Towards a safe, clean, and resilient Straits of Malacca and Singapore:

Marine biodiversity conservation perspective

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TEEB – *The Economics of Ecosystems and Biodiversity*

Centrality of Biodiversity

"Biological diversity is critical for maintaining sustainable and healthy ecosystems for all users and stakeholders"

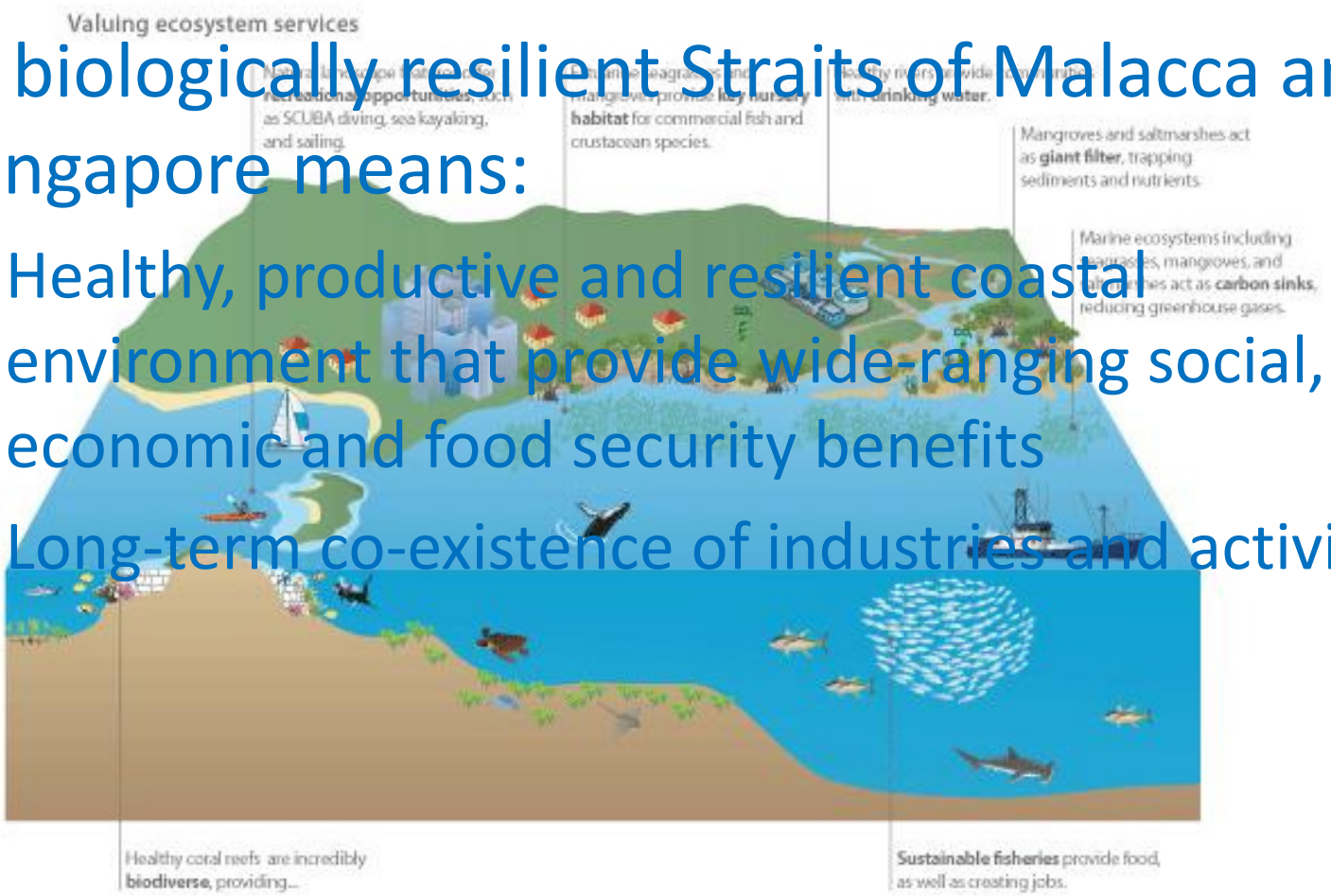
- Supported by the "***diversity invasibility (resistance) hypothesis***" *(Elton, 1958)*
  - Argues that diverse native communities are highly competitive and readily resist invasion
  - Supported by both theory and experimental studies

Centrality of Biodiversity

- "***TEEB for Oceans & Coasts***" draws attention to the ***economic benefits*** of ocean and coastal biodiversity and healthy ecosystems and emphasize the ***unrealized benefits*** of preserved and enhanced whole ecosystem structures, functions and processes to the ***well-being of humans and nature***

Centrality of Biodiversity

- A biologically resilient Straits of Malacca and Singapore means:
  - Healthy, productive and resilient coastal environment that provide wide-ranging social, economic and food security benefits
  - Long-term co-existence of industries and activities



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The Coastal and Marine Environment *of the SoM and SoS*

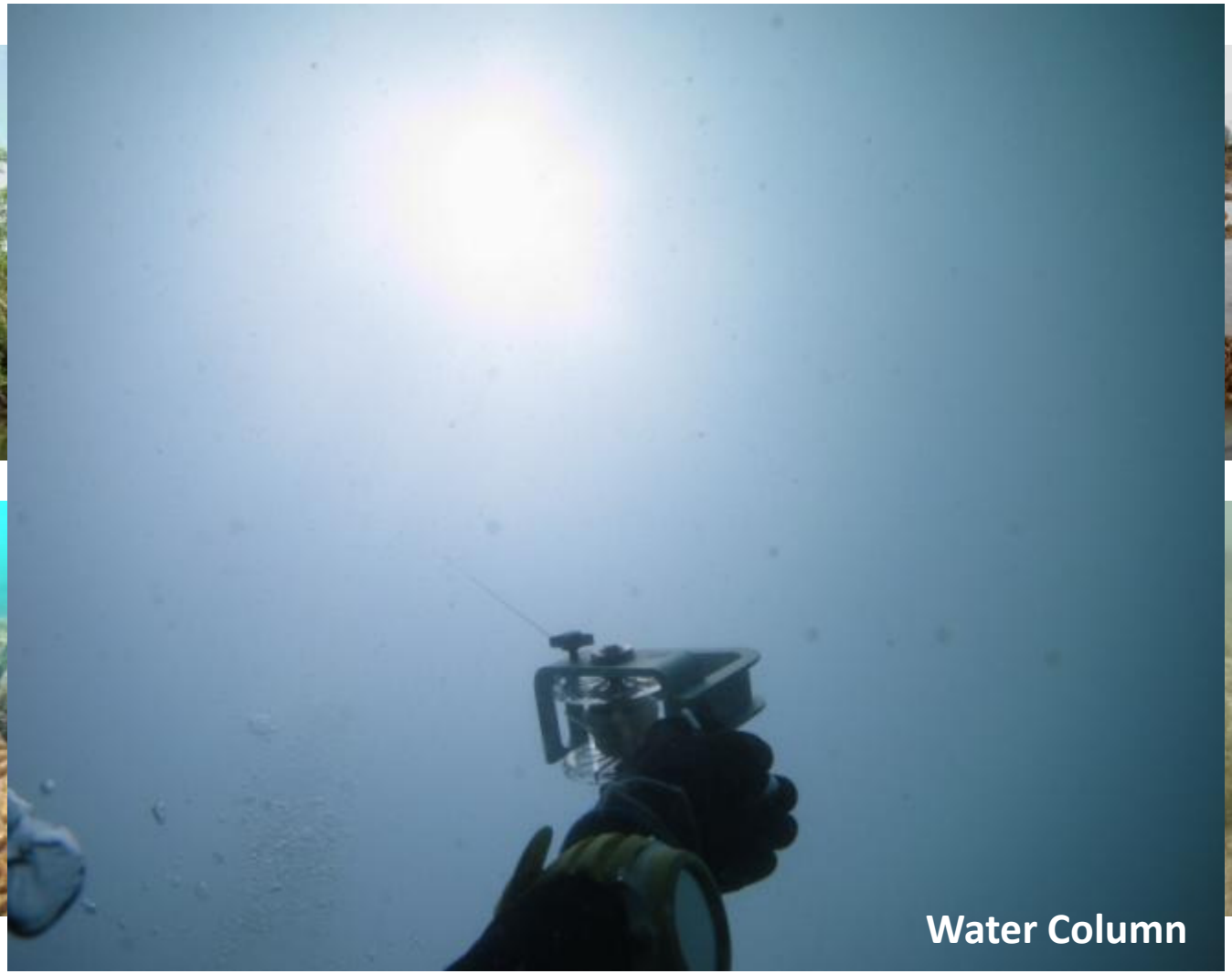
Coastal & Marine Environment of the SoM and SoS

Influenced by waters from 3 regional seas - the Andaman Sea (Indian Ocean), the South China Sea & the Java Sea (Pacific Ocean).....

Coastal & Marine Environment of the SoM and SoS

…..and within the western reaches of the Coral Triangle region

Coastal & Marine Habitats of the SoM and SoS



Coastal & Marine Biodiversity of the SoM and SoS

Managing the Coastal & Marine Environment of the SoM & SoS…

- …. is about balancing priorities
  - *Industry and port development*
  - *Food security, housing and recreation*
  - *Environment and habitat protection*
- Key challenges facing the SoM and SoS
  - *Competing demands for limited land and sea space*
  - *Increasing population*
  - *Land- and sea- based pollution*
  - *Trans-boundary influences*

ICM/IUCM *as an Operational Framework for Managing the Coastal and Marine Environment of the SoM and SoS*

Operational Framework: ICM

- Sustainable management framework based on the simple concept of getting people to work together in managing the coastal environment
- Comprises several complimentary elements:
  - Regulation of human use of resources
  - Integration of decision making between sectors and levels of government
  - Recognition of catchment-coast and coast-ocean interactions
  - Community-participation in decision making

Operational Framework: ICM

- Resolve / reduce multiple use conflicts
- Improve inter-agency coordination in planning and management
- Promote policy and functional integration
- Ensure sustainable use and environmental protection
- Avoid/reduce risks to public and ecosystem health
- Create environmental investment

Operational Framework: IUCM

- A framework for coordination in an ***urbanised*** coastal environment

- Guiding principles:
  - Pro-active planning and management
  - Whole-of-Government approach
  - Active partnerships
  - Science-based management

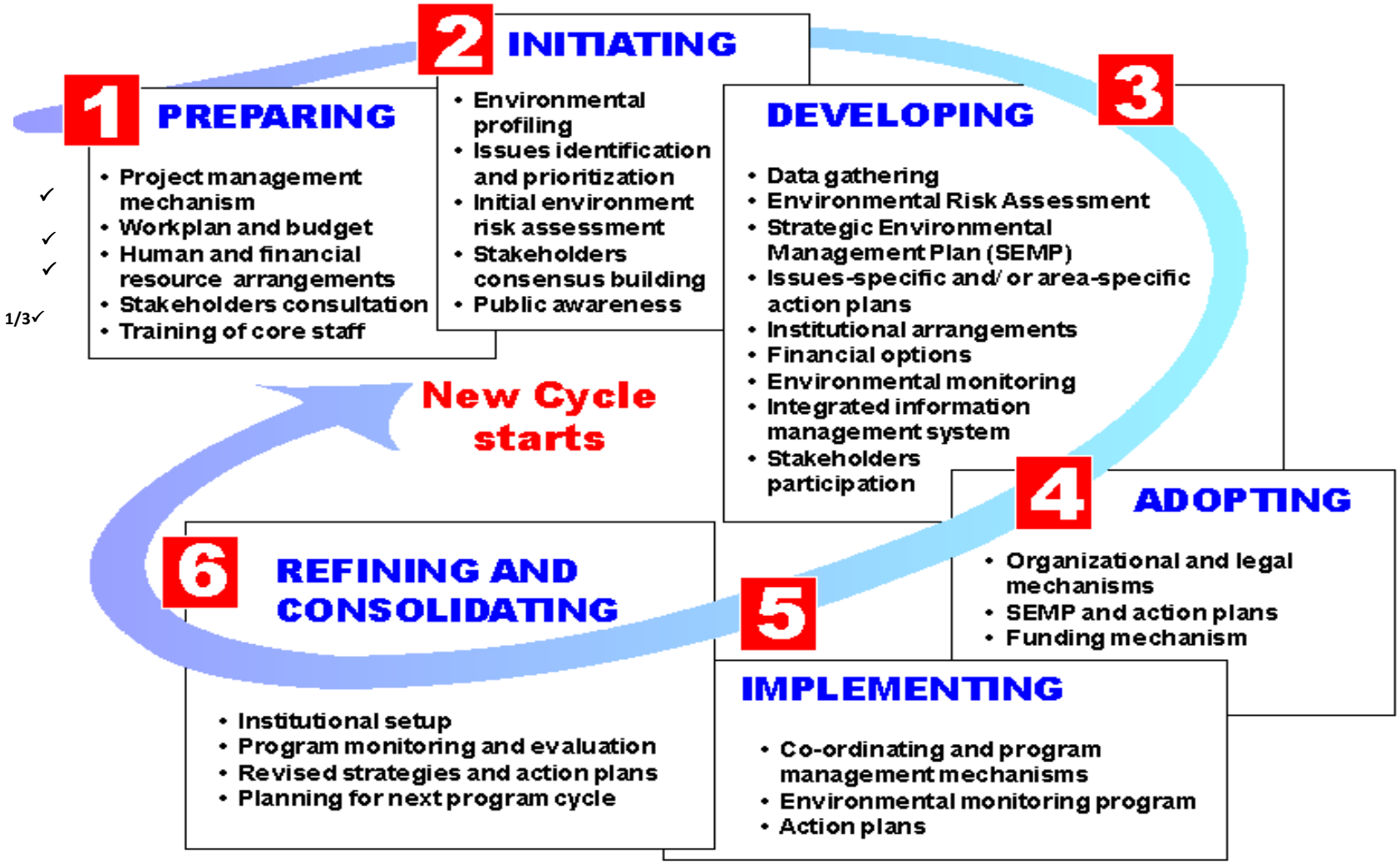
SINGAPORE'S INTEGRATED URBAN COASTAL MANAGEMENT

- Singapore recognized as PEMSEA's regional IUCM demonstration site on 18th Nov 2013

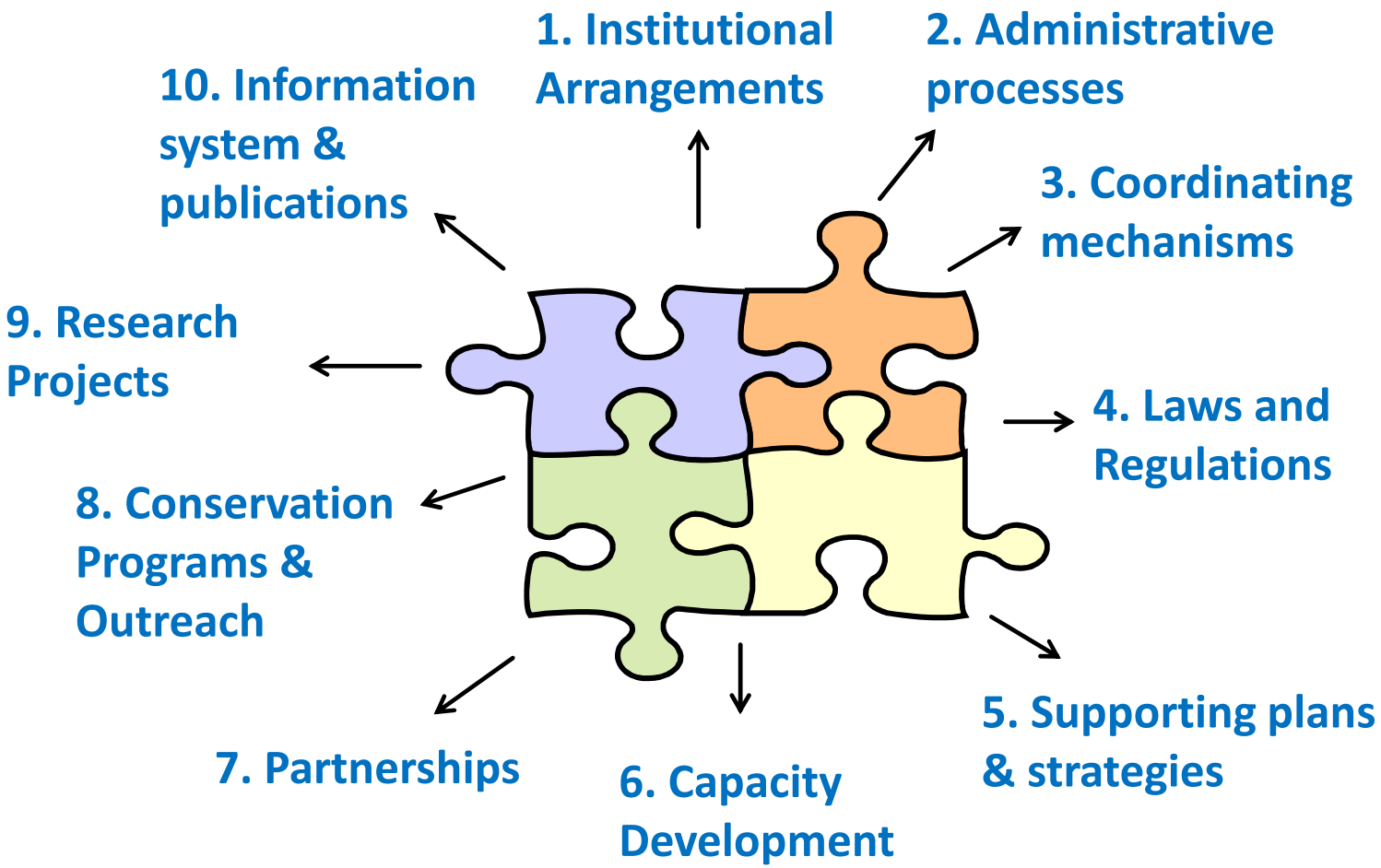
ICUCM in Singapore

- Enhance coordination between all stakeholders in coastal and marine land use and planning
- Ensure the conservation of sensitive coastal habitats and biodiversity/natural resources amidst coastal development
- Optimise the use of coastal resources, including coastal space in a sustainable manner

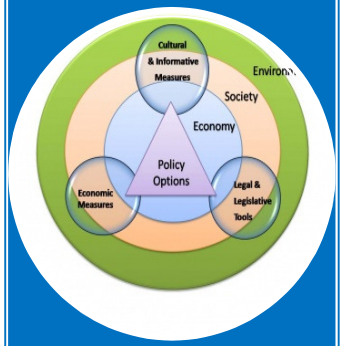
IUCM: Iterative Process



IUCM: Instruments



5 Key Approaches



Mainstreaming

Safeguarding & Enhancement

Survey, Monitoring & Research

Knowledge Management & Synthesis

International Participation

Singapore's IUCM is a strong model for sustainable development - ***World's busiest harbour + good water quality + rich biodiversity***

This model can be similarly adapted and implemented in other coastal areas regionally and beyond to achieve a holistic approach to sustainable coastal development

THANK YOU!