A RANGE OF POTENTIAL CONSERVATION FUNDING OPTIONS EXIST

Carbon Funding

The carbon markets channel private finance to projects which reduce emissions of greenhouse gases, thereby helping to mitigate climate change.

In S. Pulai there is potential for a project based on changes to the current forest management practices - a cessation of logging activities would allow the mangroves to age, increased growth would render additional carbon sequestration, which could be used to generate carbon credits for sale on the voluntary market.

A carbon project would thereby address one of the major sources of degradation to S. Pulai, while also generating a revenue stream.

Initial calculations suggest the potential carbon revenues could comfortably cover the opportunity costs of logging.

Central net NPV estimate: USD 16 to 54 million over 30 years

This is however subject to significant uncertainty and risks. Few if any of the key practical, legal and institutional building blocks required to implement a successful carbon project are currently in place.

A detailed feasibility study is required to allow an informed decision to be taken with greater clarity on the potential costs and timelines.



Ramsar Conservation Initiative Jointly developed by Khazanah Nasional Berhad and Iskandar Regional Development Agency

Environmental Compensation Fund

Environmental compensation funds source and hold financial capital and distribute this capital for environmental projects and conservation activities. To capitalise a fund you can:

- Target polluters causing environmental damage ('polluter pays').
- Target beneficiaries of particular environmental services ('beneficiary pays').

Several mechanisms can be used to capitalise a fund:

Ear-marked taxes:

levied on economic activity, set aside for a defined purpose.

Charges:

for the use of or access to an environmental good or service.

Fines:

for polluting activities (primarily to encourage investment in prevention).

Voluntary corporate contributions:

to enhance reputations or licence to operate.

International Donors

Malaysia is not a priority target for most development oriented donors. However, it may be possible to attract funding or in kind support from major international conservation donors. For example:

Global Environment Facility (GEF)	 Since 1991 GEF has approved 14 projects in Malaysia, with USD 46 million direct funding and USD 118 million in co-financing.
	 It is about to launch a project: Enhancing Effectiveness and Financial Sustainability of Protected Areas in Malaysia
	LifeWeb is an online portal run by the
LifeWeb	Convention on Biological Diversity which can be used to advertise projects and attract donors. LifeWeb has facilitated the allocation of USD 200 million to 58 project proposals since 2008.

However, a project would need to demonstrate exceptional conservation outcomes with community co-benefits, offering value for money with private and public co-funding.

Alternative funding options

These three conservation funding options were selected as the most promising from a wide range of possibilities. Other options include, for example: corporate or individual donations, fees for bio-prospecting or other sustainable resource extraction, or enhanced revenues from tourism and recreation.





MANGROVE MATTERS

True value: Johor's Ramsar sites and solutions for conservation



MANGROVES AT RISK

The Ramsar sites of South Johor; Tanjung Piai, Sungai Pulai, and Palau Kukup provide valuable benefits to the region and internationally.

Ramsar Convention on Wetlands

They are also recognised as internationally important under the Ramsar Convention on wetlands - an international treaty passed in 1971 formalising the commitment of 160 member countries to maintain the ecological character of 188 million hectares of Wetlands of International Importance and to plan for the 'wise use' of all wetlands in their territories.

However, they are under increasing pressure from economic development, including:



Continued encroachment: Industrial. commercial, agricultural and residential development has resulted in continued conversion of boundary of the sites

areas around the Logging: 242 ha of S. Pulai is clear felled each year on a 20 year

rotation. As a result more than 80% of the site is less than 20 years old and shows signs of physiological stress and slower recovery rates





Changing hydrology: The S. Pulai river mouth was narrowed by 50% and dredged to construct the port. Agricultural bunds disrupt water and nutrient flows



Erosion: Natural wave action causes erosion but this is accentuated by ship wakes; T. Piai is losing an average of 7 meters per year to erosion

> Pollution: The area is still recovering from a 25,000 tonne oil spill following a collision in 1997. Risks of pollution are likely to increase with the adjacent port expansion and a major petrochemicals facility currently under construction



THE VALUE OF THE SITES

Johor's Ramsar sites are hugely valuable, both to the economy of Johor and internationally. However, this value is often overlooked because the benefits are assumed to be 'free' and enduring. As a result the value is being eroded - to the detriment of current and future generations in Johor.

A new approach is called for; one that avoids the continuing loss of value.

It is important that the Ramsar sites are not seen as a drain on the local economy, but as a crucial part of it. This work is designed to help raise awareness of the value the sites provide, so that it can be taken into account in decisions which affect the mangroves.





as well as to global society.



The valuation is based on the framework of Total Economic Value, including both services currently traded in markets and services that benefit society but do not currently have markets associated.

Market values:

Non-market values:

Calculating the NPV:

The NPV is calculated over 50 years using a social discount rate of 2%.

Johor's mangroves provide a range of valuable benefits to local communities, local businesses and the wider economy of Johor,

Protect the coastline from erosion, flooding and salt water intrusion

Filtration of impurities from water supporting aquaculture

Harbour rare and endemic biodiversity

Carbon storage helping to mitigate climate change

Attract tourists with unique visitor experience

Support freshwater fishing industries

Provide a source of timber and fuel

How these values were derived

 Including: commercial fisheries, aquaculture, tourism, freshwater fisheries and commercial timber. Estimates were derived based on the net revenue of the industry in the region and the degree to which the industry relies on the mangroves for maintaining its revenues.

 For example, 35% of the value of commercial fisheries in Johor is dependent on mangroves which provide nursery habitats; this was attributed to the Ramsar sites based on their area relative to the total mangrove area in Johor.

Including: coastal protection, biodiversity, and carbon storage.

Estimates were derived based on the social value of these services. For coastal protection and carbon storage the potential replacement cost was used as a proxy, based on the cost of sea walls and current carbon offset price, respectively. For biodiversity, the estimate was drawn from other studies in the area which use welfare economics to derive the amount people are willing to pay to protect similar sites.