



Crisis?



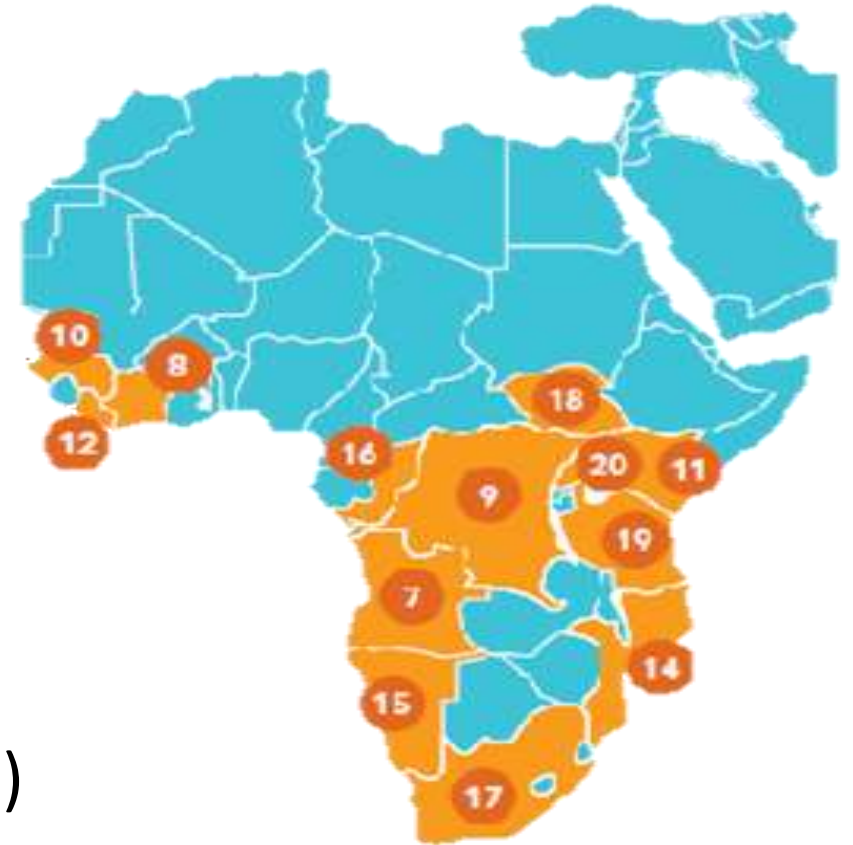
Opportunity?

Managing Waste for Conservation

A case study from Mozambique

African Waste Network
Port Elizabeth, July 2017

- Long established international conservation organization (est 1903)
- Mission: conserve endangered species and habitats worldwide; solutions based on sound science; working with companies committed to delivering high environmental and BES management performance
- Over 140 projects in more than 40 countries worldwide; direct contribution to conservation of over 13.5 M ha of land and sea
- Over 15 years, experience with partnering with the private sector (e.g. O&G, mining, agro-business, ethical investors, financial institutions)



FFI: 3 Core Objectives

- To secure the future of key threatened habitats and species.
- To address the root causes of biodiversity loss.
- To help others deliver conservation gains.



Infant Mountain Gorilla Credit: Giles Clark

FFI IS ACTIVELY WORKING THROUGH JOINT INITIATIVES AND BUSINESS PARTNERSHIPS IN 39 COUNTRIES ACROSS THE WORLD.



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AMERICAS

1. Belize
2. Brazil
3. Chile
4. Ecuador
5. Peru
6. USA

AFRICA

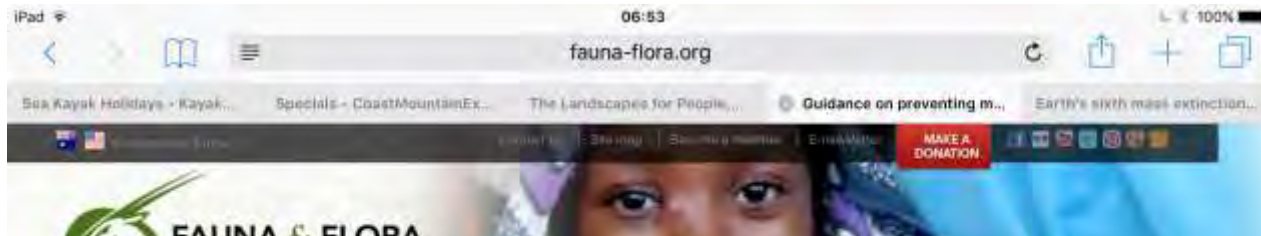
7. Angola
8. Côte d'Ivoire
9. DRC
10. Guinea
11. Kenya
12. Liberia
13. Madagascar
14. Mozambique
15. Namibia
16. Republic of Congo
17. South Africa
18. South Sudan
19. Tanzania
20. Uganda

EURASIA

21. Finland
22. Georgia
23. Iraq
24. Italy
25. Kazakhstan
26. Kyrgyzstan
27. Norway
28. Pakistan
29. Romania
30. Spain
31. Turkmenistan
32. UK
33. Uzbekistan

ASIA-PACIFIC

34. Australia
35. Cambodia
36. Indonesia
37. Mongolia
38. Sri Lanka
39. The Philippines



Guidance on preventing microplastic pollution from consumer and industrial products



Written by: **Dilyana Mihaylova**

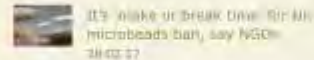
Co-organised by Dilyana Mihaylova

Fauna & Flora International (FFI) has been working on tackling marine microplastic pollution sources since 2012, taking an evidence-based and research-driven approach. Microplastics are plastic pieces up to 5 mm in size which are a problem in the ocean because they can harm the wide range of marine animals that mistake them for food.

The first source of microplastic pollution that FFI focused on was the use of microplastic ingredients in products such as cosmetics and toiletries that go down the drain. These microplastic ingredients often referred to as plastic microbeads, are

MAKE A DONATION

Related news



It's make or break time for UK microbeads ban, say NGO
28.02.17

Conservation challenges

- Climate Change Adaptation Planning
- Conservation challenge: the overfished service of nature
- Conservation challenge: Human rights
- Conservation challenge: a changing climate



Fauna & Flora International joins call on UK government to ban plastic microbeads

Posted on: 28.02.16 (Last updated: 19 February 2016)

Legislation to ban plastic microbeads will 'level the playing field' and ensure that brands meet their commitments, say experts at Fauna & Flora International.

Share this story



MAKE A DONATION

Recent news



Don't miss out: new opportunity to help name a species
06.07.17



Liberia takes a major step forward in protecting its elephants
04.05.17



New marine protected area designated in Costa Rica
22.06.17

Related news



**Palma District,
Cabo Delgado, Mozambique**

Ecosystems and ecosystem services



Structure

Composition

Process

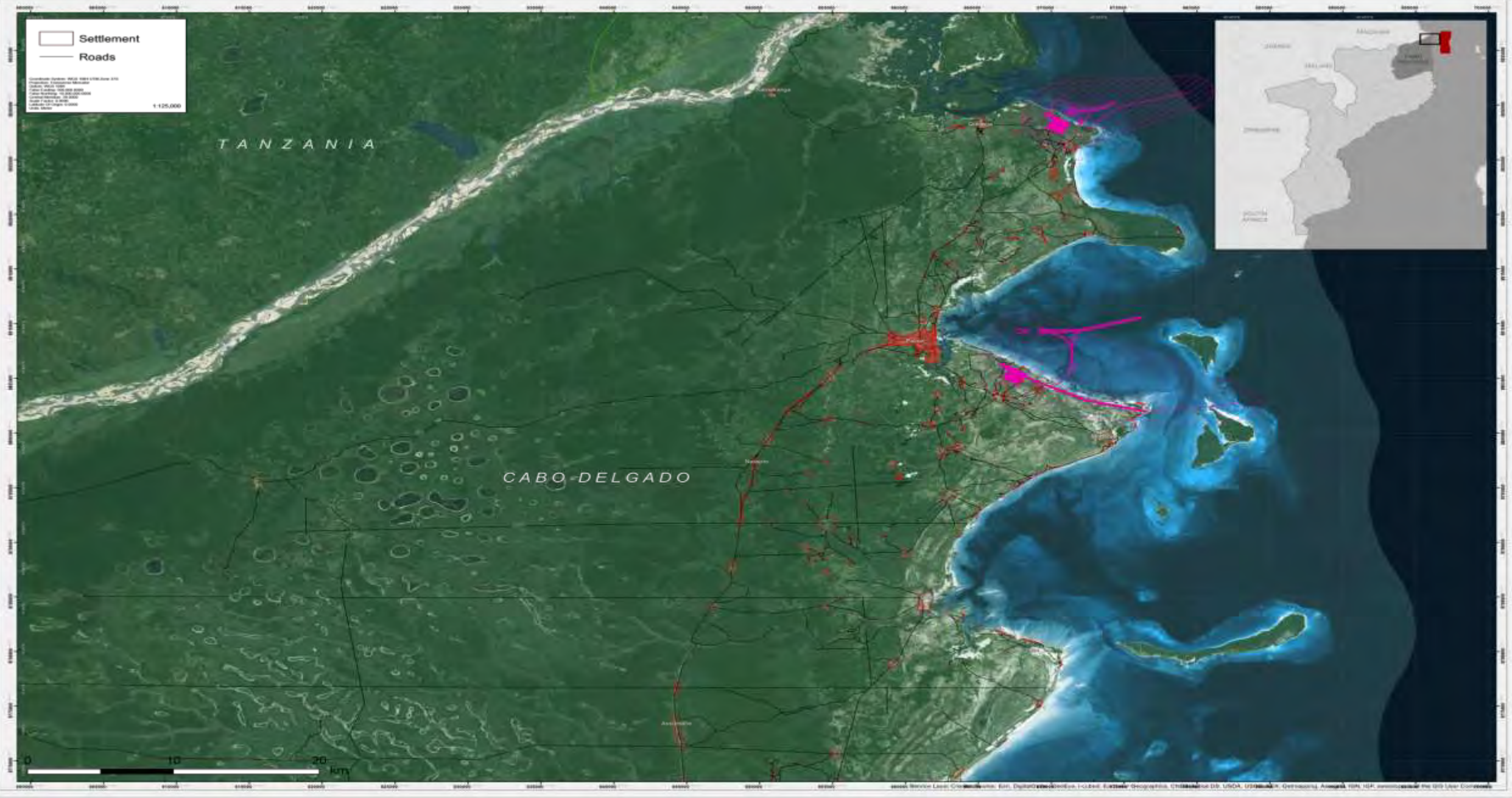


An aerial photograph of a tropical coastline. The water is a vibrant turquoise color, transitioning to a deeper blue further out. A narrow strip of white sand beach runs along the edge of a lush green island. The island is densely covered with palm trees and other tropical vegetation. The sky is a pale blue with some light clouds. The overall scene is serene and beautiful.

Rovuma 4 Gas Field Development

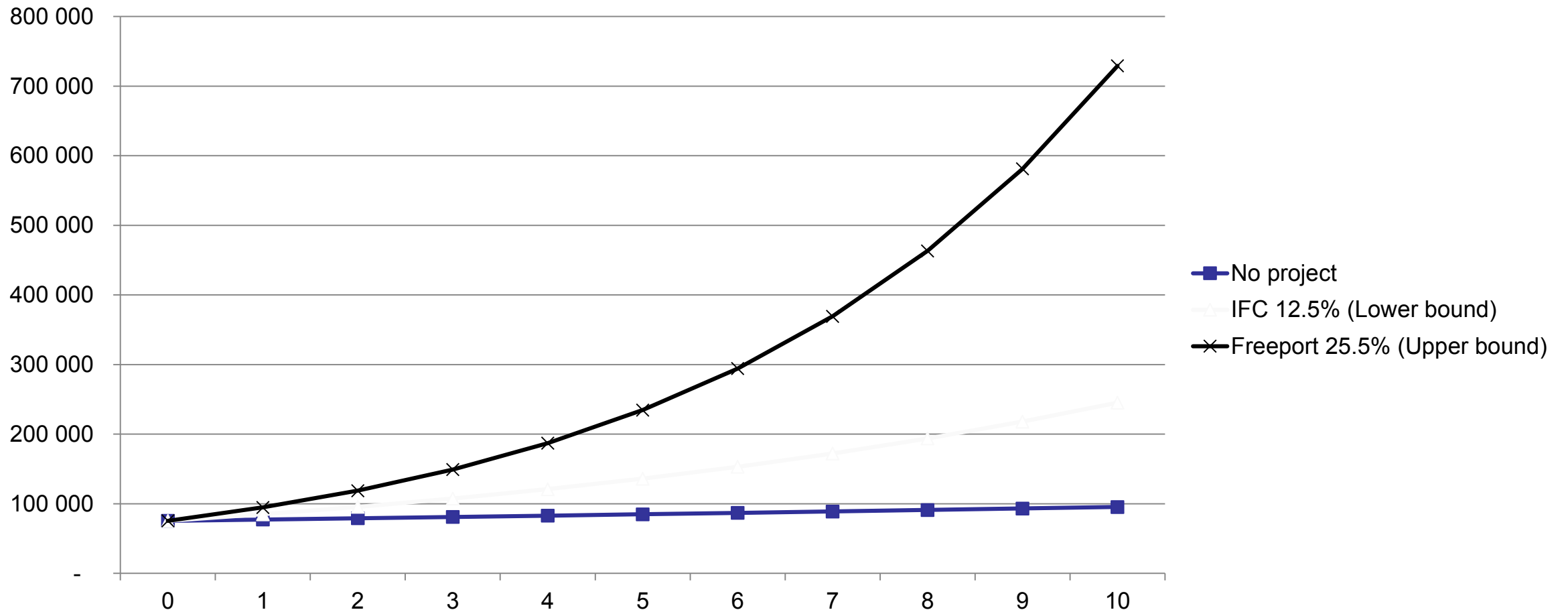
Palma Bay, Mozambique

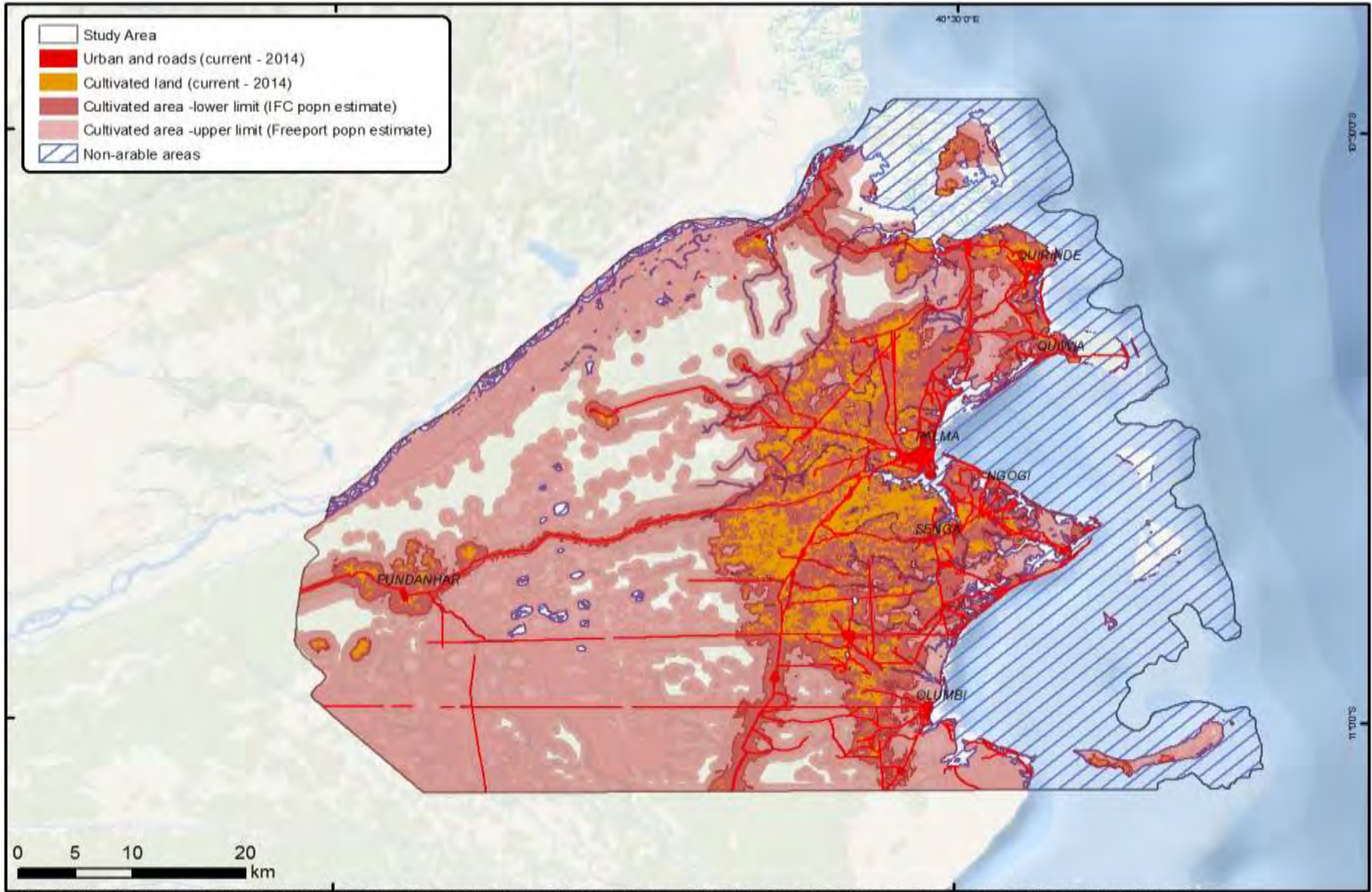






In-migration





Satellite imagery from GEBCO, GE Bnd, extracted from GEBCO 2014. The GEBCO Digital Atlas published by the British Geographical Data Centre on behalf of IOC and IOC 2012. Land boundaries shown from Global administrative areas (boundaries) Hyman et al. University of Berkeley, Museum of Vertebrate Zoology, International Risk Research Institute (IRRI) and University of California, Davis. Source Layer Credits: Boulder, CO: HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GEBCO, IGN, KECA, IL, IGN, GEBCO, Esri, Swisstopo, Mapbox, © OpenStreetMap contributors, and the GIS User Community

Sustainable development



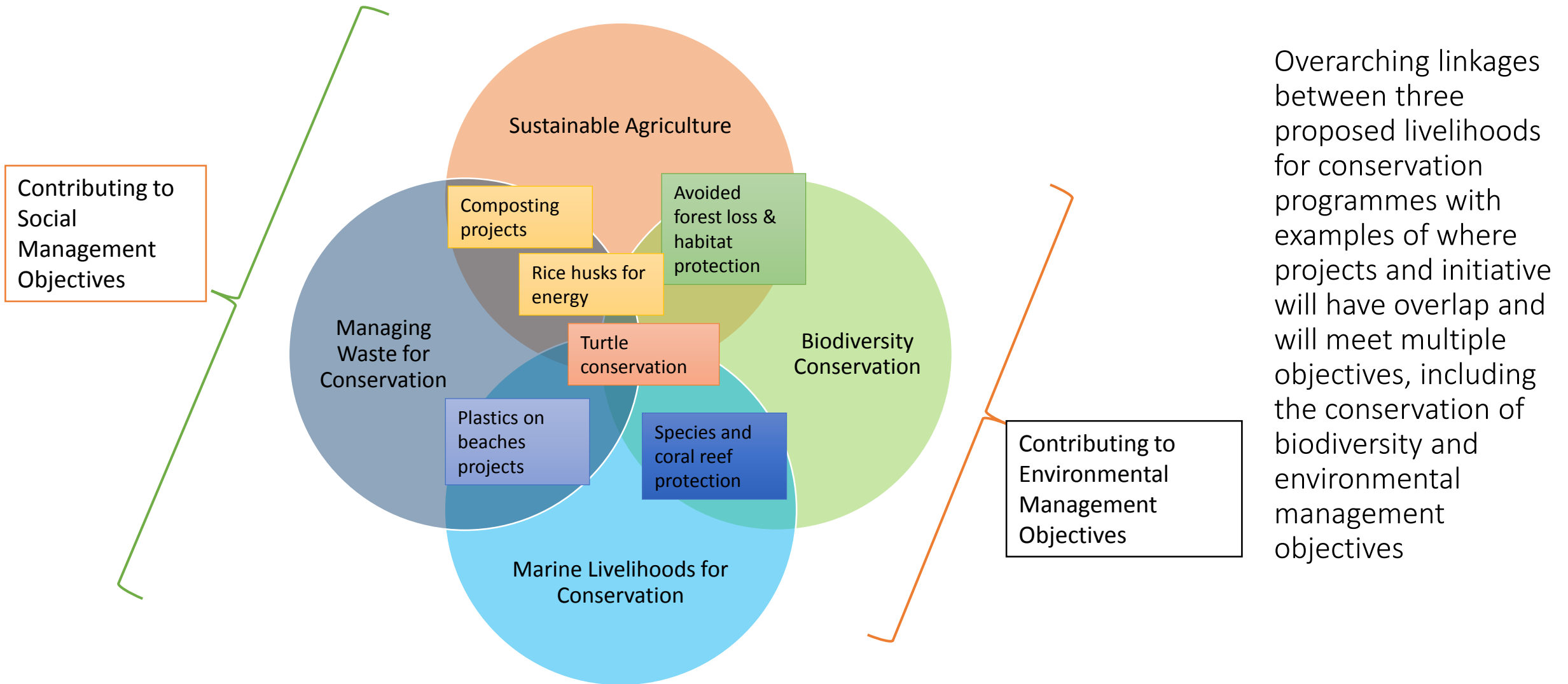
The projects FFI has developed aim to create or enhance livelihoods with positive outcomes for biodiversity and ecosystem services. These projects require stakeholder involvement in their final design phase and in the development of partnerships and collaborations for implementation.

The Projects

1. Waste Management for Livelihoods and Conservation
 2. Sustainable Agriculture
 3. Community-based management of Marine Resources
- Sustainable forest management
 - Landscape-level assessment



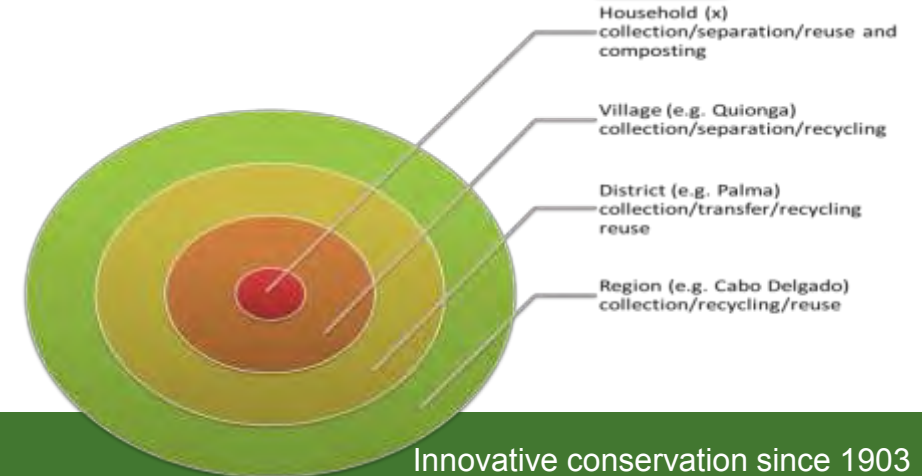
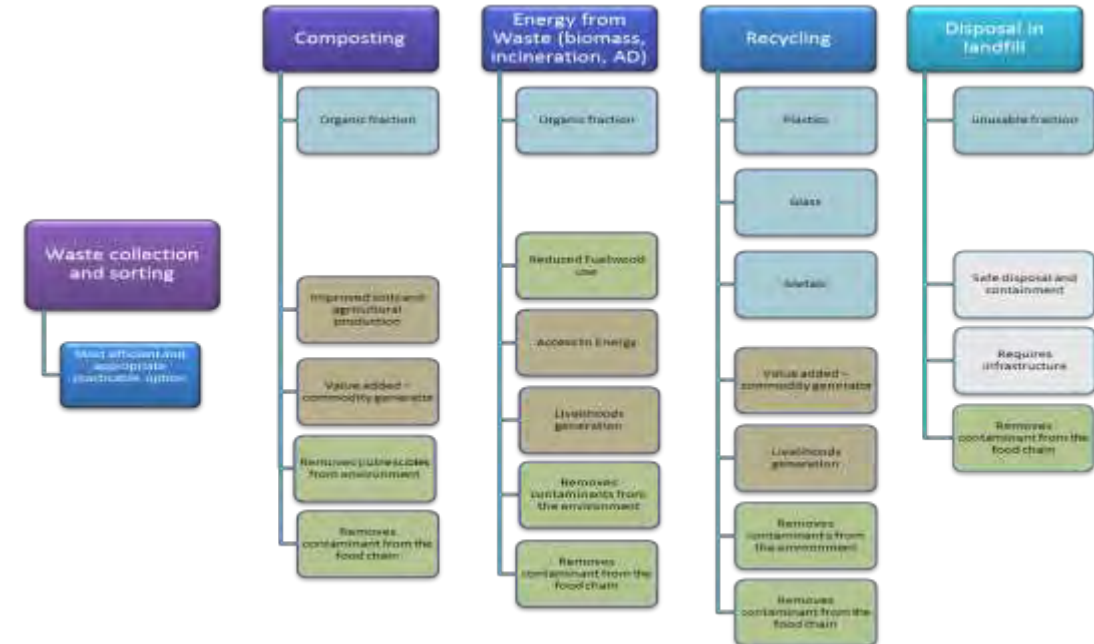
Linkages between the Projects



In-migration

- Over-harvesting of protein
- Expansion of agriculture – dryland and wetland
- Over-exploitation of construction materials and wood fuel
- High extraction of ground water, leading to possible salination
- Unplanned landuse
- Unmanaged waste and energy production

Managing Waste for Conservation



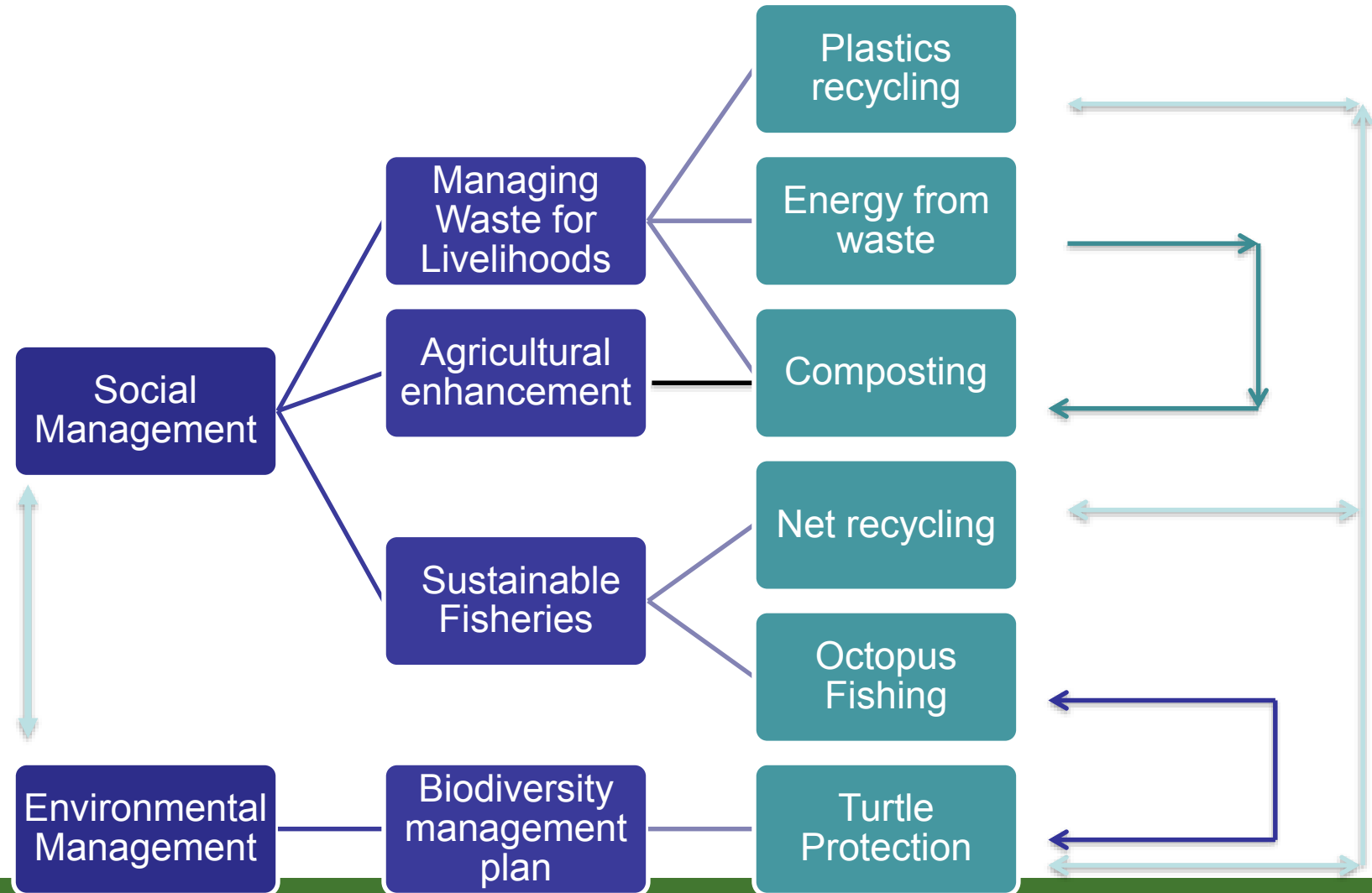




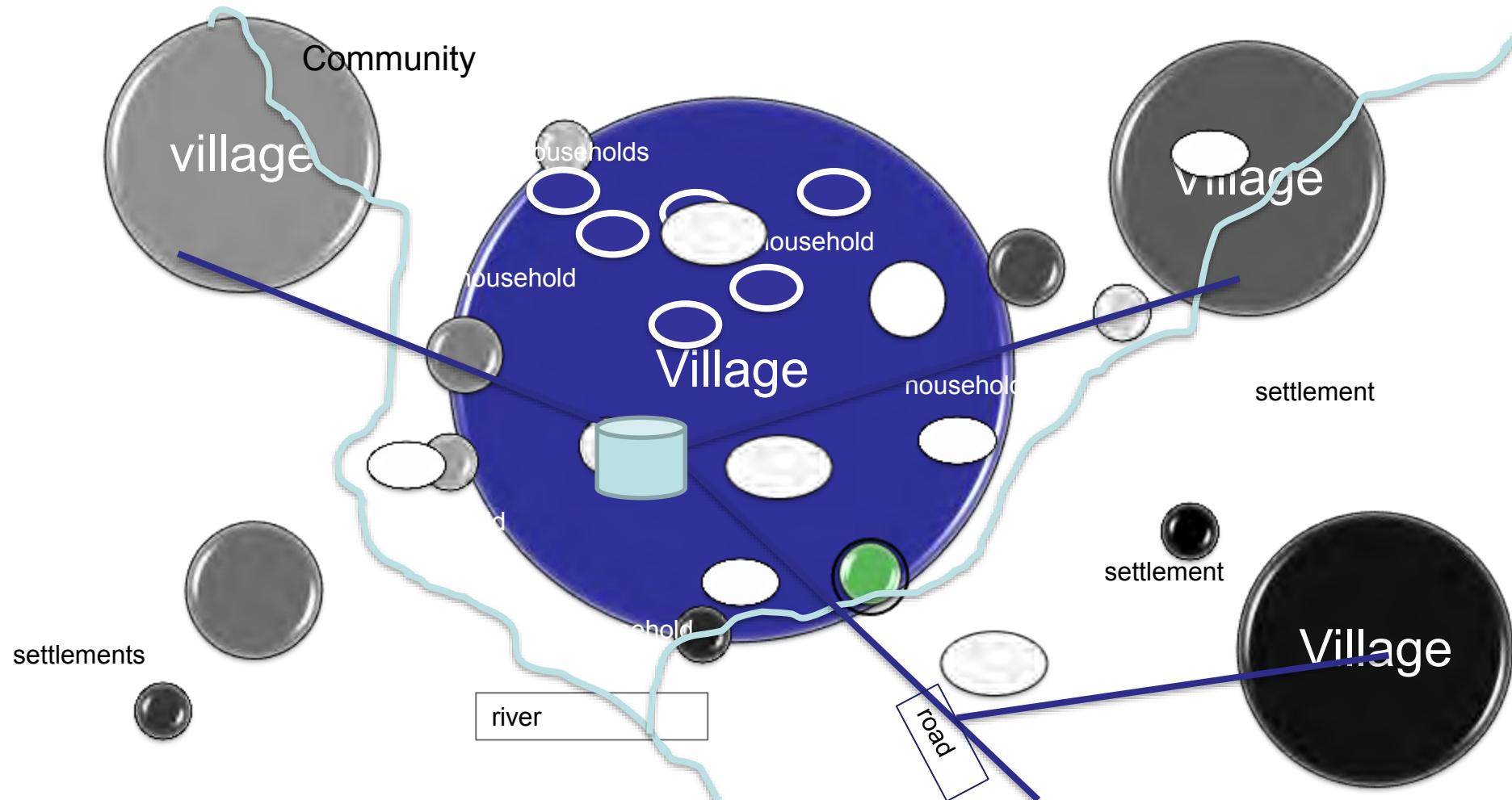
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INTERNATIONAL



Overarching linkages between three proposed livelihoods for conservation programmes with examples of where projects and initiative will have overlap and will meet multiple objectives, including the conservation of biodiversity and environmental management objectives



The projects will be strategically distributed across the area of influence of the Rovuma 4 Project to maximise the benefits from e.g. avoiding ingress of wastes to streams, rivers, fresh water resources and the Palma Bay and the development of secondary or related projects associated with products such as compost and energy production, agricultural enhancement etc.. The careful location of such projects between the rapidly developing urban areas of Palma District and areas of high biodiversity value will help to develop sustainable land management areas that provide buffer zones that improve the protection of key habitats and biodiversity.

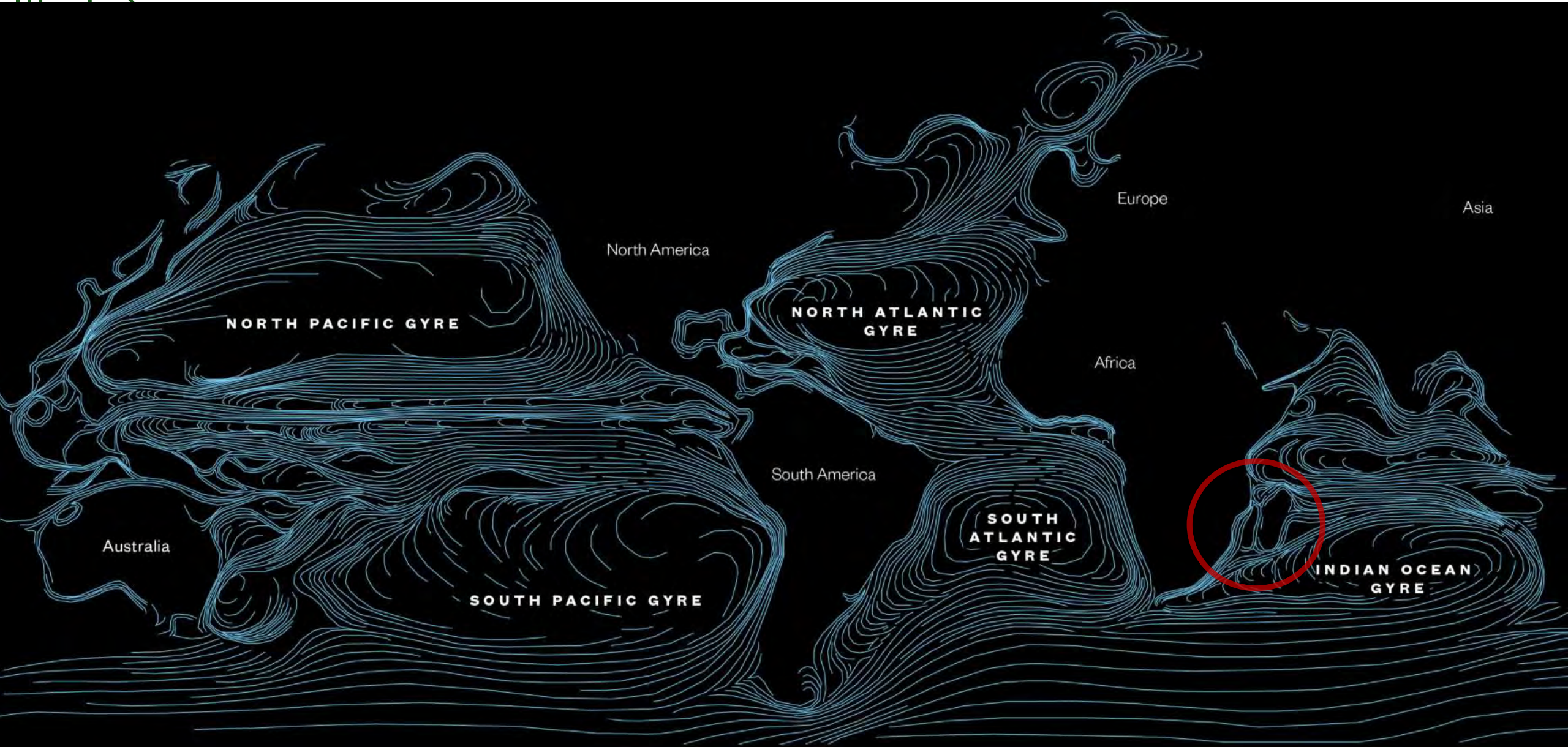


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DATA AND RESEARCH –

A CASE STUDY FROM MOZAMBIQUE PART II





NORTH PACIFIC GYRE

NORTH ATLANTIC GYRE

SOUTH ATLANTIC GYRE

INDIAN OCEAN GYRE

North America

South America

Europe

Asia

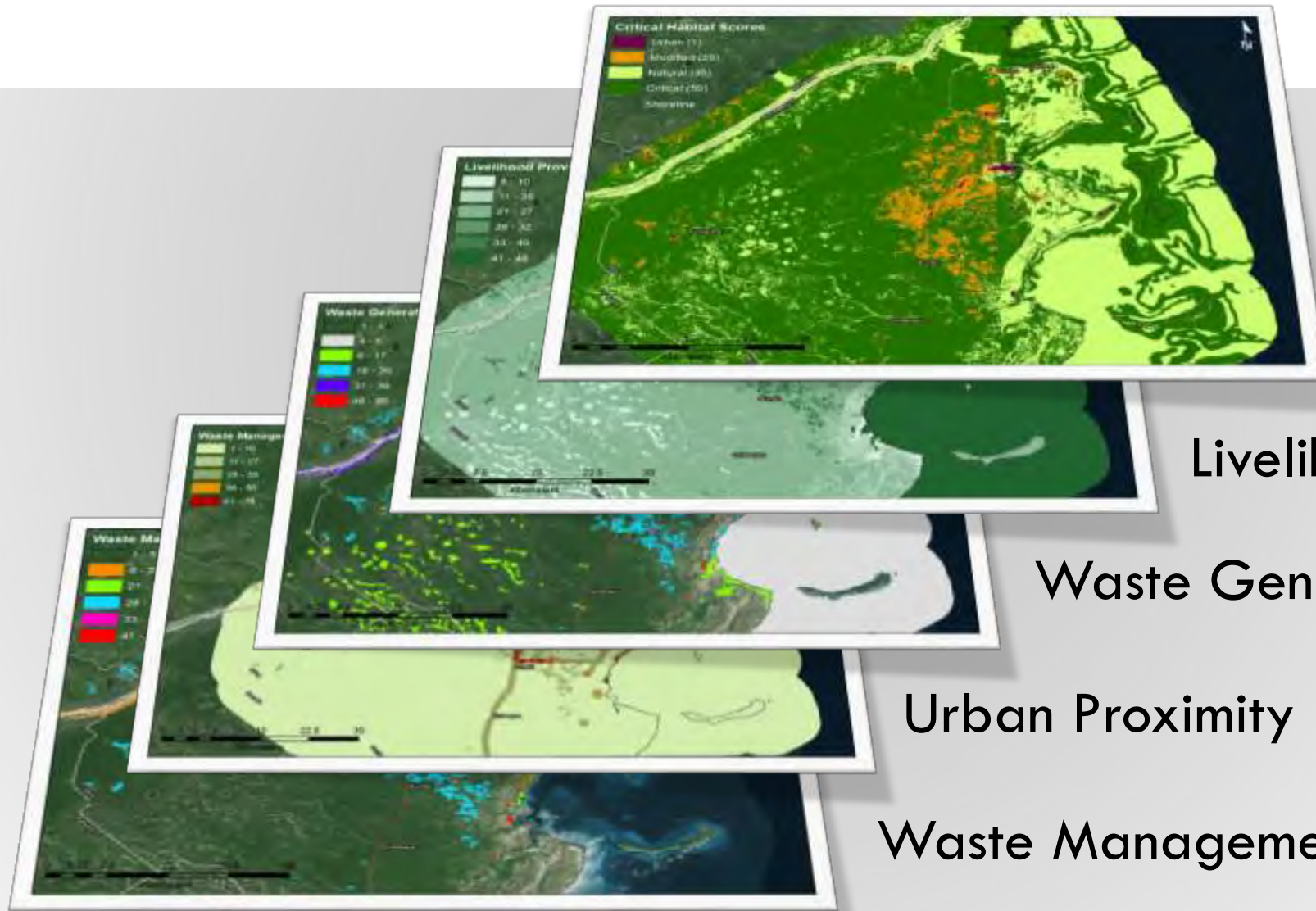
Africa

Australia



Five stages of landscape level assessment:

- Critical Habitat
 - Waste Generation
 - Waste Management
 - Livelihood Generation
 - Urban Proximity
- 



Critical Habitat

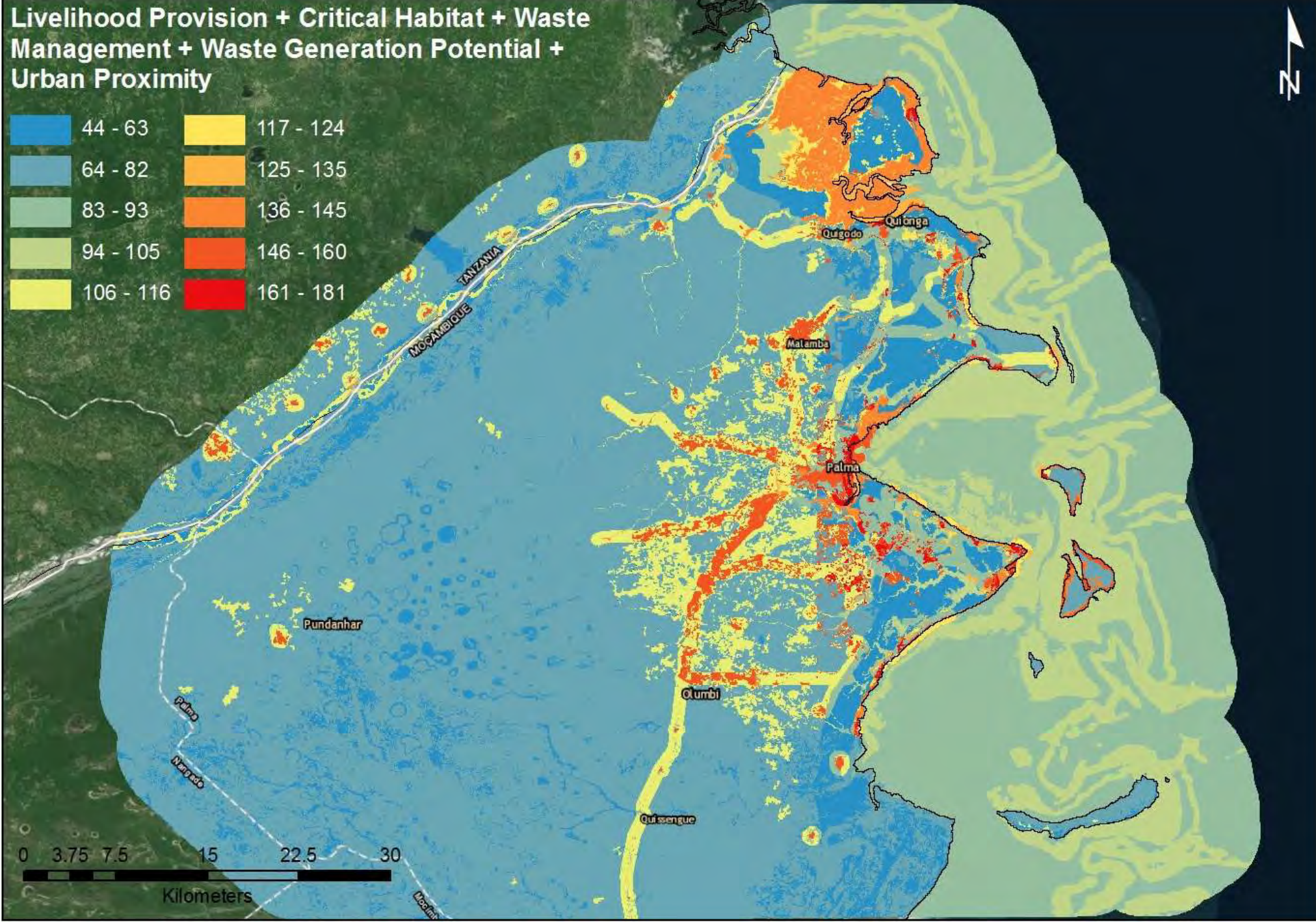
Livelihood Generation

Waste Generation Potential

Urban Proximity

Waste Management Potential

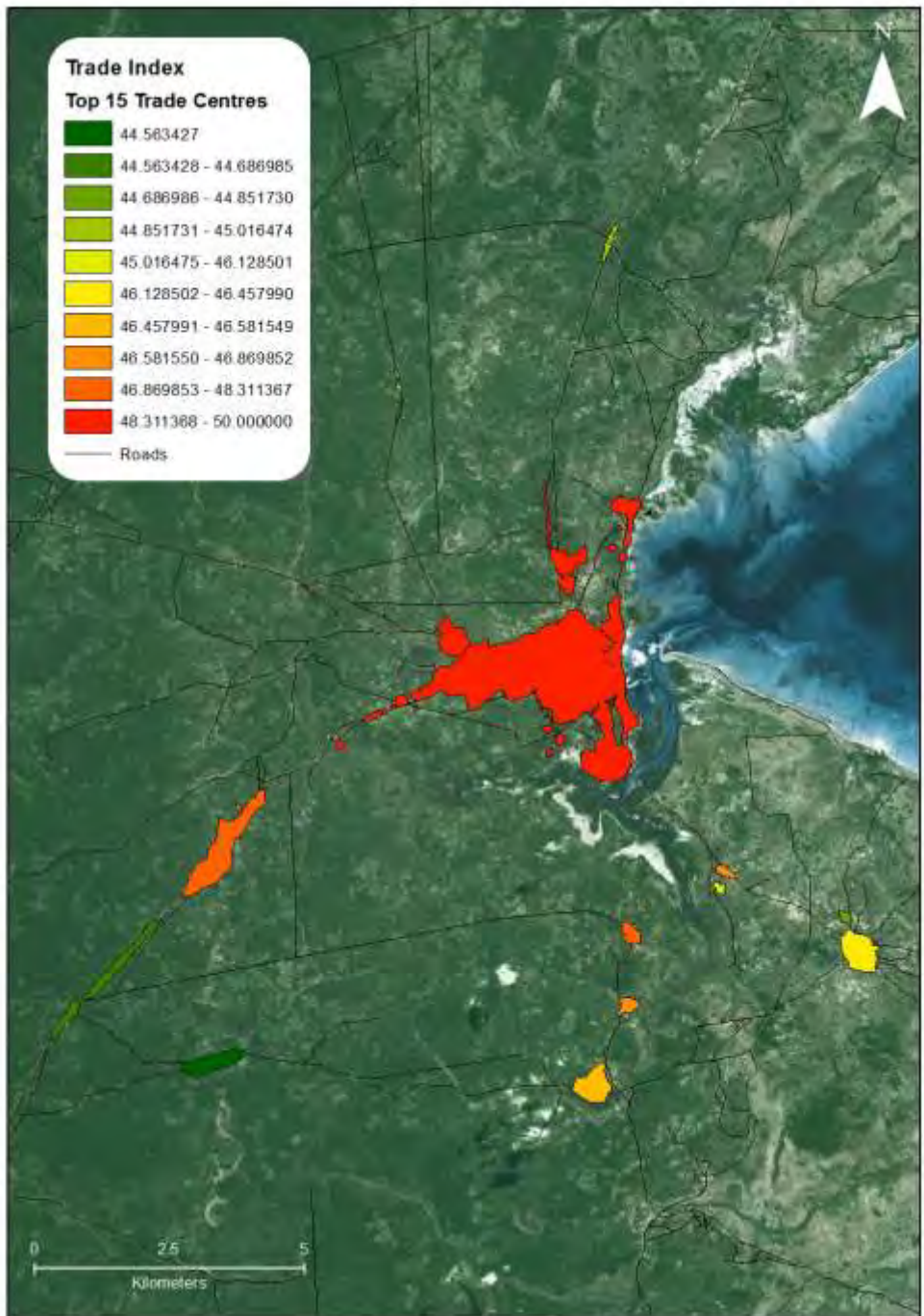
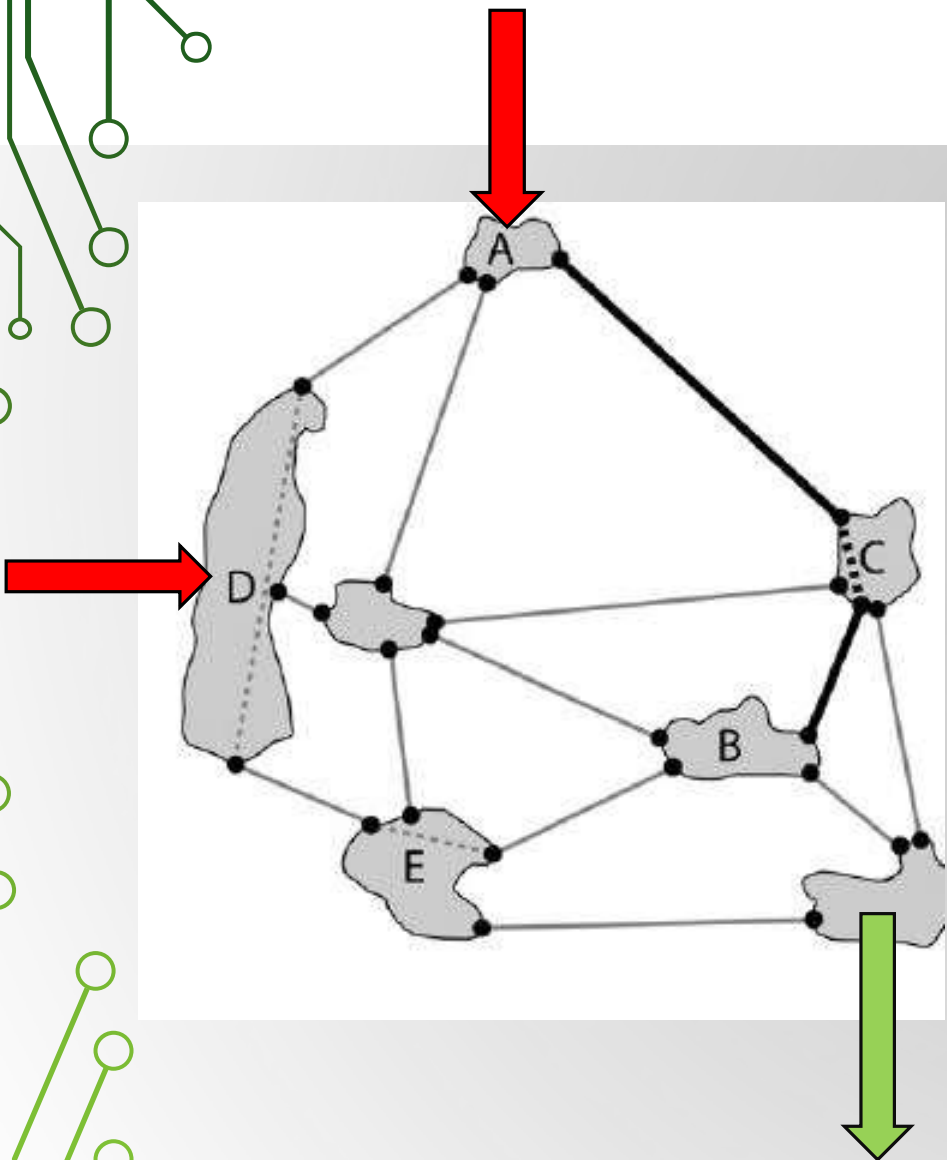
Livelihood Provision + Critical Habitat + Waste Management + Waste Generation Potential + Urban Proximity



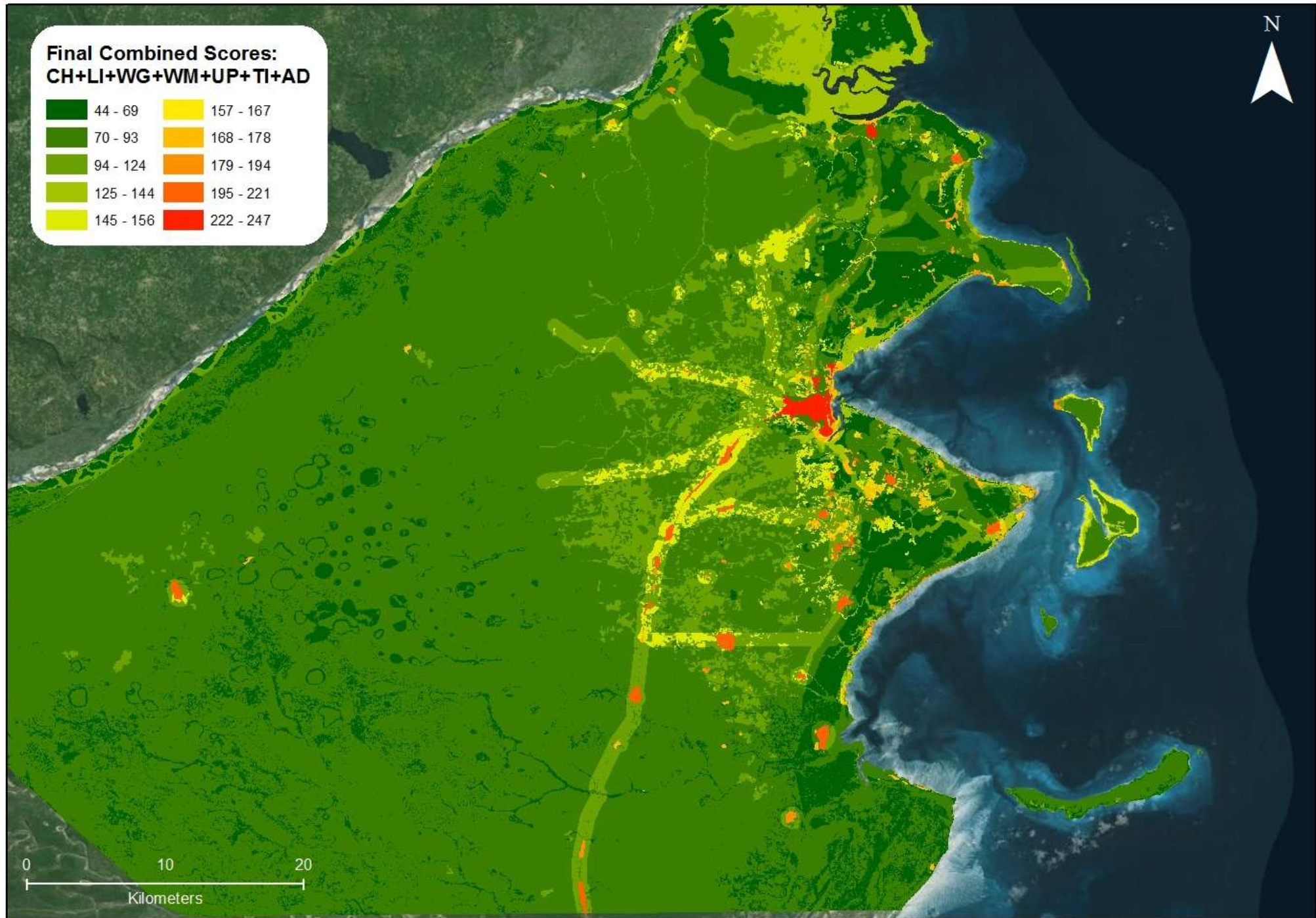
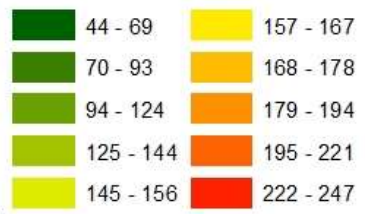


Accuracy Assessment:

- Locations validated against freely available data averaged an 82% success rate
- Locations validated against high resolution data averaged a 90% success rate

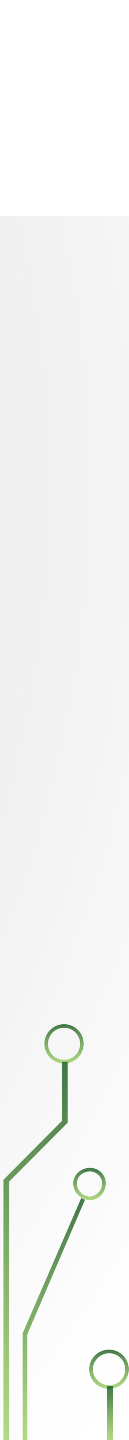


**Final Combined Scores:
CH+LI+WG+WM+UP+TI+AD**





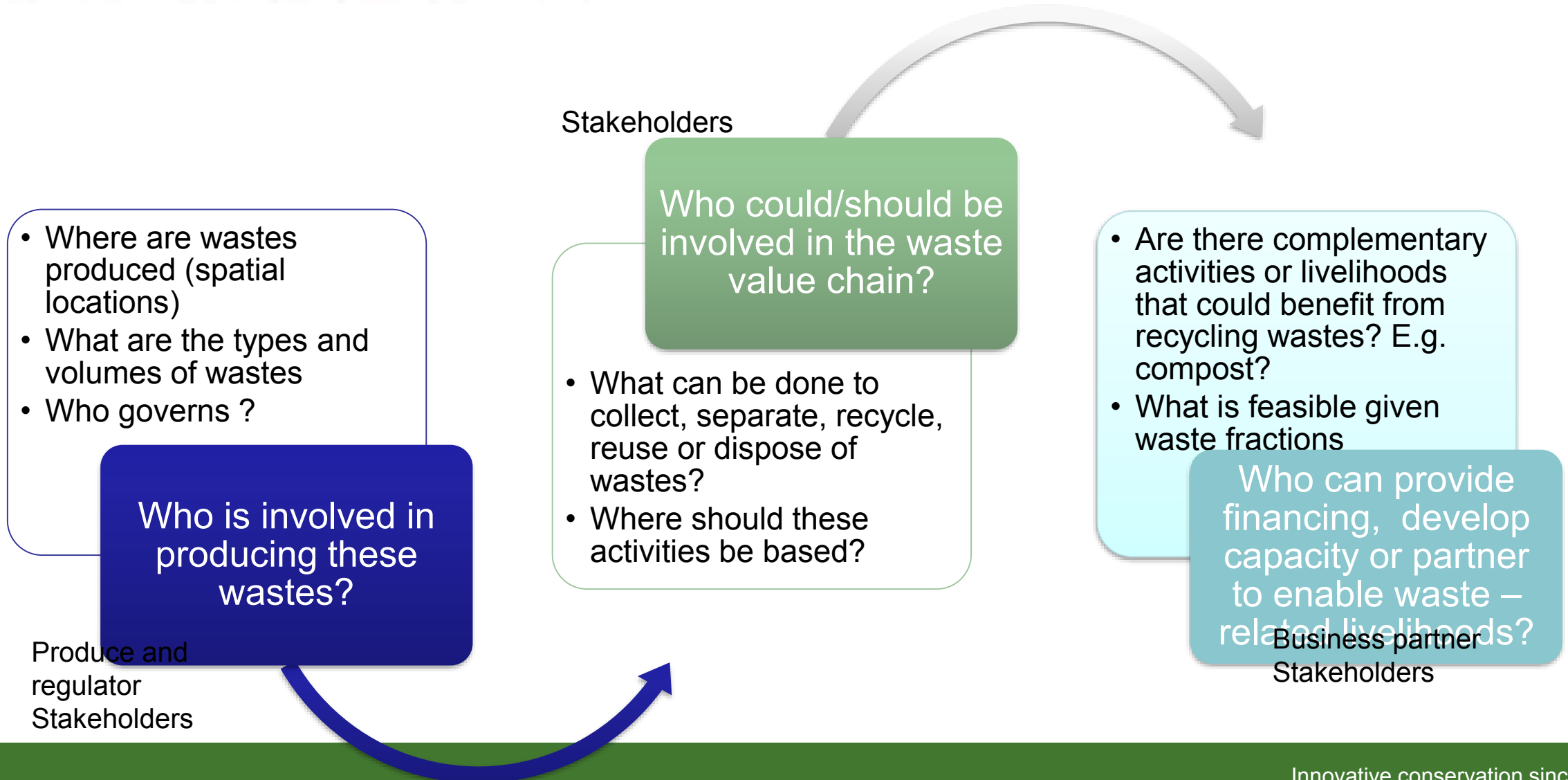
NEXT STEPS:

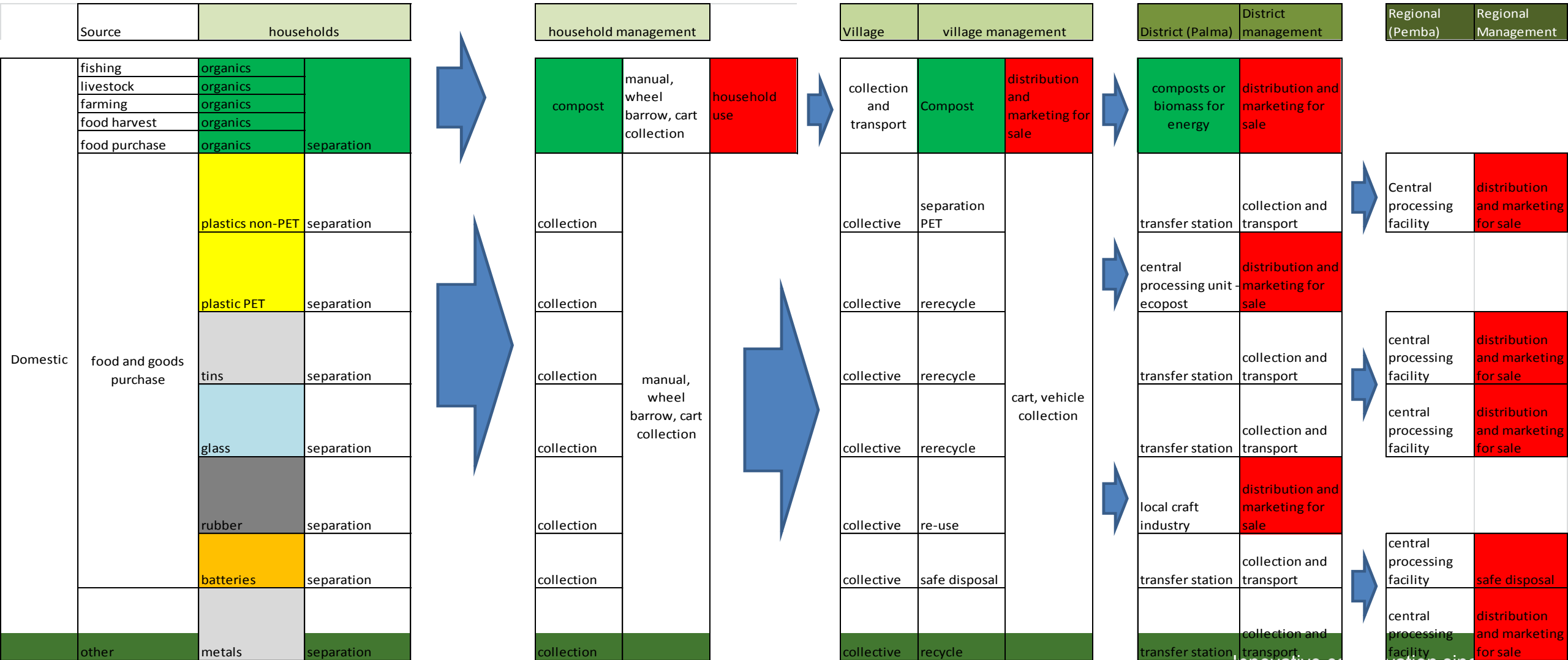
- Repeal analysis back to original five variables
 - Factor in waste conduits through a network based approach
 - With an aim to highlighting watershed sub-basins which are major contributors to marine macro-plastics
- 



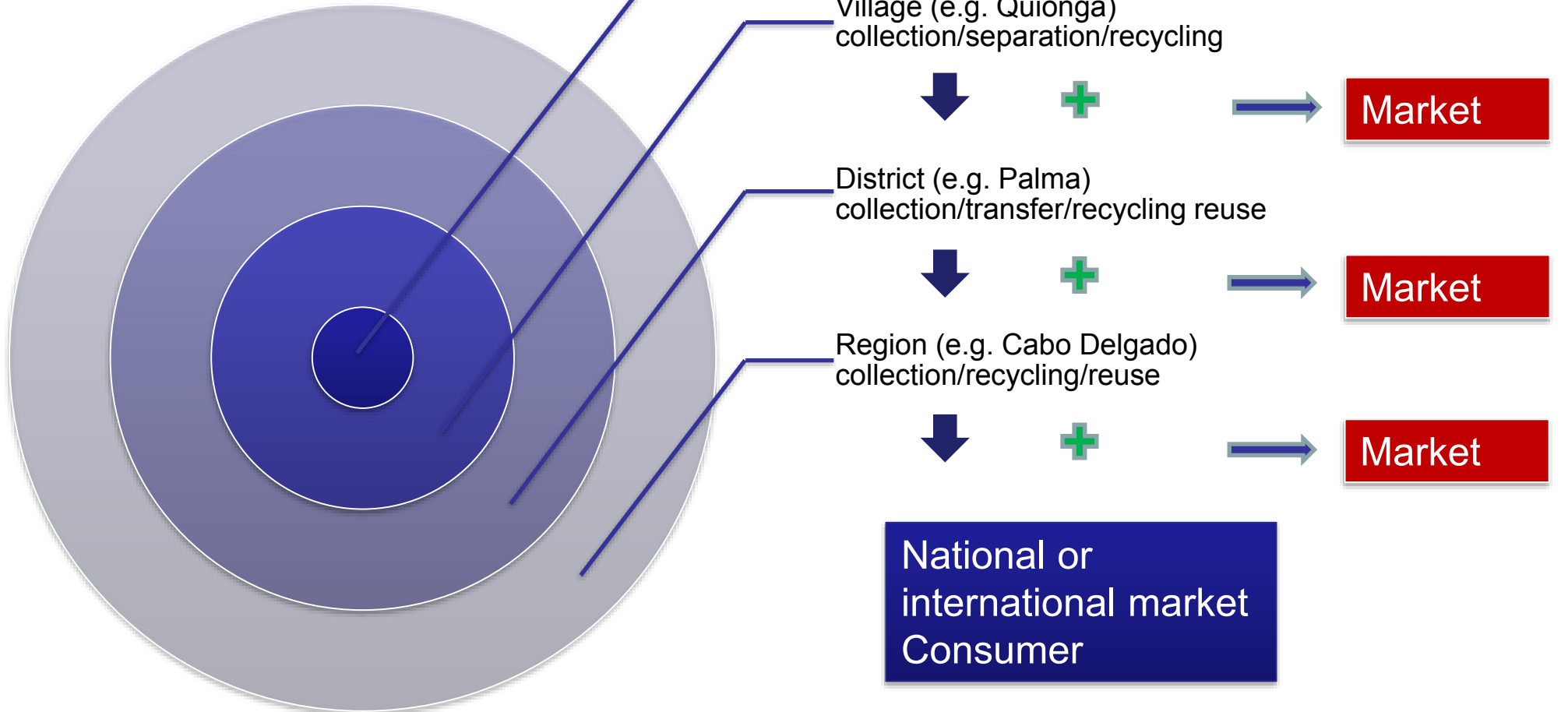
THANK YOU

Mapping stakeholders



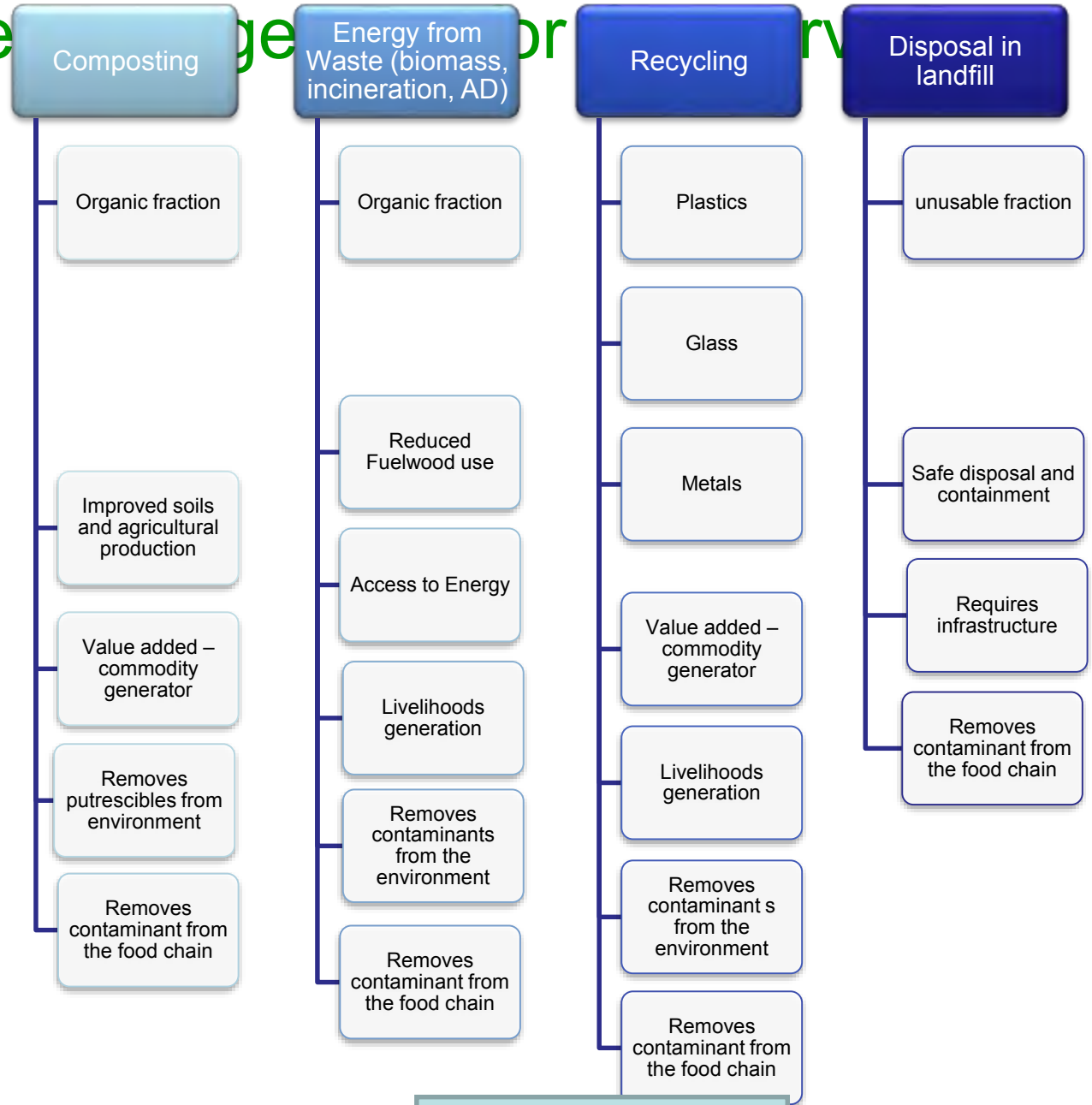


Managing waste at all levels in the value chain and the waste management hierarchy – creating value through recycling, reuse and composting





Waste Management



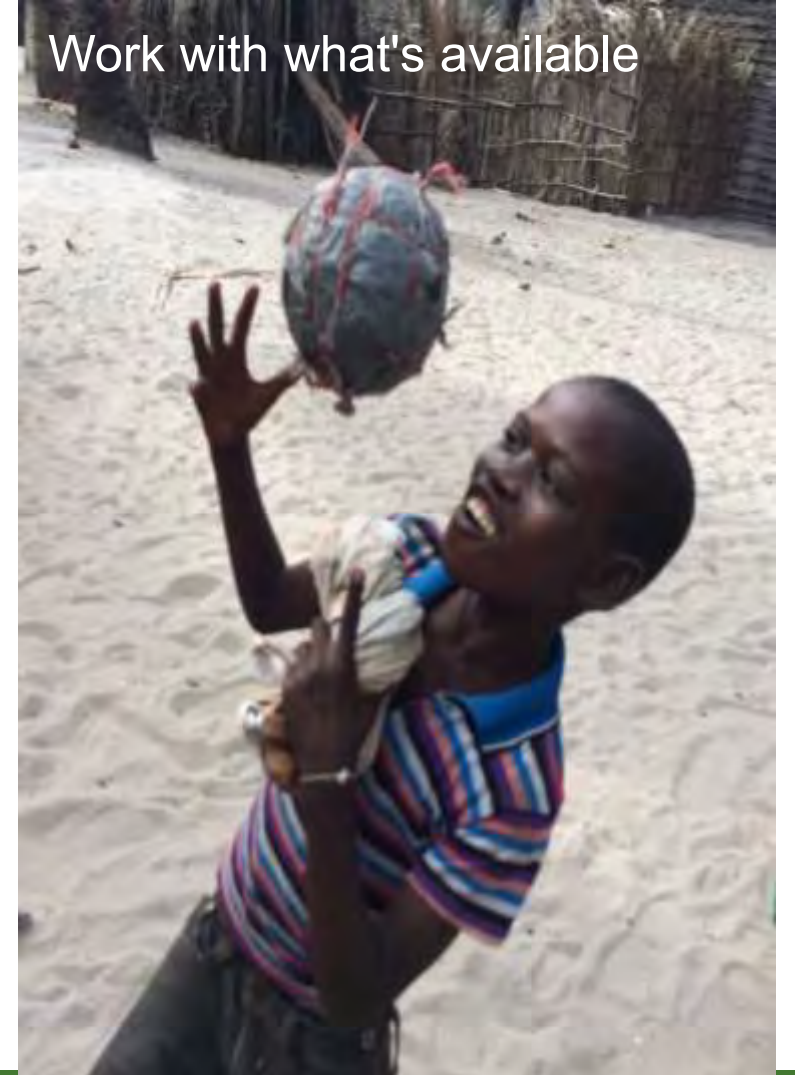
A Clear Purpose



Creativity in Complexity



Work with what's available



Potential number of Livelihoods created in waste management activities


Piloting 10 villages Assume 50 households per village

Source	households	household management	Resource needs	Potential Jobs generated		
fishing	organics	separation	compost	manual, wheel barrow, cart collection	women and men labour containment transportation equipment collection points funding	1 per household - 50 per village
livestock	organics					
farming	organics					
food harvest	organics					
food purchase	organics					
food and goods purchase	plastics non-PET	separation	collection	manual, wheel barrow, cart collection	ditto	5 per village = 50 livelihoods
	plastic PET	separation	collection			
	tins	separation	collection			
	glass	separation	collection			
	rubber	separation	collection			
	batteries	separation	collection			
other	metals	separation	collection			

village management	Potential Jobs generated
Compost	distribution and marketing for sale 8 per village = 80 livelihoods
separation PET	cart, vehicle collection 5 per village = 50 livelihoods
rerecycle	
rerecycle	
rerecycle	
re-use	
safe disposal	
recycle	

District (Palma)	District management	Potential Jobs generated
composts or biomass for energy	distribution and marketing for sale	20 - 30 Palma Bay
transfer station	collection and transport	5 per village = 50 livelihoods
central processing unit - ecopost	distribution and marketing for sale	20 Palma Bay
transfer station	collection and transport	4 Palma Bay
transfer station	collection and transport	10 micro industry
local craft industry	distribution and marketing for sale	10 micro industry
transfer station	collection and transport	1 Palma Bay
transfer station	collection and transport	10 micro enterprise

		Potential Jobs generated	Total Livelihoods created
			160
Central processing facility	distribution and marketing for sale	40 - 80 per processing facility	130
central processing facility	distribution and marketing for sale	10 - 20 Palma Bay	124
central processing facility			10
central processing facility	safe disposal	1 Palma Bay	1
central processing facility	distribution and marketing for sale	10 micro enterprise	10
			435

- 
- ‘Entrepreneurship’ as a role and a set of behaviors and strategies that can be learned (Chell 2007; Bruyere 2015).
 - New partnerships and emerging ‘start-up culture’ and new avenues of funding available - private investors or grants specifically addressed towards the establishment of enterprises.
 - Innovative partnerships by conservation organisations addressing waste can also attract conservation funding
 - Unable to tackle the root cause. Since these enterprises are based on waste they are unable to address the problem of waste generation itself.
 - Unintended consequences for the environment.

Thanks!

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Fauna & Flora International

