

Potential for Eco-tourism Development in Small Islands of Sri Lanka: A Preliminary Investigation

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Purpose of the study

National and international visitors and major investments in Sri Lanka are concentrated in:

- clusters and corridors around Colombo as a commercial hub,
- the beaches of the southwest and southern coasts,
- Yala and other national parks,
- the tea estates and forests of the Central Hill Country, and
- the historic and religious heritage of the Cultural Triangle.

All these activities cover the main island of Sri Lanka.

Even though, a considerable amount of small islands is situated in our coastal waters, these islands **have neglected in tourism development perspective.**

Purpose

- **Accordingly, this study reveals the potential for ecotourism development in small islands of Sri Lanka as a preliminary investigation keeping in mind to promote different aspects of tourism, e.g. ecotourism, geotourism and archaeotourism.**
- **Untouched islands of Sri Lanka can be found in Puttalam Lagoon, Dutch Baby, Portugal Bay, Gulf of Mannar and from Palk Bay areas.**
- **Most of islands in above areas are coral islands, formed by corals, coral sand and mud flats.**
- **Many of them are significant for the study of different disciplines such as physical phenomena, social and cultural aspects, agriculture, economic status and infrastructure etc.**

For of this presentation, data and information collected from published material, Explore Google Earth, Mapcarta and with limited field studies.

WHAT IS ECOTOURISM

Ecotourism is a relatively new concept, and it is still often misunderstood or misused.

Some people have abused the term to attract conservation conscious travelers to what, in reality, are simply nature tourism programs which may cause negative environmental and social impacts.

While the term was first heard in the 1980s, the first broadly accepted definition, and one which continues to be a valid “nutshell” definition was established by **The (International) Ecotourism Society in 1990:**

“Responsible travel to natural areas that conserves the environment and improves the well-being of local people”.

Ecotourism Development – A Manual for Conservation Planners and Managers Volume 1: An Introduction to Ecotourism Planning, Second Edition: *Editor, Alex Singer .*

Similarly, Ecotourism is now defined as **"responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education"** (TIES, 2015).

Education is meant to be inclusive of both staff and guests.

Principles of Ecotourism

- **Minimize physical, social, behavioral, and psychological impacts.**
- **Build environmental and cultural awareness and respect.**
- **Provide positive experiences for both visitors and hosts.**
- **Provide direct financial benefits for conservation.**

What is an Island

A tract of land surrounded by water and smaller than a continent.

An island or isle is any piece of sub-continental land that is surrounded by water.

Very small islands such as emergent land features on atolls can be called islets, skerries, cays or keys.

An island in a river or a lake island may be called an eyot or ait, and a small island off the coast may be called a holm.

Landmasses of the earth

- **1 Continental landmasses**
- **2 Islands**
 - **2.1 Islands 100,000 km² (39,000 sq mi) and greater**
 - **2.2 Islands 25,000–99,999 km² (9,653–38,610 sq mi)**
 - **2.3 Islands 10,000–24,999 km² (3,861–9,652 sq mi)**
 - **2.4 Islands 5,000–9,999 km² (1,931–3,861 sq mi)**
 - **2.5 Islands 2,500–4,999 km² (965–1,930 sq mi)**
 - **2.6 Islands 1,000–2,499 km² (386–965 sq mi)**
 - **2.7 Islands smaller than 1,000 km² (>386 sq mi)**

Rank	Island's name	Area (km ²) ^l	Area (sq mi)
1	Greenland	2,130,800	822,700
2	New Guinea	785,753	303,381
3	Borneo	748,168	288,869
4	Madagascar	587,041	226,658
5	Baffin Island	507,451	195,928
6	Sumatra	443,066	182,812
7	Honshu	225,800	87,200
8	Victoria Island	217,291	83,897
9	Great Britain	209,331	80,823
10	Ellesmere Island	196,236 ^l	75,767

Rank	Island's name	Area (km ²) ^l	Area (sq mi)
21	Hokkaido	78,719	30,394
22	Hispaniola	73,929	28,544
23	Sakhalin	72,493	27,990
24	Banks Island	70,028	27,038
25	Sri Lanka (main island)	65,268	25,200
26	Tasmania	65,022	25,105
27	Devon Island	55,247	21,331
28	Alexander Island	49,070	18,950
29	Isla Grande de Tierra del Fuego	47,401	18,302
30	Severnny Island (Novaya Zemlya, north)	47,079	18,177

Sri Lanka and its surrounding islands by size

Sizes of the islands (sq km)	No. isl.	Total sq km
Sri Lanka (Main Island	1	65,268
Not mentioned	4	0
0.01 - 0.4	42	6.55
0.40 - 1.0	14	9.85
1.0 - 5.0	19	42.25
5.0 - 50.0	6	110.3
50 >	2	190.47
Total reported island	87	359.42
65268+359.42 = 65627.42 Total Land Area 65,610 ±17.42		

Island	Province	District /DS Division	Area (km ²)	Population (Appr.)
1. Thuruthupiddi	Northern	Jaffna Valikamam West (Chankanai)	0.14	Uninhabi-table
2. Karaitivu Island	Northern	Jaffna Karainagar	22.95	9576
3. Parititivu	Northern	Jaffna	0.38	Uninhabi-table
4. 5Eluvaitivu	Northern	Jaffna, North of (Kayts)	1.40	800
5. Analaitivu	Northern	Jaffna	4.82	2,200
6. Puliyantivu	Northern	Jaffna North (Kayts)	0.44	
7. Kayts (Velanai)	Northern	Jaffna	64.01	16,300
8. Kuruchaditivu	Northern	Jaffna	0.05	
9. Chirutivu (Sirutivu)	Northern	Jaffna	0.28	
10. Negiyanpittivu	Northern	Jaffna - Delft	0.02	
11. Palativu	Northern	Kilinochchi Pooneryn	1.81	
12. Avarampatitivu	Northern	Kilinochchi Pooneryn	0.01	Uninhabi-table
13. Mandaitivu	Northern	Jaffna - Pooneryn	7.56	1,524
14. Delft (Neduntivu)	Northern	Jaffna Neduntivu (Delft)	47.17	4,200
15. Karaitivu	Northern	Jaffna - (Velanai) Pungudutivu	0.97	

Island	Province	District /DS Division	Area (km ²)	Population (Appr.)
16. Kakeraitivu Island	Northern	Jaffna Neduntivu (Delft)?	0.14	Uninhabi-table
17. Pungudutivu	Northern	Jaffna - Delft	22.56	
18. Kurikadduvan Island	Northern	Delft	0.38	
19. Nainativu (Nayinativu)	Northern	Jaffna - Delft	4.22	2,700
20. Kanantivu	Northern	Jaffna Between Kayts and Pungudutivu.	1.22	
21. Kachchatheevu	Northern	Jaffna - Delft	0.68	
22. Uraitivu	Northern	Jaffna - Delft	0.01	
23. Nadaturitti vu sw of Pungudutivu	Northern	Jaffna Delft	0.88	
24. Palaitivu Adjacent to(Northern	Jaffna South of (Velanai)	0.16	
25. Puvarasantivu	Northern	Jaffna - Delft	0.05	
26. Mantivu	Northern		0.32	
27. Kannativu	Northern	Jaffna - Delft	0.19	
28. Erumativu (1)	Northern	Kilinochchi - Tunukkai	1.04	
29. Kakkativu	Northern	Kilinochchi - Tunukkai	1.1	

Island	Province	District /DS Division	Area (km ²)	Population (Appr.)
30. Iranaitivu North	Northern	Kilinochi Tunukkai	4.22	
31. Iranaitivu South	Northern	Kilinoch Tunukkai	1.71	
32. Kilachchitivu	Northern	Mannar – Mankulam	1.71	
33. Mannar	Northern	Mannar Mannar Town	126.46	35,817
34. Puliyantivu	Northern	Talaimannar	0.9	
35. Kalliaditivu	Northern	Talaimannar	1.71	
36. Erumaitivu (Dutch Bay)	North Western	Puttalam	0.9	
37. Periya Arichchal	North Western	Puttalam	0.3	Uninhabi-table
38. Sinna Arichchal	North Western	Puttalam	0.16	Uninhabi-table
39. Ippantivu (In Dutch Bay)	North Western	Puttalam - Kalpitiya	0.76	
40. Karaitivu and Battalangunduwa	North western	Puttalam - In Battalangunduwa Island chain	5.0	
41. Karaitivu Kalpitiya northern end		Puttalam - Kalpitiya	Long island	Uninhabi-table
42. A mbanttativu	North Western	Puttalam Kalpitiya	0.17	
43. Saliyampiddi	North Western	Kalpitiya	0.1	Uninhabi-table
44. Oddakarentivu	North Western	Kalpitiya	0.2	

Island	Province	District /DS Division	Area (km²)	Population (Appr.)
45. Neduntivu	North Western	Puttalam	0.1	
46. Pullupiddi	North Western	Puttalam	0.11	
47. Somativu	North western	Puttalam – Kakpitiya	0.2	
48. Udayurputi Island	North western	Puttalam	0.42	
49. Karaditivu	North Western	Puttalam	0.09	Uninhabi-table
50. Mantivu	North Western	Puttalam	0.5	
51. Henativu/ Havativu	North western	Puttalam	0.78	
52. Periyativu	North Western	Puttalam	1.1	
53. Maripututivu	North Western	Puttalam	0.1	
54. Mattutivu	North western	Puttalam	0.12	
55. Barberyn Island lighthouse	Southern	Galle - Beruwala	3.3	
56. Panchakapaduwa Island		Galle - Beruwala	1.5	
57. Ambanagoda Rocky Islets	Southern Province	Ambalangoda	1.5	Sanctuary
58. Sinigama Island	Southern	Hikkaduwa - Alutgama	0.2	Dewalaya
59. Hikkaduwa Rocky Islets	Sothern	Hikkaduwa	1.5	

Island	Province	District /DS Division	Area (km ²)	Population (Appr.)
60. Taprobane Island	Southern	Weligama	0.22	
61. Crow Island	Southern Province	Galle	0.1	
62. Pareya Duwa (Parevi Duwa)	Southern	Matara	0.25	
63. Gan Island	Southern Province	Weligama	0.04	
64. Nilwella Blue Island	Southern Province	Matara - Dikwella	0.25	
65. Yakinigeduwa	Southern Province		0.3	
66. Great Basses reef	Southern	Operated and maintained by the Ports Authority	-	
67. Little Basses		Operated and maintained by the Sri Lanka Navy	-	
68. Serayativu	Eastern	Batticaloa	0.3	
69. Bone Island	Eastern	Batticaloa, Manmunai North Lagoon Island	0.2	
70. Puliyanthivu	Eastern	Batticaloa, Manmunai North	1.56	7,034
71. Mantivu	Eastern	Batticaloa	0.38	
72. Nachuvantivu	Eastern	Batticaloa, Kalkudah Koralai Pattu	2.11	
73. Buffalo Island	Eastern	Batticaloa, Manmunai North In Batticaloa Lagoon	5.02	
74. Periyativu (Periyativu)	Eastern	Batticaloa, Manmunai South-West	0.13	

Island	Province	District /DS Division	Area (km ²)	Population (Appr.)
75. Mantheevu	Eastern	Batticaloa, Koralai Pattu North	0.18	
76. Challitivu	Eastern	Batticaloa, Koralai Pattu North	0.9	
77. Round Island	Eastern	Trincomalee	0.4	
78. Little Sober Island	Eastern	Trincomalee	0.7	
79. Sober Island	Eastern	Trincom., Town & Gravets	0.62	
80. Yoke Island	Eastern	Trincomalee	0.02	
81. Power Island	Eastern	Trincomalee	0.01	
82. Elephant Island	Eastern	Trincomalee	0.06	
83. Mangrove	Eastern	Trincomalee	0.38	1
84. Norway Islet (island)	Eastern	Trincomalee	-	
85. Pigeon Island (Large & Small)	Eastern	Trincomalee, Kuchaveli	4.72	Uninhabited/ marine national park
86. Chapel Island	Eastern	Trincomalee	0.02	
87. Clappenburg Island	Eastern	Trincom.Town & Gravets	0.05	Koddiyar Bay

Source: Mapcarta, Explore Google Earth. Palk Bay Western Part (Marine Chart: LK_0069_0), and field investigations.

Distribution of islands, west of Jaffna Peninsula



Karaitivu Island	Northern	Jaffna Karainagar	22.95	9576	
<ul style="list-style-type: none"><li data-bbox="81 182 1864 302">• Karaitivu is an island (9°44'03"N 79°52'33"E) off the coast of Jaffna peninsula in northern Sri Lanka.,<li data-bbox="81 405 1864 548">• Tamil words karai a thorny shrub from the rubiaceae family and tivu (island).<li data-bbox="81 651 1864 771">• Karaitivu is connected to Jaffna peninsula by a causeway and there is a ferry service from Kayts on the neighbouring island of Velanaitivu.<li data-bbox="81 873 1232 919">• Karainagar is the main settlement on the island.<li data-bbox="81 1022 1864 1136">• The popular Casuarina Beach is located on the island. Karaitivu has an elevation of 4 meters.<li data-bbox="81 1239 1503 1285">• Tidal creeks, salt marshes and mangrove patches are visible.					

Eluvaitivu	Northern	Jaffna, North of (Kayts)	1.4 sq km	800	
<ul style="list-style-type: none"> <li data-bbox="141 287 1808 408">• Eluvaitivu is an island off the coast of Jaffna peninsula (9°42'03"N 79°48'38) "E in northern Sri Lanka. <li data-bbox="141 505 1808 626">• Tamil meaning including "the island of landmark" which is derived from the Tamil words elu (mast or tower), vai (land) and tivu (island). <li data-bbox="141 723 1808 916">• Eluvaitivu has no causeway connecting it to the mainland or other islands but is served by a ferry service from Kayts on the neighbouring island of Velanaiti. <li data-bbox="141 1013 1808 1206">• Village-level coordination is undertaking for conservation. Interest for Polymotu project, because this island is famous for local and migratory birds. <i>In Sinhala: Eluvadoova.</i> 					



Stūpas at Kantarodai, *Katupotha*, 12-17-2004



Delft (Neduntivu) is a flat island surrounded by shallow waters and beaches of coral chunks and sand.

4.76 km

Image Landsat / Copernicus
Image © 2018 DigitalGlobe
Image NASA

Delft Island

- **Delft is a fascinating island among the northern set of island of Sri Lanka.**
- **As a tourist destination, the Delft Island can be used successfully, because as an island, it has own nature, history and culture.**
- **Even at colonial time, this island connected with main island Sri Lanka and surrounding islands as well as sometimes India by ferry services.**
- **The people, mostly Tamils are living with many difficulties, including drinking water deficit and foodstuff. However, they rich in fishery resources.**
- **Using the land and sea, it is possible to introduce tourism for more income activity for the future.**

Places to Visit in Delft Island or Nedunthivu are:

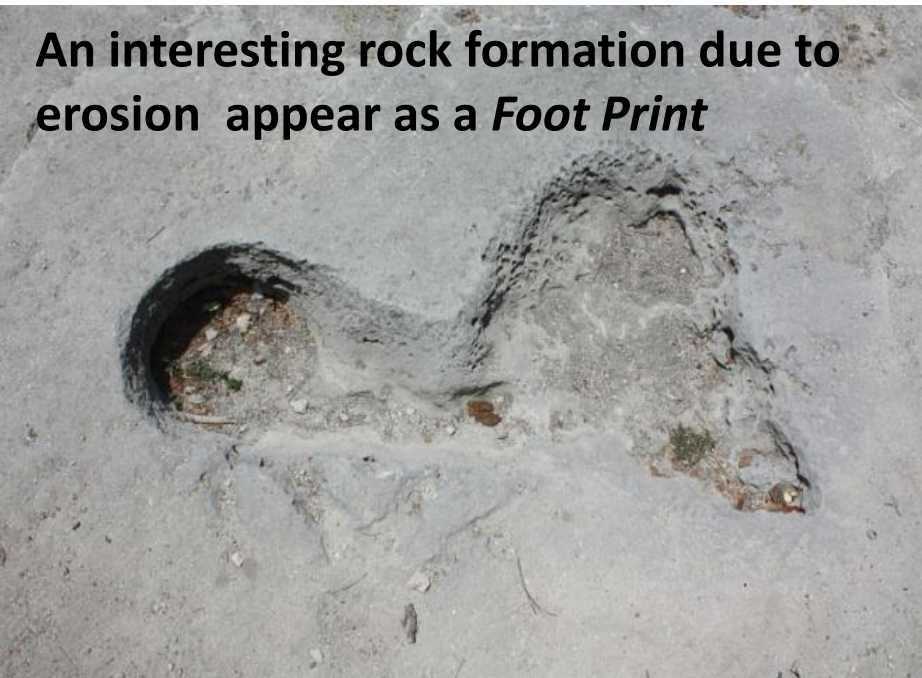
- 1) Aalamavanam (Banian),**
- 2) Growing Stone,**
- 3) Queens Tower, Baobab Tree,**
- 4) Wild Horses,**
- 5) Dutch Fort (Meekaman Fort),**
- 6) Pigeon Hole,**
- 7) Foot Print in Rock,**
- 8) Horses Stable (Dutch Period),**
- 9) Dutch Fort (Vediyarasan Fort),**
- 10) Branch Palmyrah Tree,**
- 11) India Border,**
- 12) Landscape Water Tanks, and**
- 13) Sandy White Beaches, or
More**



**Wild horses and tamed
one at Delft Island**



**An interesting rock formation due to
erosion appear as a *Foot Print***





Stūpas at Delft, Sri Lanka at the Crossroads of History, 2017



Periya
Arichchal

Periya
Arichchalai

Periya Arichchal island in Dutch Bay

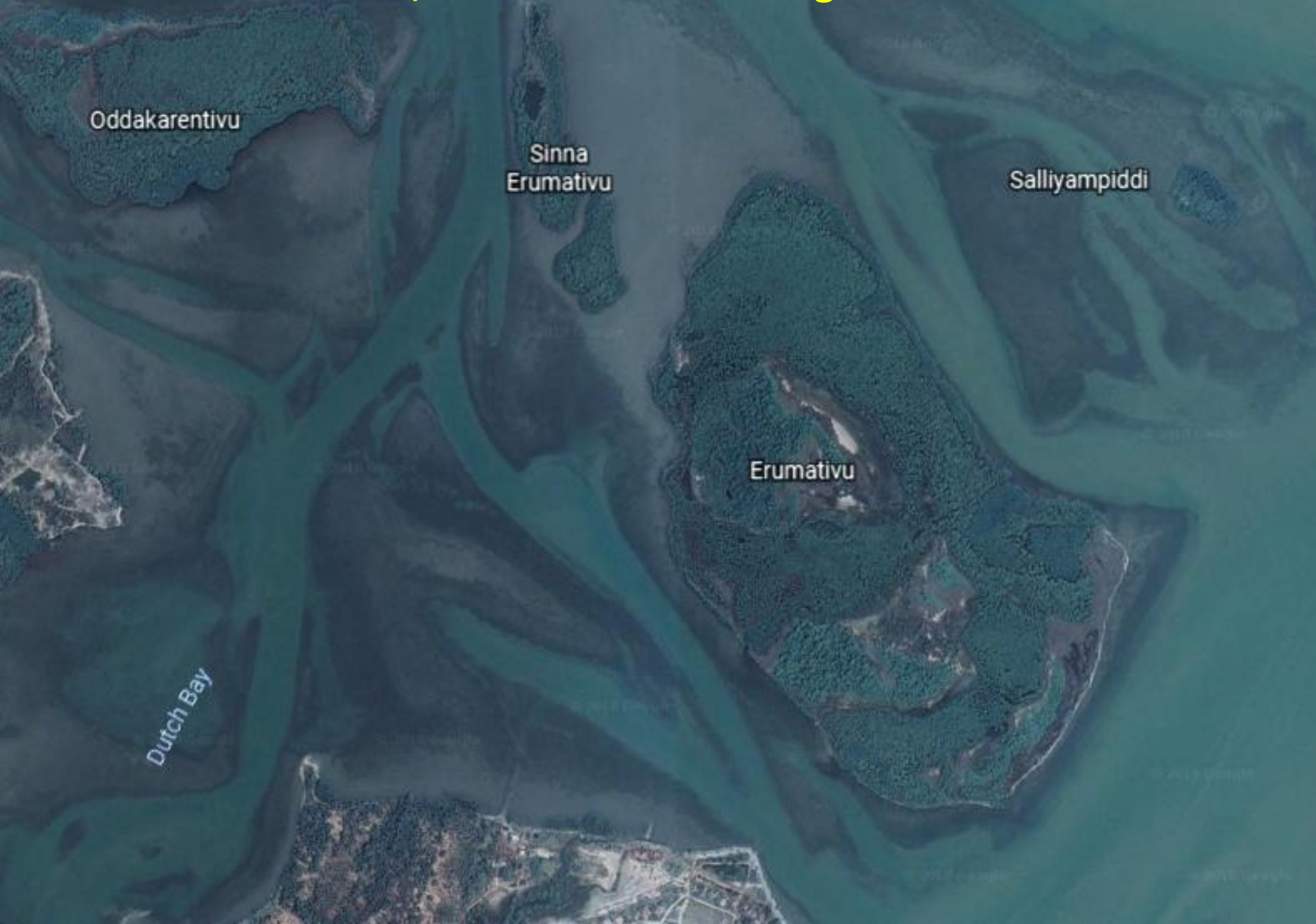


Sinna
Arichchal

Sinna
Arichchalai

Sinna Arichchal island in Dutch Bay

Distribution of islands, North of Puttalam Lagoon



Oddakarentivu

Sinna
Erumativu

Sallyampiddi

Erumativu

Dutch Bay

Poly *motu* Concept Poly = multi, motu = island

- **The Polymotu conservation concept fits into a multifunctional land management policy.**
- **Many different locations can be used for conservation of genetic resources and even seed production as far as they meet the specific criteria required for biological and reproductive isolation**
- **These dedicated sites can be small islands owned by communities or private individuals, public gardens, university campuses, golf courses, the backyards of resorts or research centers, or the bottom of small valleys.**

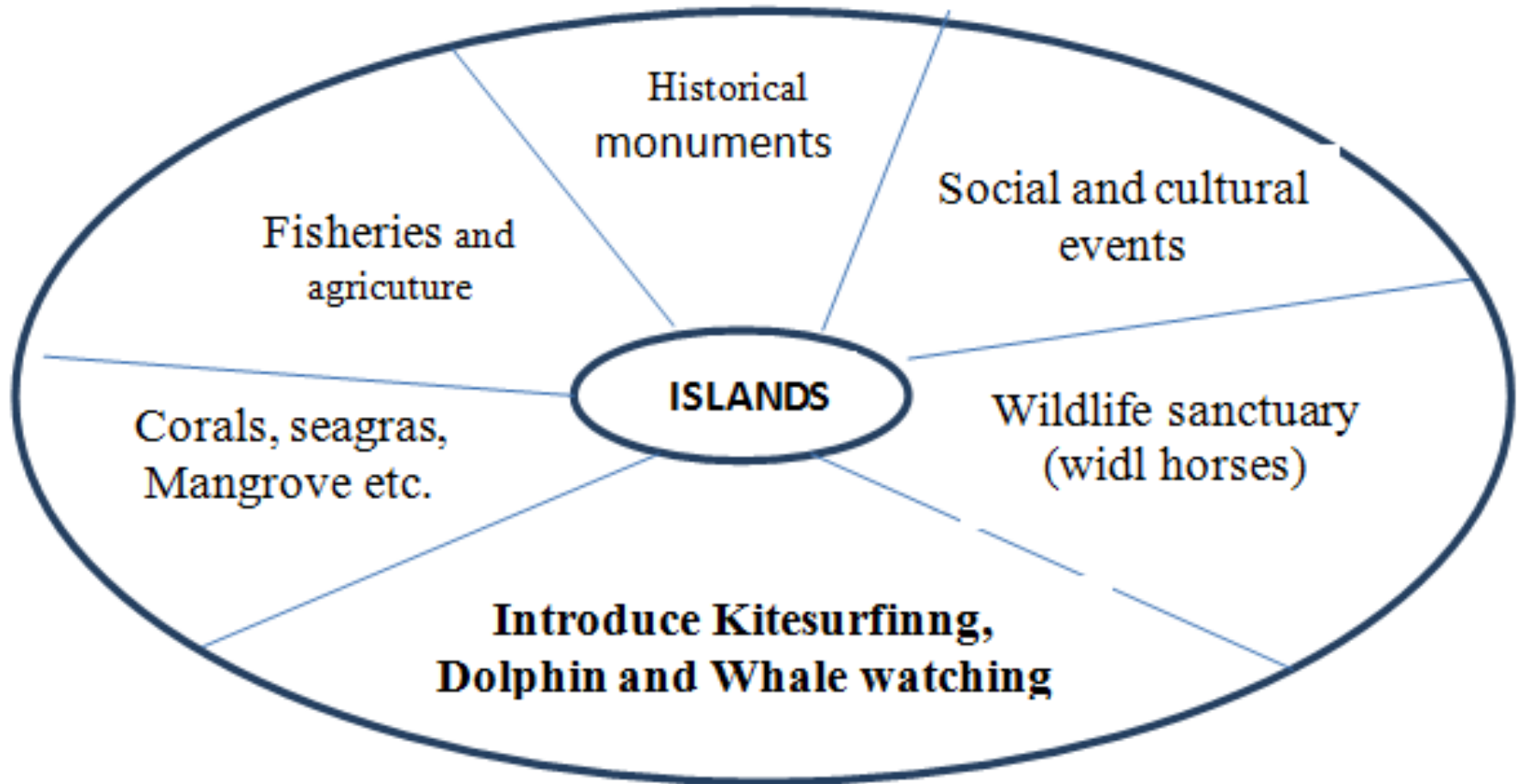
REFERENCE: Polymotu: A new concept of island-based germplasm bank based on an old Polynesian practice, Roland BOURDEIX1 et al. <https://www.researchgate.net/publication/266357061>

Many islands of Sri Lanka, especially from **Palk Bay, Mannar Bay, Dutch Bay and Puttalam lagoon** are made up of sand, coral and tidal flats (Mud flats).

These islands can develop using *Polymotu Concept* (Bourdeix 2011).

The *Polymotu* concept (poly=many, motu=island) is to use the geographical isolation of dedicated sites for conservation and reproduction of individual varieties:

- plants,
- Trees, and
- animals.



Main and sub destinations and other activities can be applied for ecotourism purpose based on Delft and other surrounding islands, Sri Lanka.

Even an entire village may well serve as a place for conservation of genetic resources and seed production of coconut, if people agree to cultivate only a well-defined set of cultivations.

This kind of multifunctional land management strengthens the links between people, landscape and biodiversity.

It gives a special cachet to the sites, generates incomes and promotes ecotourism activities

Crow Island

Beruwala Light House

Masjid ul Abrar مسجد





Galle Dutch Fort

Galle Lighthouse

The Flagrock Bastion

Crow Island

Image 9


Nilwella

Nilwella Island

Nilwella Island is connected to the mainland by tombolo beach (See table 1 for details). Source: Explore Goole Earth)

It is completely covered by coral rubbles. In the centre of the island, it is possible to see lush scrublands.



An aerial photograph of Pigeon Island National Park. The island is roughly heart-shaped and features a large, vibrant green forested area in its center. Surrounding the forest are sandy beaches and rocky shorelines. The water around the island is a deep, dark blue. The text "Pigeon Island National Park" is overlaid in the center of the image.

Pigeon Island
National Park

Sea bathing pockets are well famous among tourists at Pigen Islands (northeast coast). The sea water pockets are very attractive due to the location of small granitic headlands.



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Sea bathing pockets are well famous among tourists at Pigen Islands (northeast coast). The sea water pockets are very attractive due to the location of small granitic headlands.



Many islands of island chains are combinations of different kinds of material, granitic bedrock or/and coral or shell deposits.

The island nation of Seychelles is made of both continental granite islands and coral islands.

Concerning to Sri Lanka some islands, e.g. Pigeon Island in the eastern coast, Nilwella Island in southern coast, and

Babaryan Island in southwest coast can identify as bedrock and coral related islands.

Many islands of Sri Lanka:

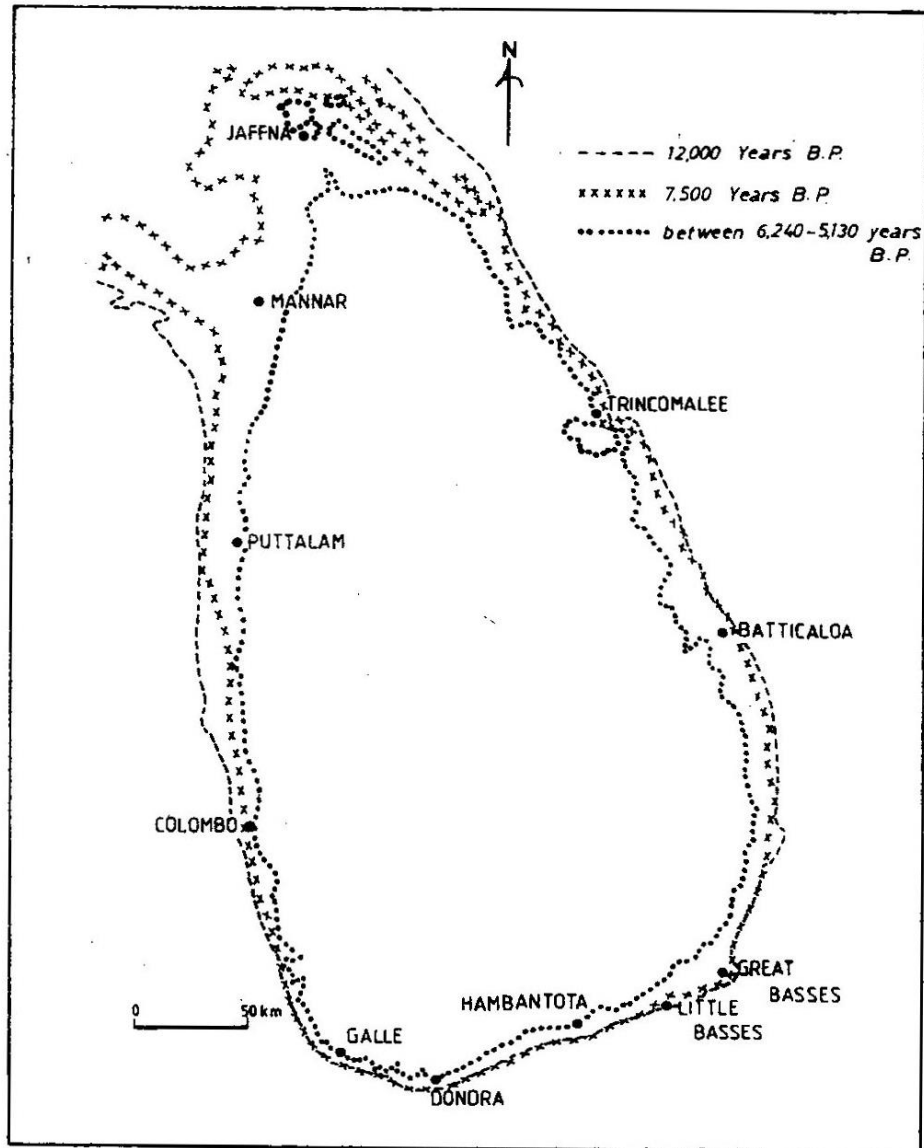
- **in the Gulf of Mannar**
- **Palk bay**
- **Portugal bay, Dutch Bay and Puttalam lagoon**

These islands can develop using the *Poly motu* concept (poly=many, *motu*=island), which is to use the geographical isolation of dedicated sites for conservation and reproduction of individual varieties of plants, trees, animals and even limited tourist resorts .

Weathered bedrock islands also can develop as bird sanctuaries, religious and scenic attractive places for ecotourism, and also geotourism, cultural tourism.

Problems/threats in the Small Islands Environment

- **By 2,100, the sea level will rise 1.0m 1.2m or more from the present level, erosion and submergence of the islands can be occurred.**
- **Rising sea levels that submerge entire islands were supposed to be a distant possibility of an apocalyptic future.**
- **Without a well developed and organized sustainable development plan with community involvement**
 - Solid waste disposal, toxic chemicals, soil erosion and loss, damage the corals/coral reefs, damage or destruction of productive coastal resources and fisheries, etc will be appeared as threats.**



Possible coastlines of Sri Lanka (i) 12,000 yr B.P; (ii) around 7,500 yr B.P. and (iii) between 6,250 and 5,130 yr B.P. By 2,100 the sea level will rise 1.0m 1.2m or more from the present level (Katupotha, 1994).

Conclusion

Introducing suitable concepts with new techniques and a well developed and organized sustainable development plan with community involvement is necessary to achieve desired results from our islands.

Without such an idea in mind, do not destroy our nature – *Katupotha*.

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1. Ecotourism Development – A Manual for Conservation Planners and Managers
Volume 1: An Introduction to Ecotourism Planning, Second Edition: *Editor, Alex Singer* .
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<https://www.google.lk/search?q=Places+to+Visit+in+Delft+Island+-+>

**Save and protect
our islands.**

Thank you.