction.The government however does not

think this strategy is appropriate for today's context, where there are far more interests involved. It points to its international commitment to protect 10% of marine space, suggesting they need to be more proactive. There are also some concerns regarding the Sepian tribal leaders, one of whom is known to have been in discussion with an international natural gas exploration company specialising in seabed natural gas reserves.

Elections are in 12 months, the Prime Minister of Coralesia is concerned that this decision is going to significantly affect the Sepian vote that will determine the outcome of the election. The Prime Minister is very keen in ensuring Coralesia's rich marine biodiversity and the good relationship with Megalia is sustained. His Cabinet proposes that they postpone decision until after the elections. However, the opposition party has taken advantage of the situation and independent of the government decision, they will risk alieneating a segment of the population. Protest groups from both rural and urban communities are developing and the media is also divided; further stoking fuel into this debate. In fact, delaying the decision may be seen as a sign of incompetency and indecisiveness.

You are the scientific advisor to the Prime Minister and Cabinet, a post that has recently been created on a trial basis. The Prime Minister seeks your advice.

What considerations do you need to bear in mind in doing so? Note: this question is not only about making a specific recommendation but rather about the process and considerations in doing so.

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ABOUT INGSA

INGSA provides a forum for policy makers, practitioners, academies, and academics to share experience, build capacity and develop theoretical and practical approaches to the use of scientific evidence in informing policy at all levels of government.

INGSA's primary focus is on the place of science in public policy formation, rather than advice on the structure and governance of public science and innovation systems. It operates through:

- Exchanging lessons, evidence and new concepts through conferences, workshops and a website;
- Collaborating with other organisations where there are common or overlapping interests;
- Assisting the development of advisory systems through capacity-building workshops;
- Producing articles and discussion papers based on comparative research into the science and art of scientific advice.

Anyone with an interest in sharing professional experience, building capacity and developing theoretical and practical approaches to government science advice is welcome to join INGSA.

By signing up to the INGSA Network you will receive updates about our news and events and learn of opportunities to get involved in collaborative projects.

Go to http://www.ingsa.org for more information.

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Notes for mentors

Considerations:

1. Who are the stakeholders involved?
2. Evidence for and against the support of marine protected areas: do they help restore biodiversity or are they a grand gesture that yield dissapointing results? What is the evidence?
3. How should traditional ecological knowledge (TEK) be treated in this context? What is the distinction between TEK and indigenous beliefs/worldview? Can and should TEK be held to the standards of science? How can it contribute knowledge that science cannot?
4. How to reconcile two different approaches to sustainability? Is the approach argued for by the Sepian people realistic in the modern environment, against strong commercial interests?

Different stakeholders

- Coralesian government
- International marine conservation organizations: state-level (e.g. within UN) and NGOs & Scientists
- Local Scientists
- Indigenous Sepian people: political representation at the national level; tribal councils and local representatives
- Oil and gas industry
- Fishing industry
- Megalia Government