Biosecurity challenges and progress on Aldabra

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What is island biosecurity?

Island biosecurity is:

Managing the pathways of people and supplies to islands to prevent invasive **alien species (IAS)** arriving and becoming established

Island biosecurity involves:

1. Prevention
2. Surveillance (for early detection)
3. Incursion response

Why invest in biosecurity?

1. Prevent other IAS establishing

2. To reduce chance of incurring huge costs for pot. eradication

- Pacific Invasive Ant forum estimates invasive **ant eradications** on islands costs **USD 18,966/ha** to implement: Early detection pays off! (→ Aldabra 15,500 ha = USD 293m)

3. To put Aldabra in the best position for a rat and cat eradiction

Why invest in biosecurity?

Easier (financially/sucess rate) to stop IAS getting to an island, than removing them once established.

(Prevention – Surveillence – Incursion response)

Previous IAS projects

Mainstreaming the management of invasive alien species to preserve the ecological integrity and enhance the resilience of Seychelles World Heritage Sites (EU-funded, 2011–2015, €972,022)

Selected Aldabra related results:

- Eradication of feral goats from Aldabra (last 5 years only, 185,105 USD)
- Eradication of two avian IAS from Assumption
- Feasibility study on possibility and cost of combined rat and cat eradication, incl. impacts on non-target species
- Eradication of sisal
- Initial biosecurity plan

Previous IAS projects

Eradication of introduced birds to preserve Aldabra Atoll's outstanding universal values (USD 73,800)

United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Aldabra Atoll
inscribed on the World
Heritage List in 1982

Atoll d'Aldabra
inscrit sur la Liste
du patrimoine
mondial en 1982

Results:

- Eliminate threat by newly introduced invasive bird species
- Return to status of being free of introduced avifauna
- Red whiskered bulbul was eliminated
- Total of 104 Madagascar fodies were culled
- Research on hybridisation of native and introduced fody species confirmed presence of hybrid birds
- RWB being the first introduced bird eradication from one of the Seychelles' Outer Islands

Institutionalisation and implementation of biosecurity measures to ensure sustainable conservation management of biodiversity on Aldabra Atoll (2017-2018, € 100,000)

Results:

- Biosecurity infrastructure on Aldabra & Mahé
- Review biosecurity plan with ID guides for potential IAS
- Equipment to implement biosecurity plan (pest-proof containers)
- Increased institutional capacity to address IAS threats
  - → Training of Mahé & Aldabra staff
  - → Biosecurity checks of all supplies & luggage
  - → Regular biosecurity reporting for boats, planes and visiting vessels
- Insect and rat control in Mahé storage places and on supply boats
- Biosecurity video and regulations for staff and visitors

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Remaining risks and challenges

1. Supply boats that beach after visiting other islands are highest biosecurity risk
2. Yellow crazy ant abundance has increased on Mahé (observed at supply boat loading site!) but lack of quarantine facilities
3. Many good prevention measures now in place but these need to be accompanied by an early detection and rapid response system to avoid costly and difficult eradication
4. Shortage of equipment (pest proof containers & pest surveillance)
5. Maintain institutional capacity and highly trained core of staff on Aldabra and Mahe

Future objectives

1. Supply boats chartered solely by SIF to minimise biosecurity risks as much as possible
2. Quarantine facilities: to complete on Aldabra and to be built/improved on Mahé
3. Increase quantity and range of pest-proof transport containers
4. Set up robust surveillance systems → early detection
5. Finalise and operationalize rapid response protocols (ants & mice)
6. Establishment of a long-term biosecurity monitoring programme

Biosecurity costs money…

BUT

…eradication costs more money




Immediate investments required

	SCR
Quarantine requirements *(pest-proof fit out of new SIF shipping container)*	80,000
Pest-proof storage containers for transport *(2nd set of alu containers, light containers for planes, and storage options for shop)*	400,000
Surveillance equipment *(plastic pots, traps, wood for tunnels)*	35,000
Incursion response equipment *(herbicide, ant poison, bait spreaders, traps)*	50,000
Total (SCR)	**585,000**

Annual biosecurity budget required

Specifics	SCR
Quarantine requirements *(regular fumigation, pesticides, baits, traps)*	25,000
Additional budget needed for two SIF chartered supply boats per year *(average annual supply boat expense of SR 1.4m (four shared boats) vs two SIF charted boats amounting to SR 2.2 m per year)*	800,000
Salary for biosecurity officer (x2)	360,000
Pest-proof container maintenance	15,000
Annual training	10,000
Total (SR)	**1,210,000**

*Estimatesd invasive **ant eradications** on islands costs **USD 18,966/ha** to implement:*

Early detection pays off! (→ Aldabra 15,500 ha = USD 293m)

Future plans

- Biosecurity fully integrated into daily operations and all staff members fully aware of importance and engaged
- Fully equipped and operational biosecurity infrastructure
- Rat & cat free Aldabra
  → eradication costs estimated US 8m
- No newly introduced IAS
- Rapid response plans in place in case of incursions

Thank you

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