Goa 2030: implementing a *RUrban* Sustainability Transition

Goa 2100 team

World Gas Conference

Amsterdam, 7th June 2006

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Can 120 million people live sustainably on India's Western coast by 2050?

One-third of the current population of the EU, two-fifth of the US, as many as Japan

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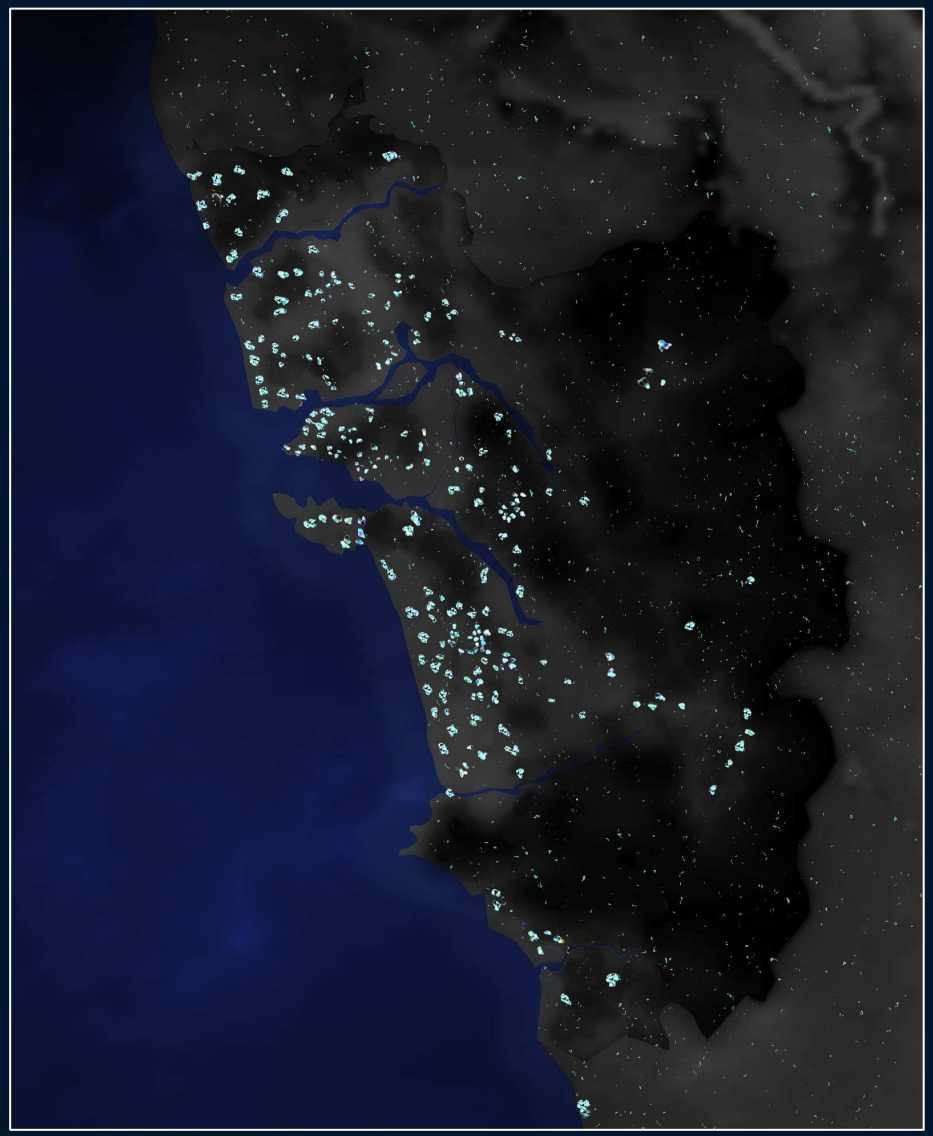
The Goa 2030 challenge: Scaling-up Sustainable *RUrban* planning across the state



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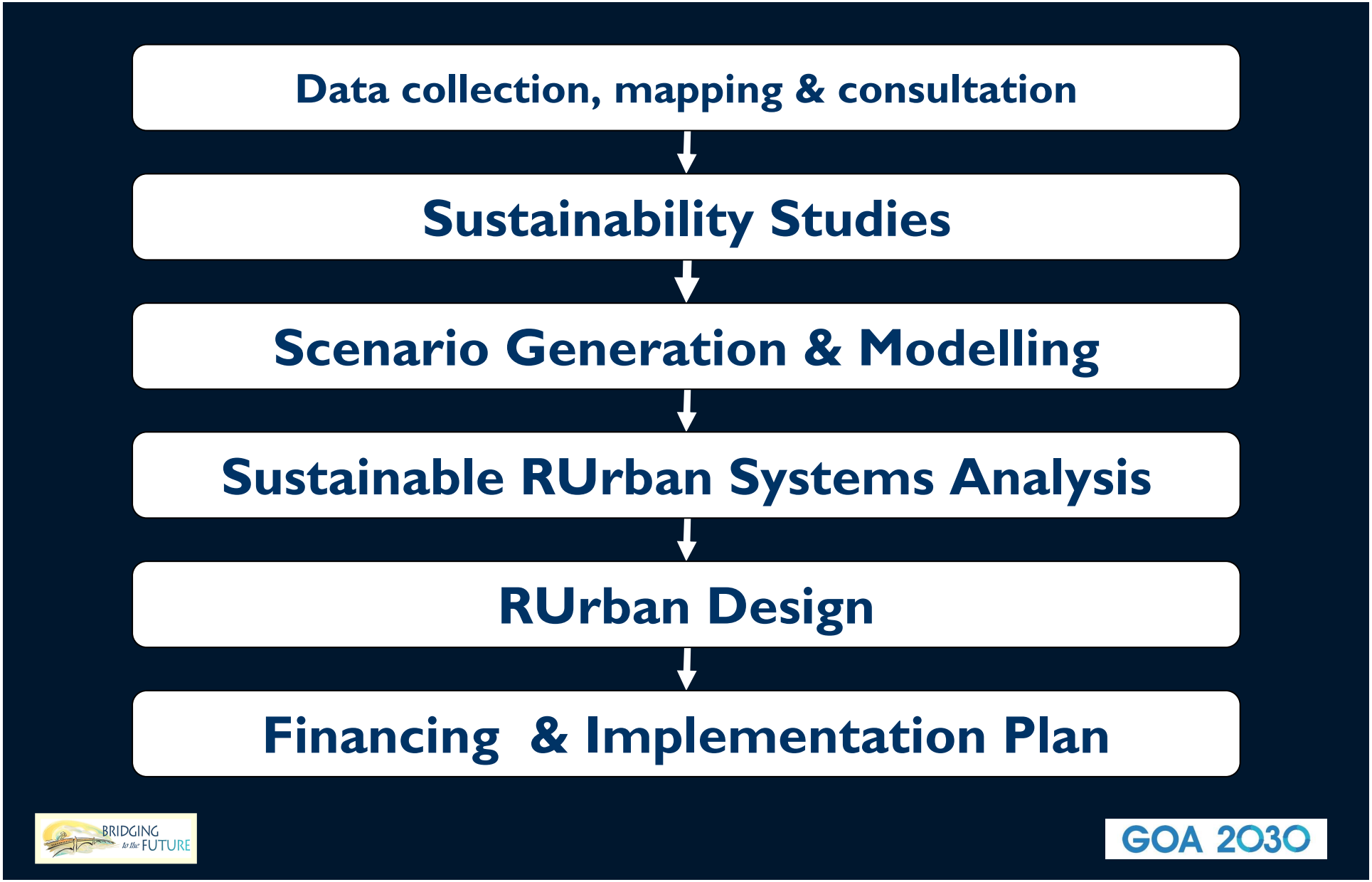
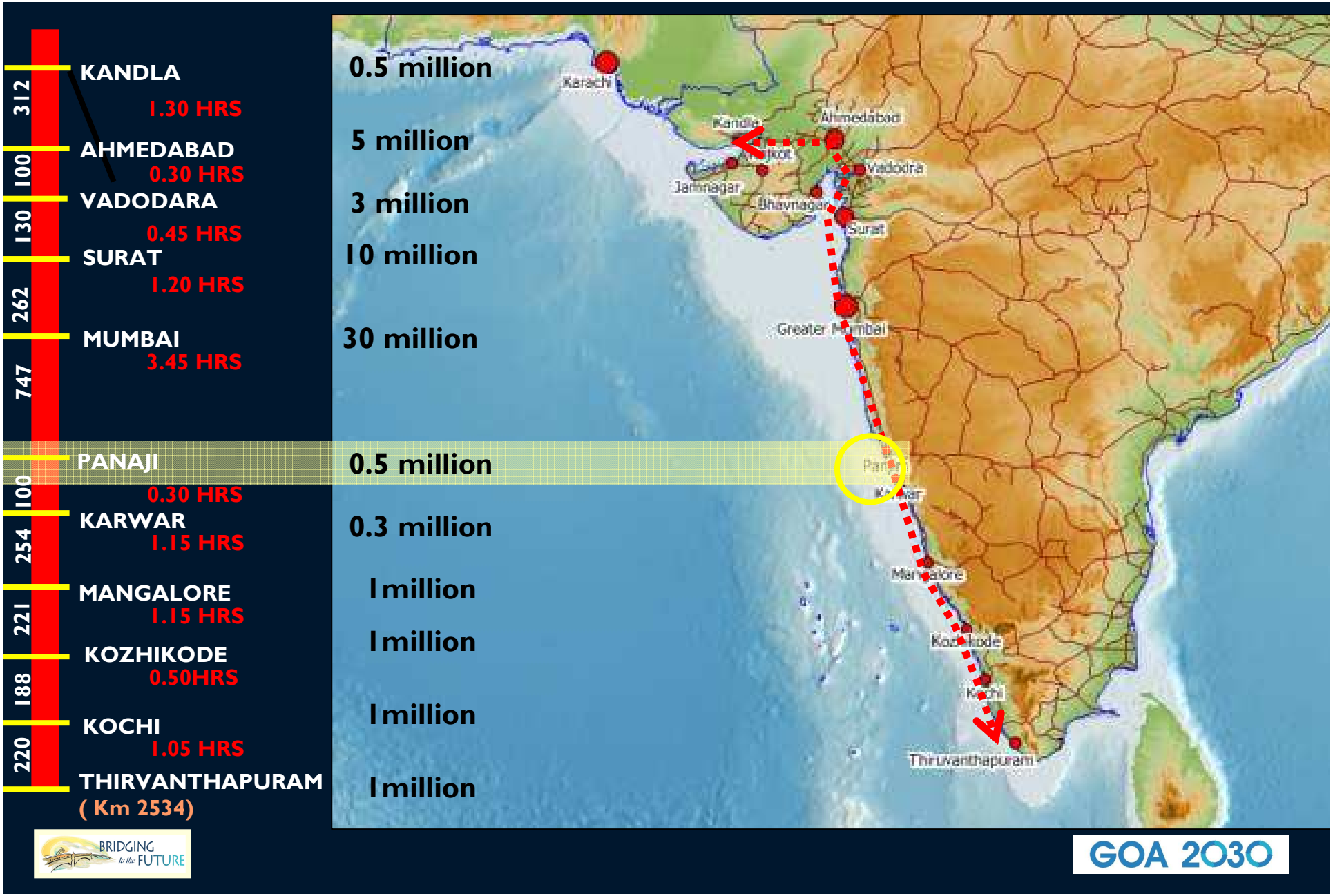
A Method for Long-Term *RUrban* Planning & Design



Goa's Regional Context (2030)



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Designing Sustainable Ecosystem services

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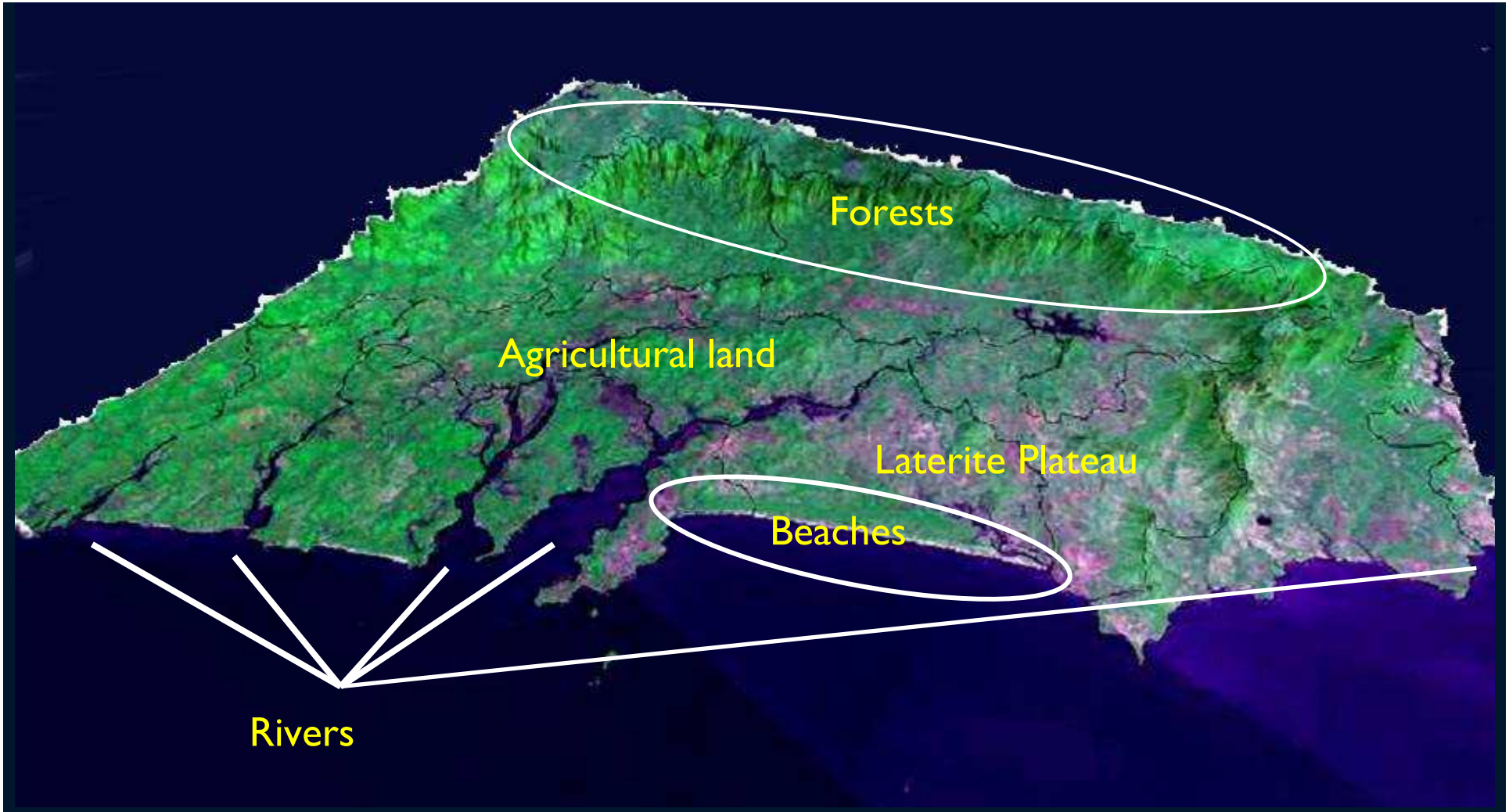
Goa land cover 2005



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Goa: land-waterscapes

Forests & rivers

Rice fields

Urban settlements

River estuary

Beaches & Arabian sea

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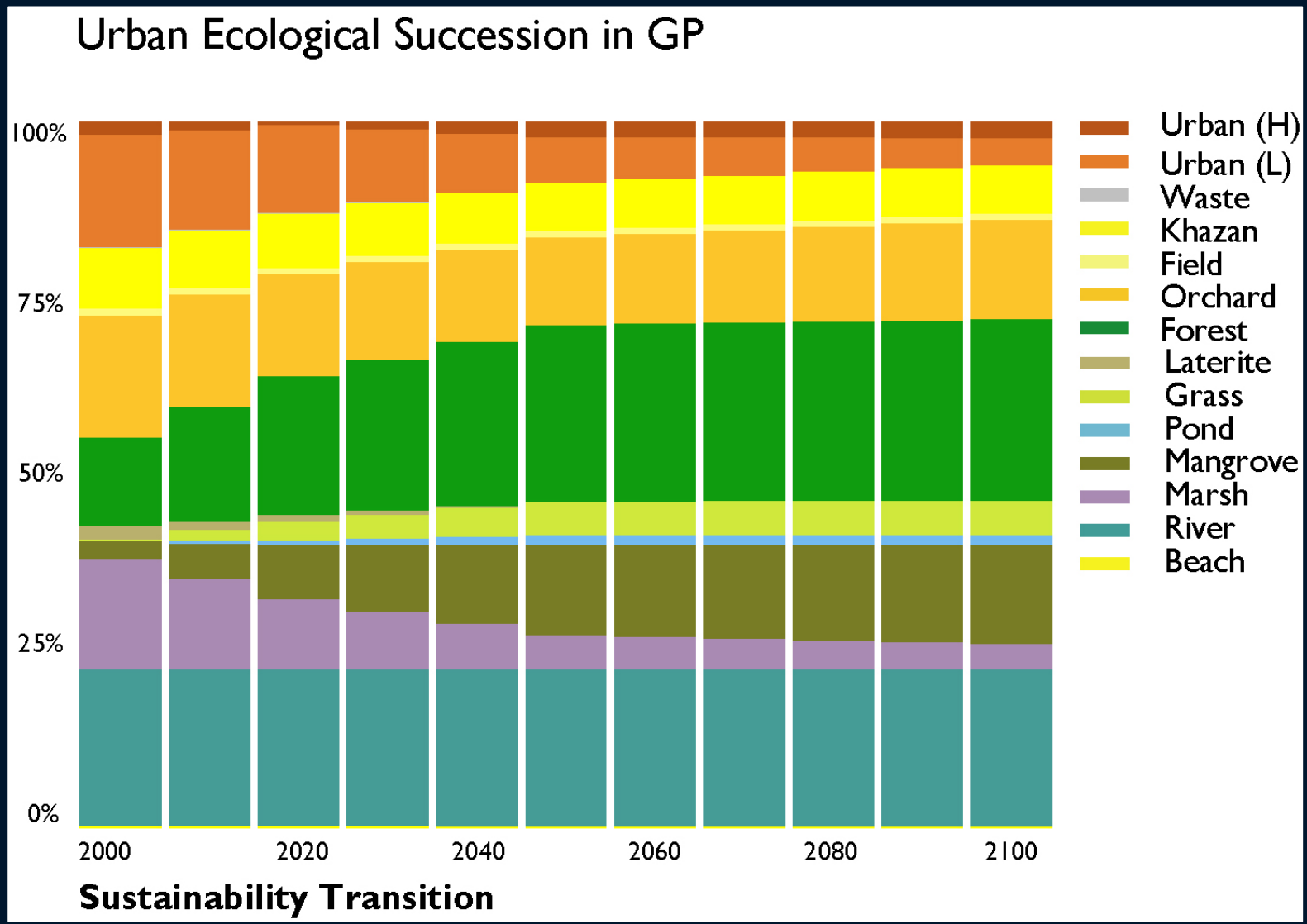
RUrban Ecological Transformation



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Key Change Driver:
Urban consolidation

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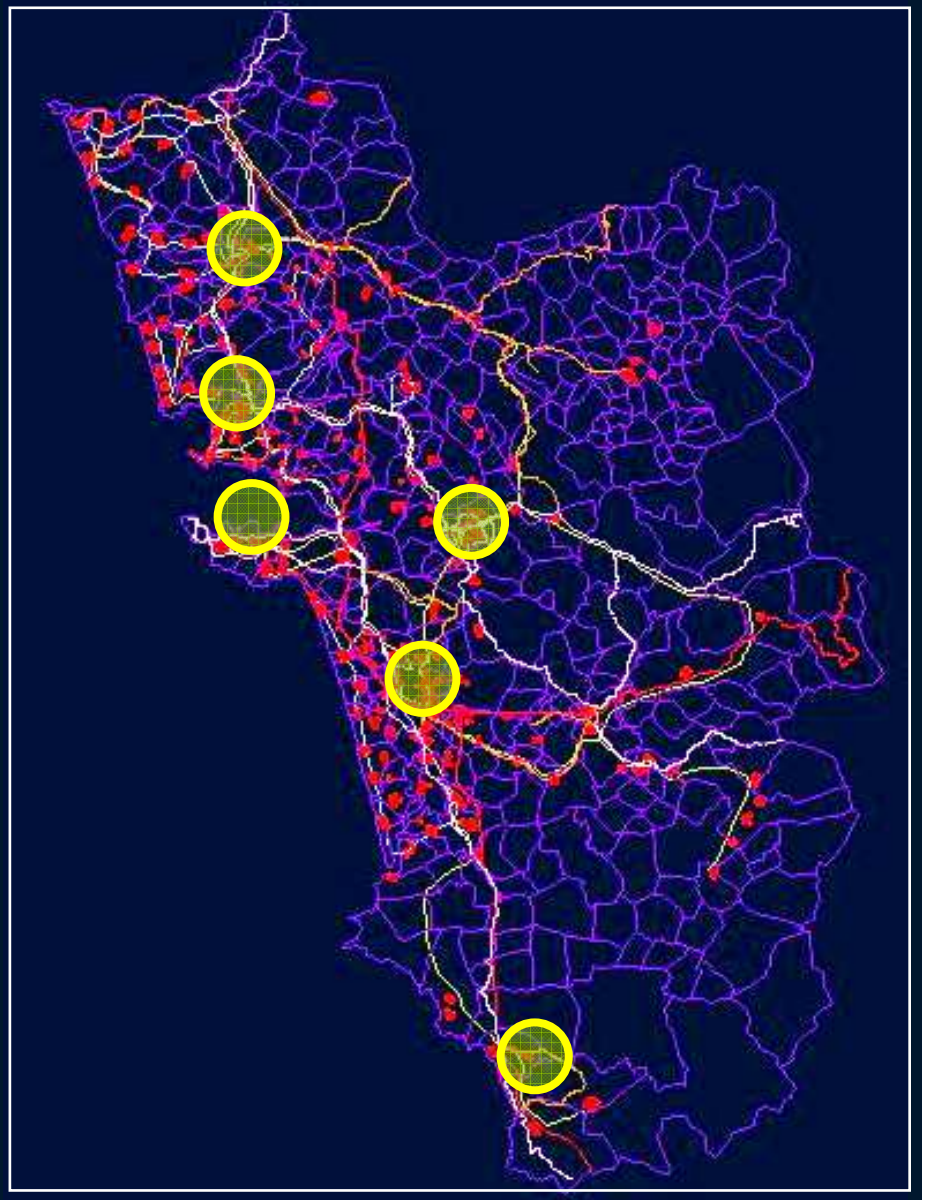
Consolidation of Urban Centres



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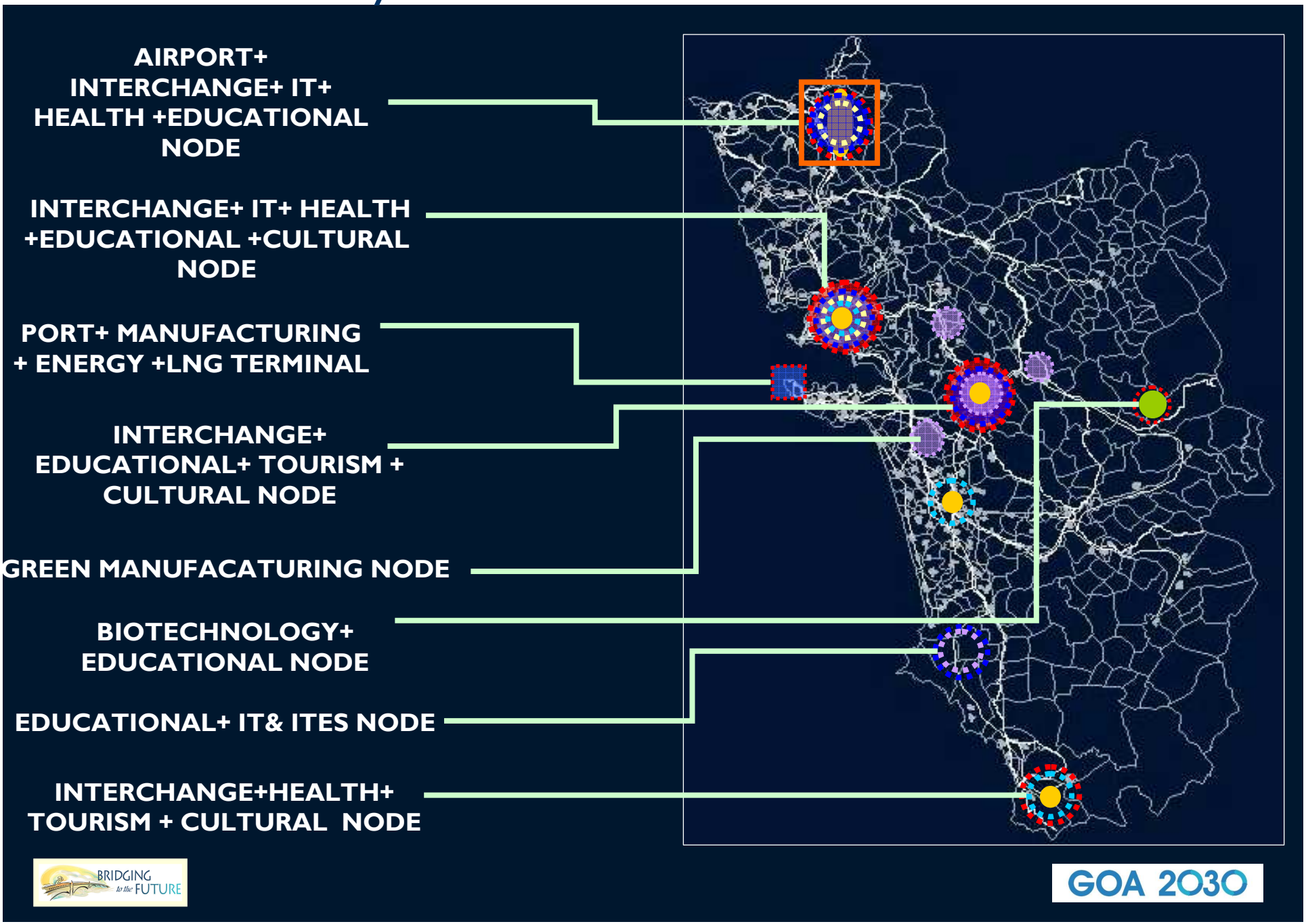
Key Growth Centres and Nodes



Key Change Driver:
Sustainable Transportation Networks

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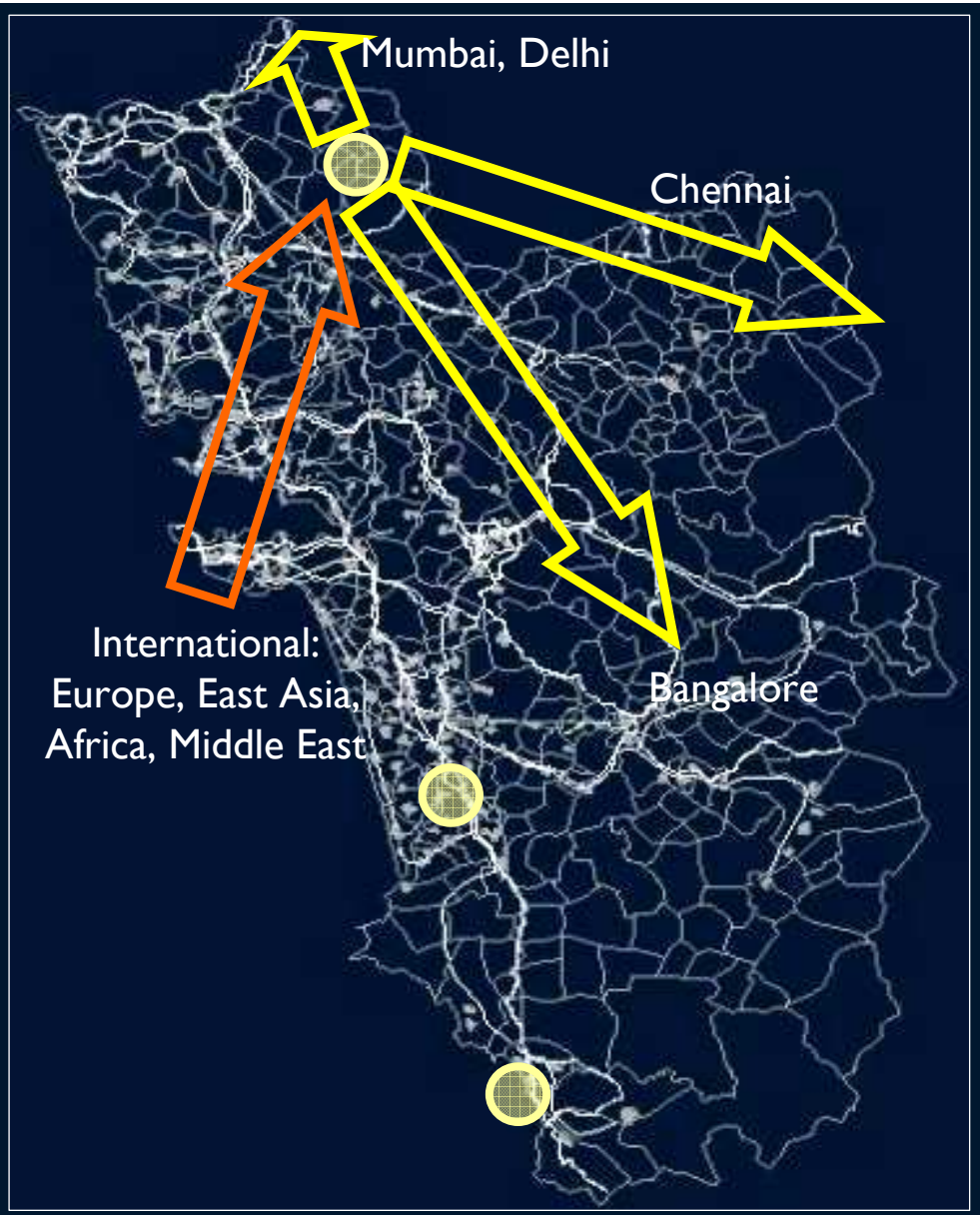
The proposed Mopa International Airport



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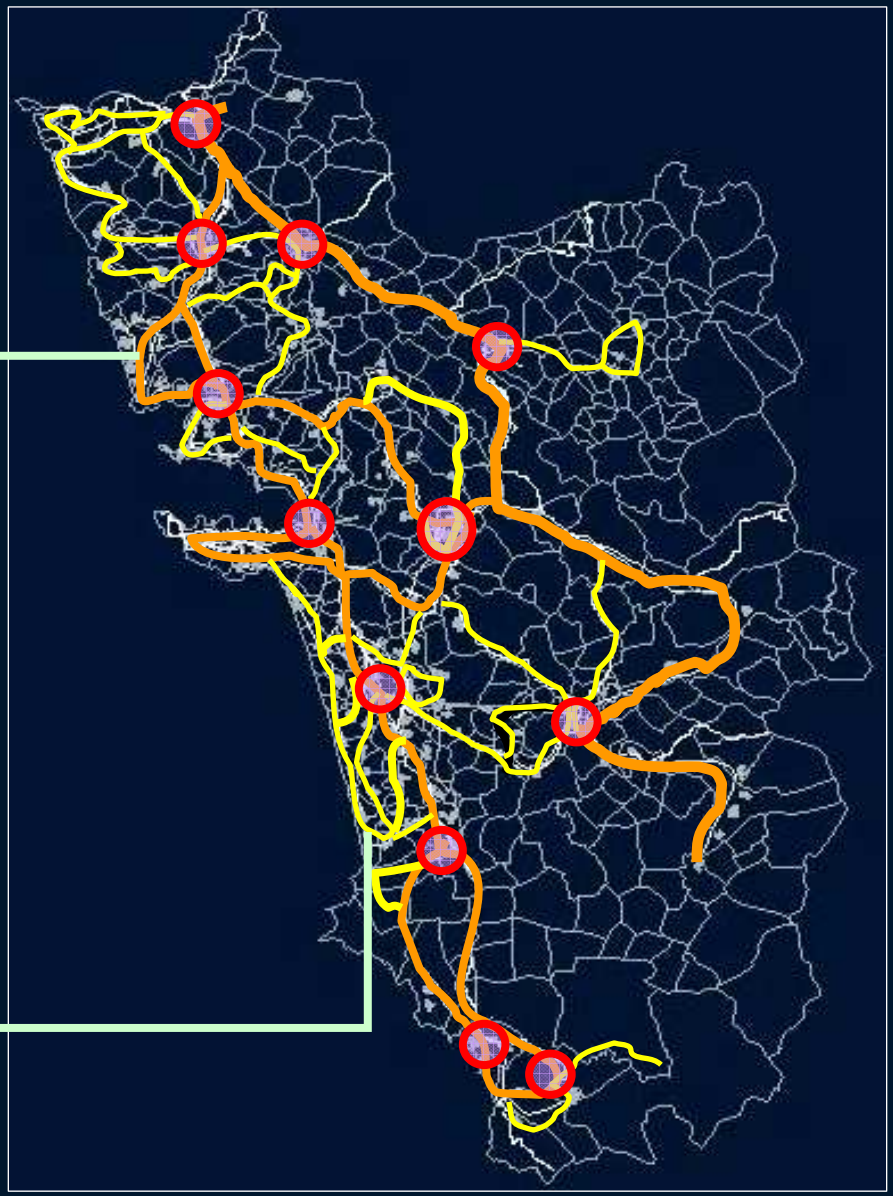
High Speed Inter-regional Rail Corridor

Intercity Light Rail & High Capacity Bus systems

INTERCITY LIGHT RAIL NETWORK

INTER-NUCLEI HIGH CAPACITY BUS SYSTEM NETWORK



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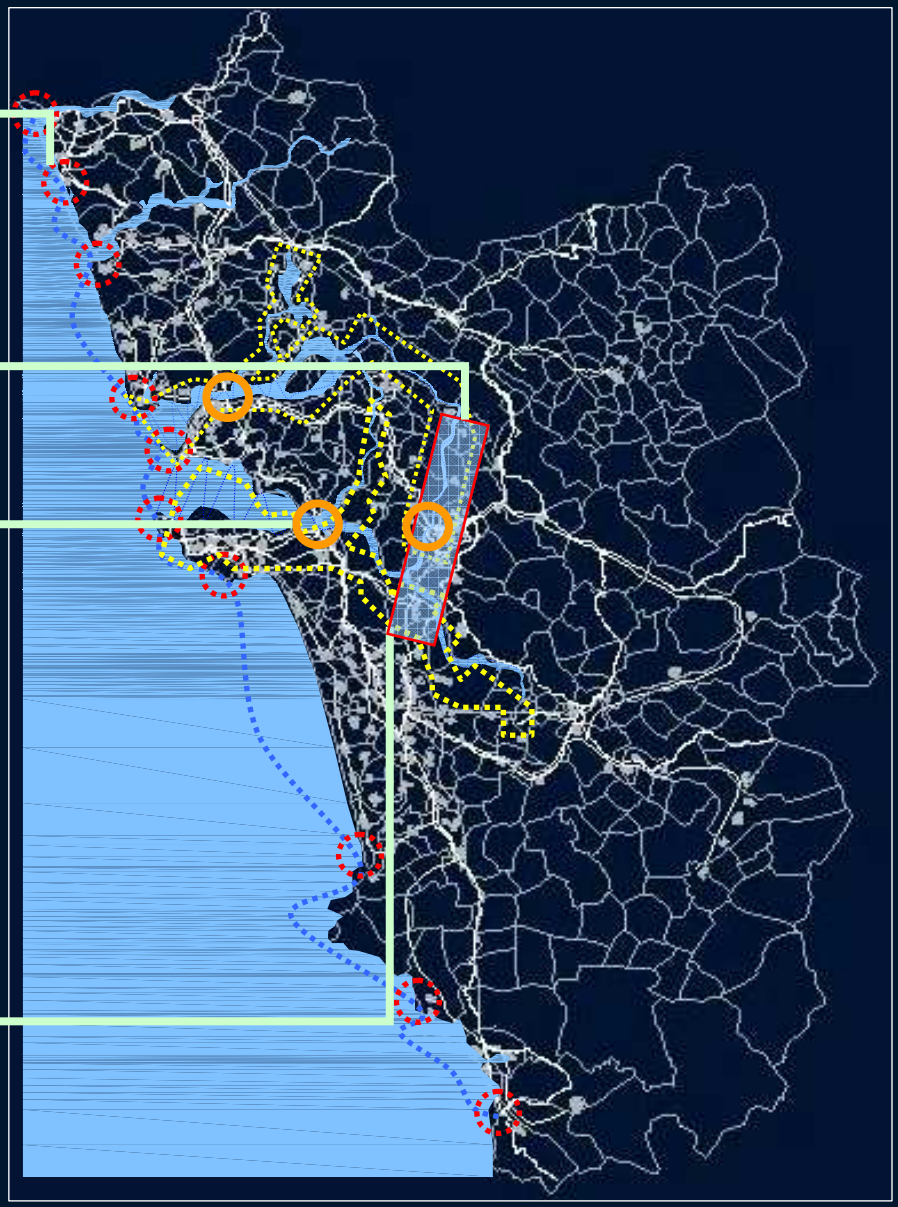
Hydrofoil and All season River Transport Systems

HYDROFOIL NODES

NEW CANAL NETWORK FOR MAJOR URBAN CENTRES

THREE INTRA-MODAL TERMINII

SOLAR FERRY NETWORKS



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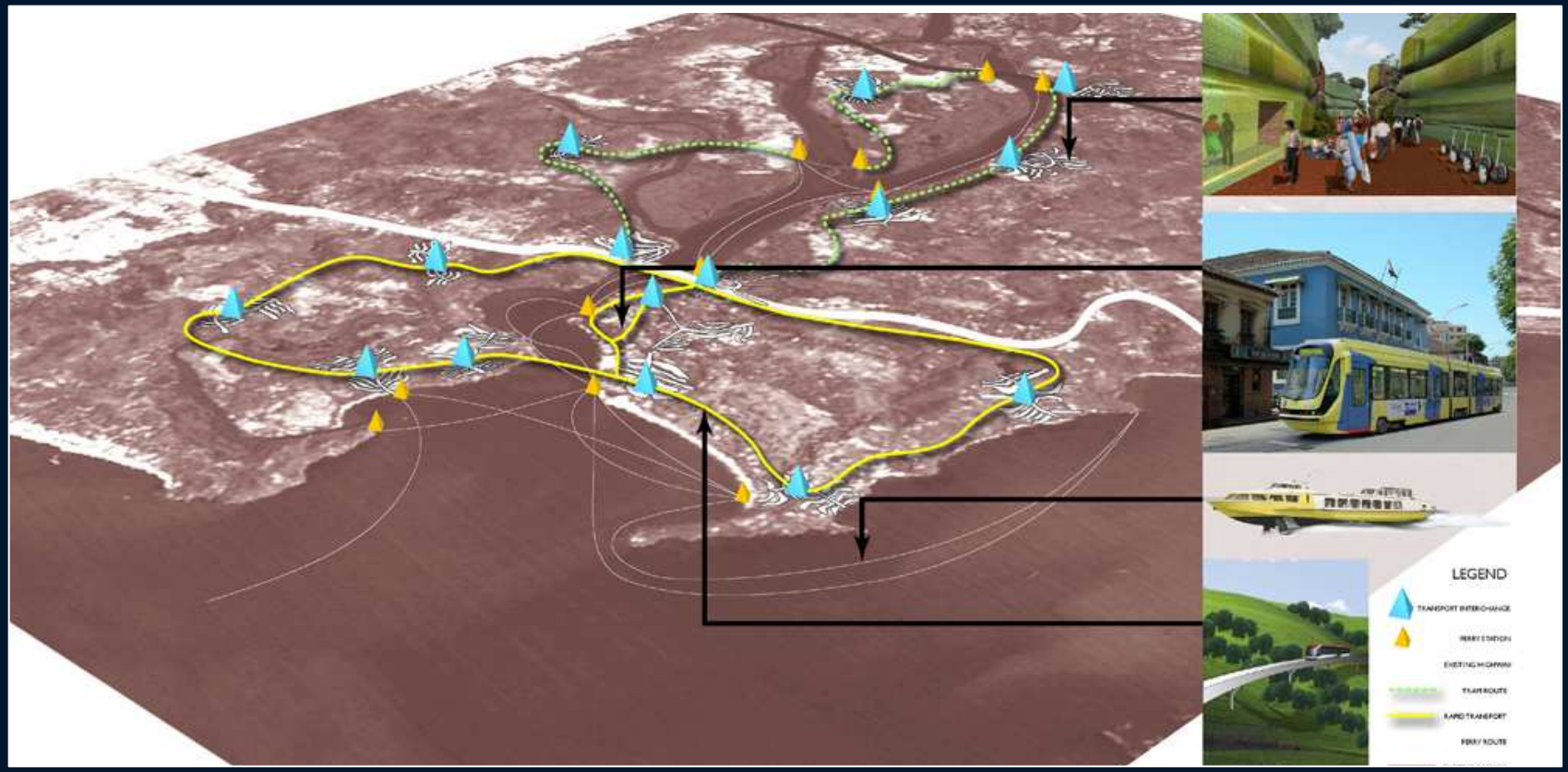
RUrban scale Mobility systems



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Key Change Drivers: Sustainable Agriculture, Forestry & Aquaculture

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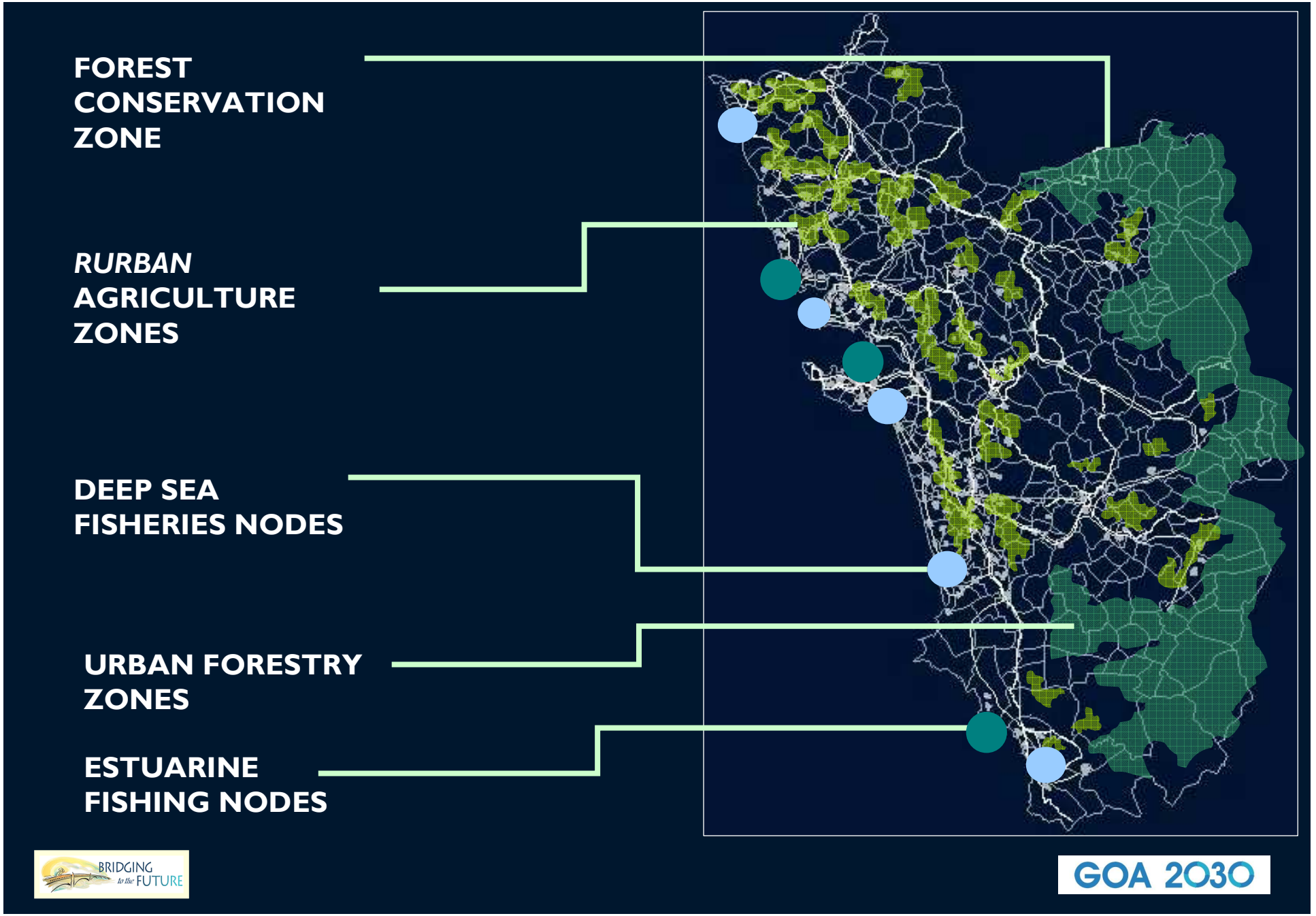
Sustainable Forest, Food and Fisheries Production



Key Change Driver:
Clean 'Factor 4' Manufacturing

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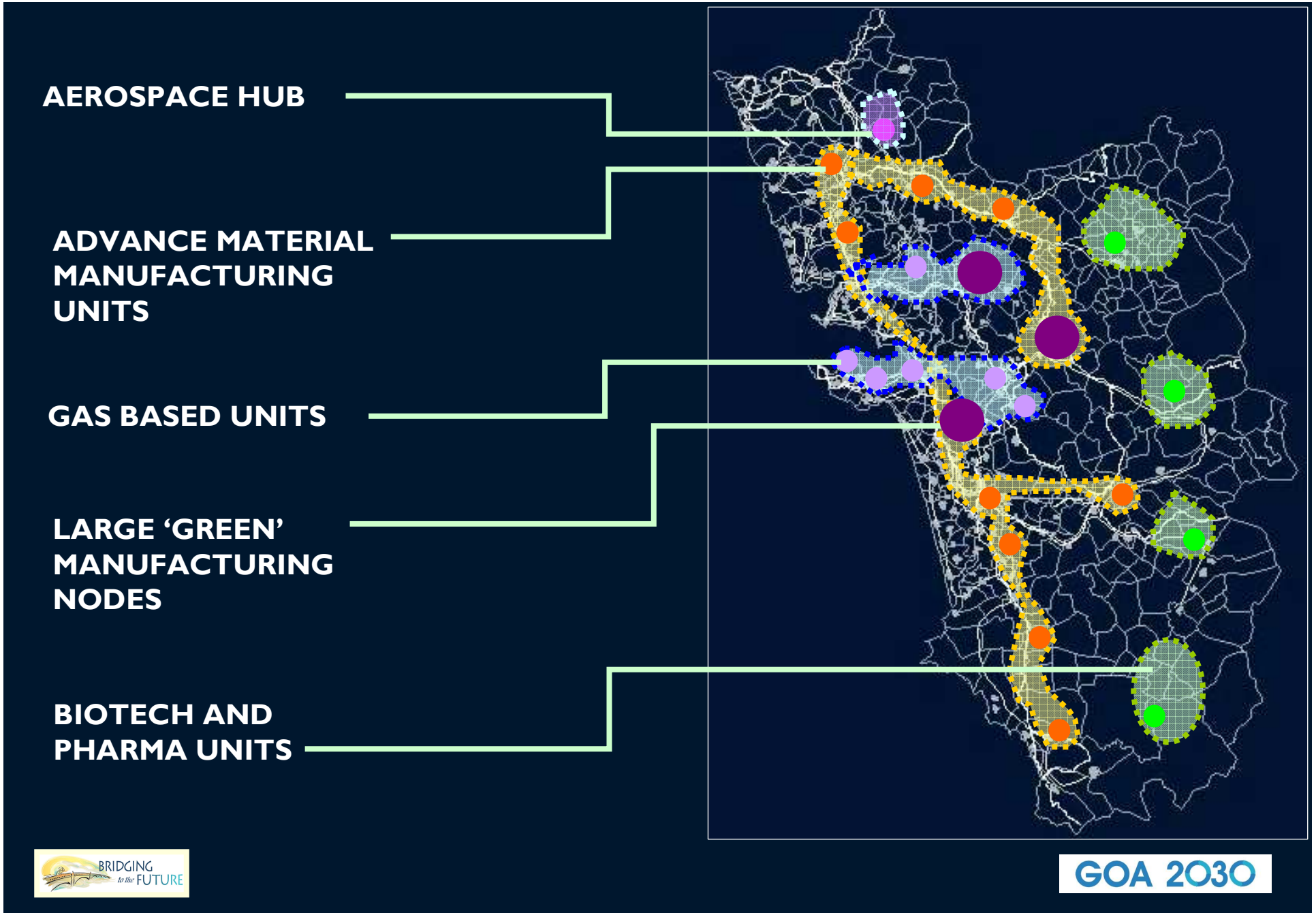
‘Green’ Manufacturing Nodes



Key Change Driver:
Service-sector led development

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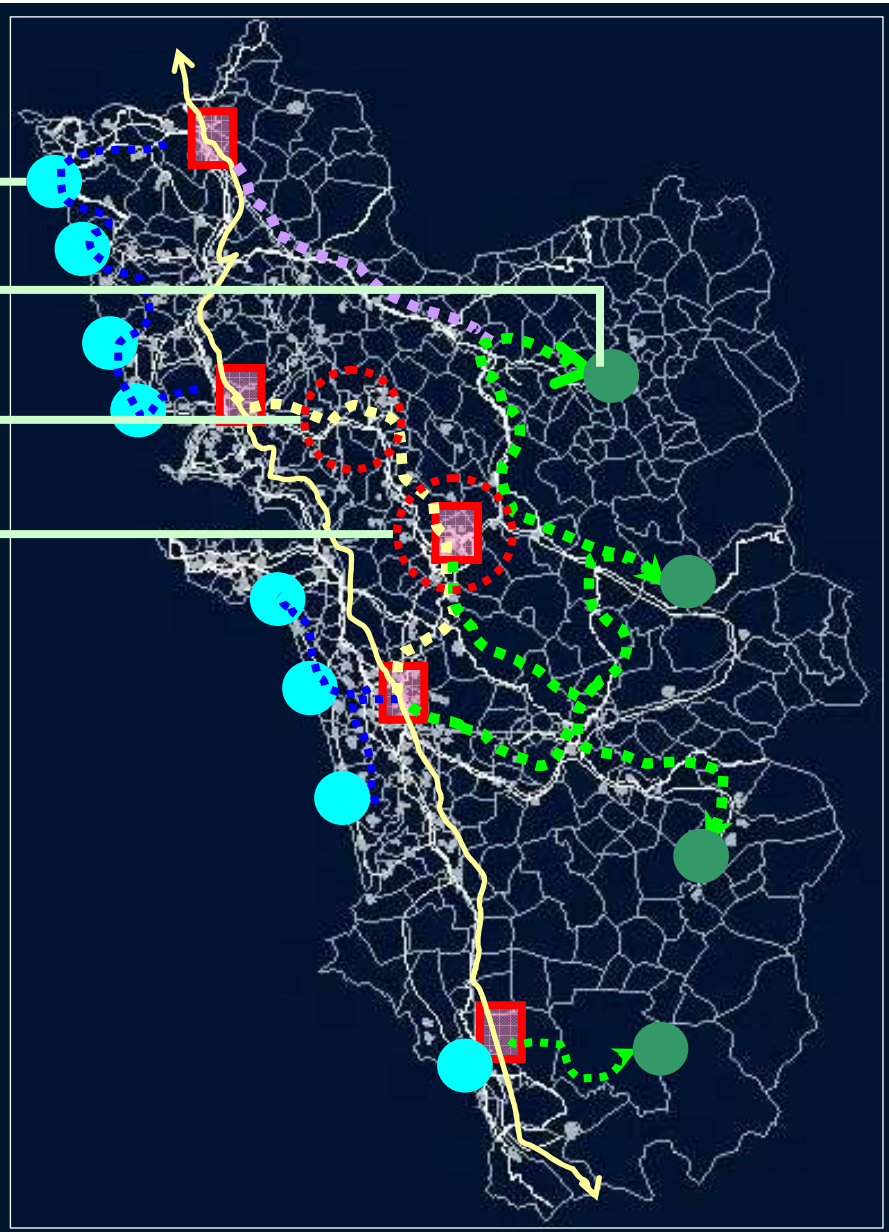
Tourism Networks

BEACH TOURISM NETWORK

ECO- TOURISM NETWORK

HERITAGE TOURISM NETWORK

RELIGIOUS TOURISM NETWORK



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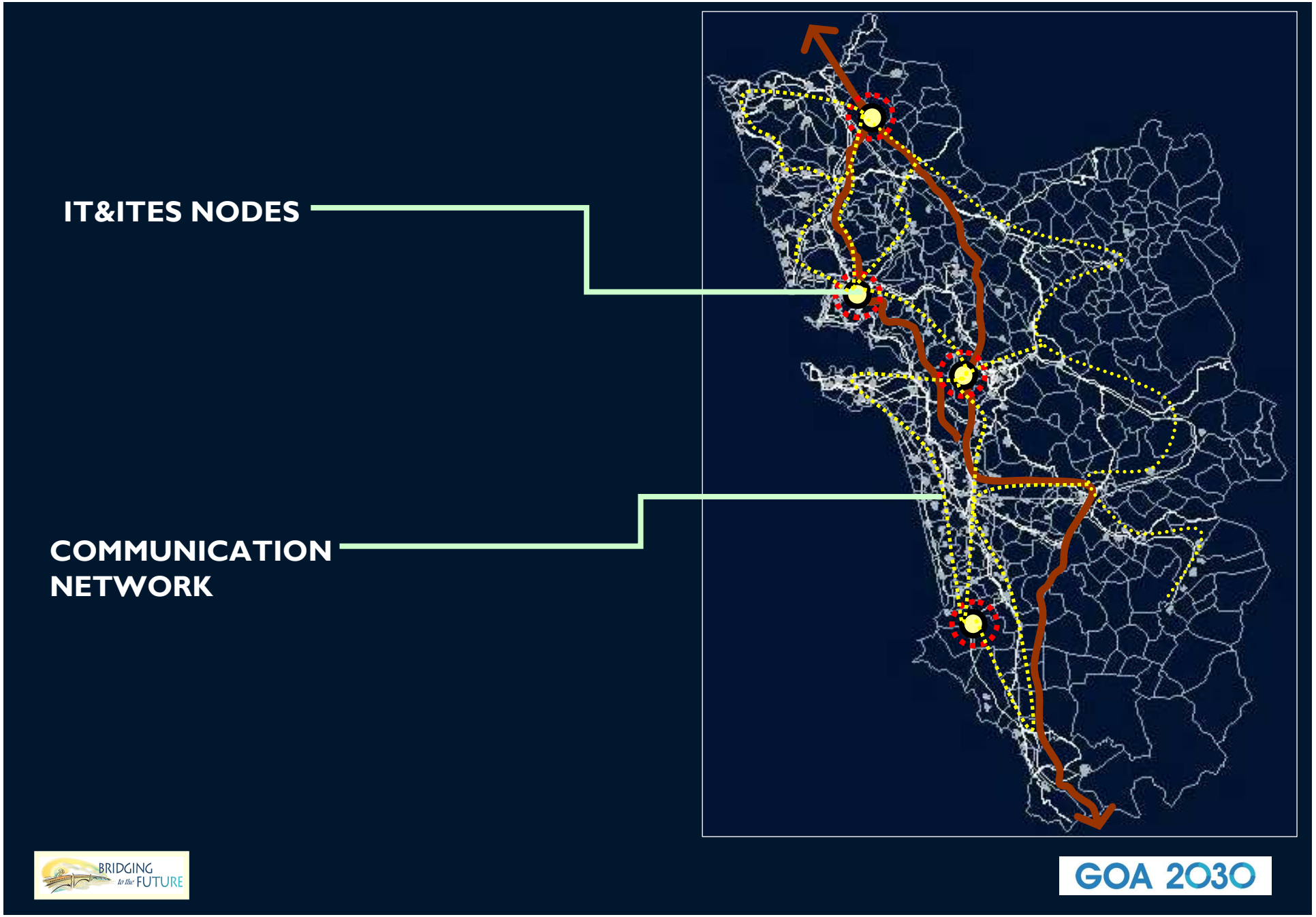
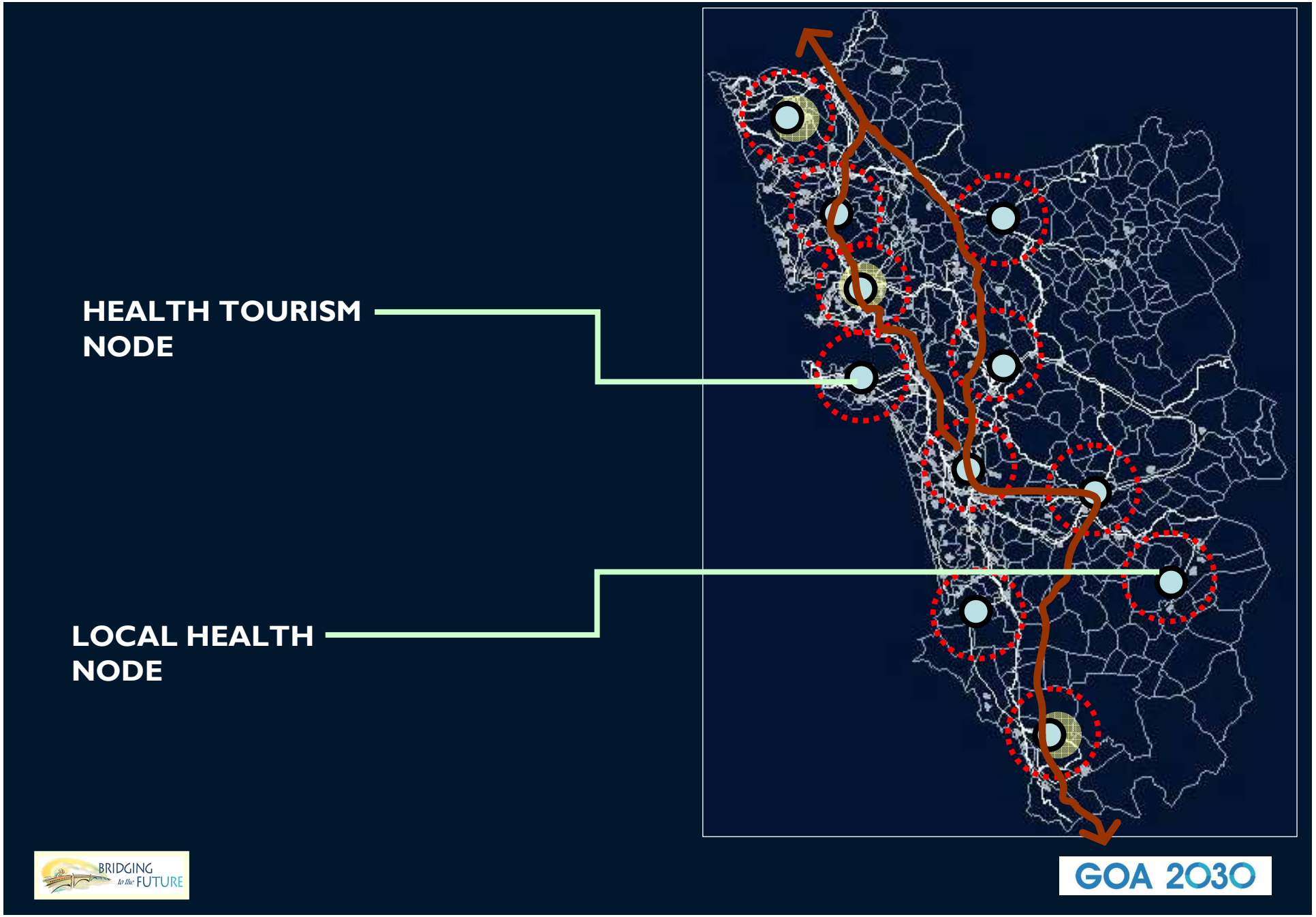
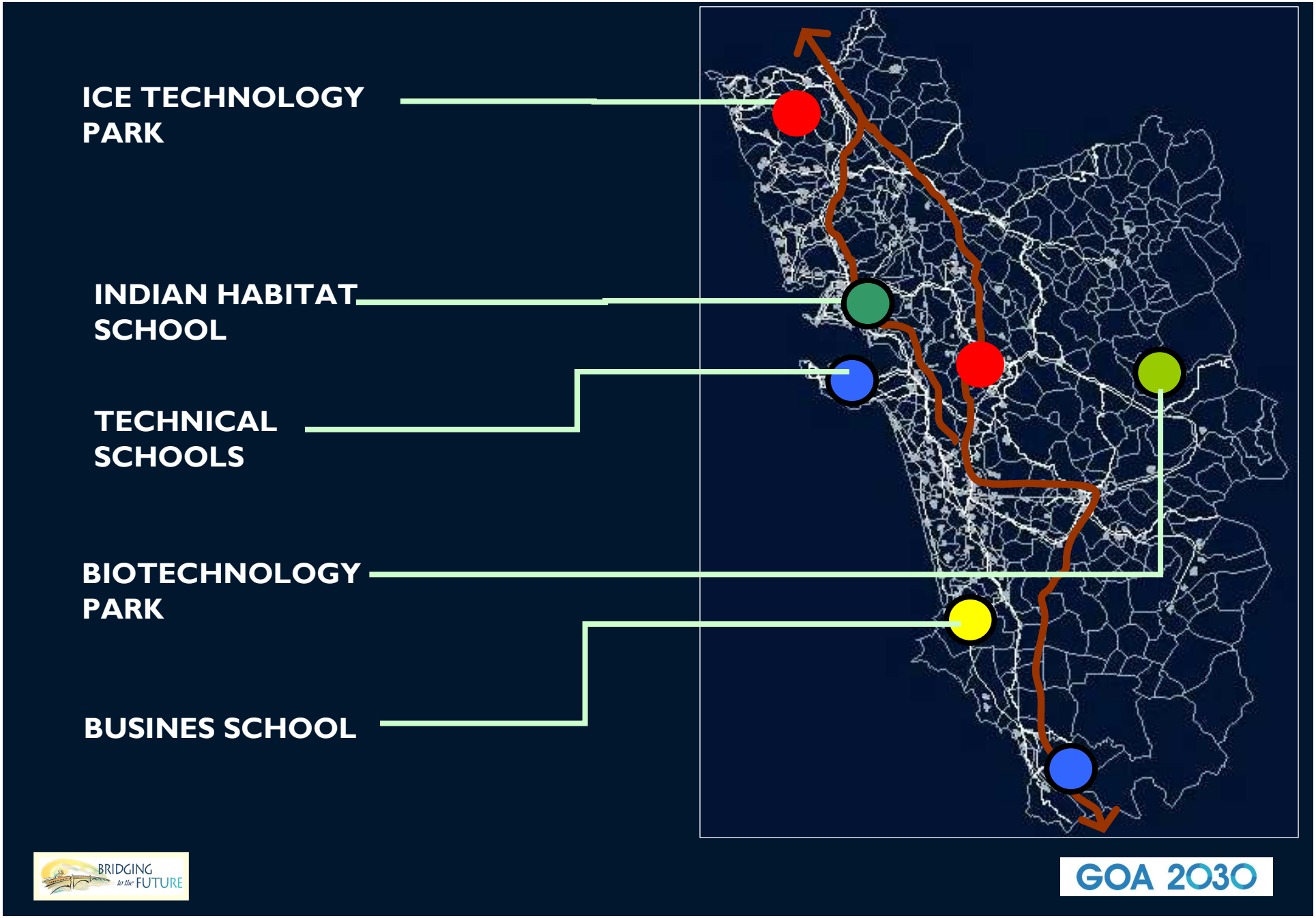
IT & ITES Nodes & Statewide IT infrastructure



Wellness Nodes



Educational & Technology Nodes



Goa 2030:
Catalyst interventions under development

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Verna 1000 MW Wind Turbine manufacturing Special Economic Zone

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Verna 1000 MW Wind Turbine manufacturing Special Economic Zone

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Verna 1000 MW Wind Turbine manufacturing Special Economic Zone

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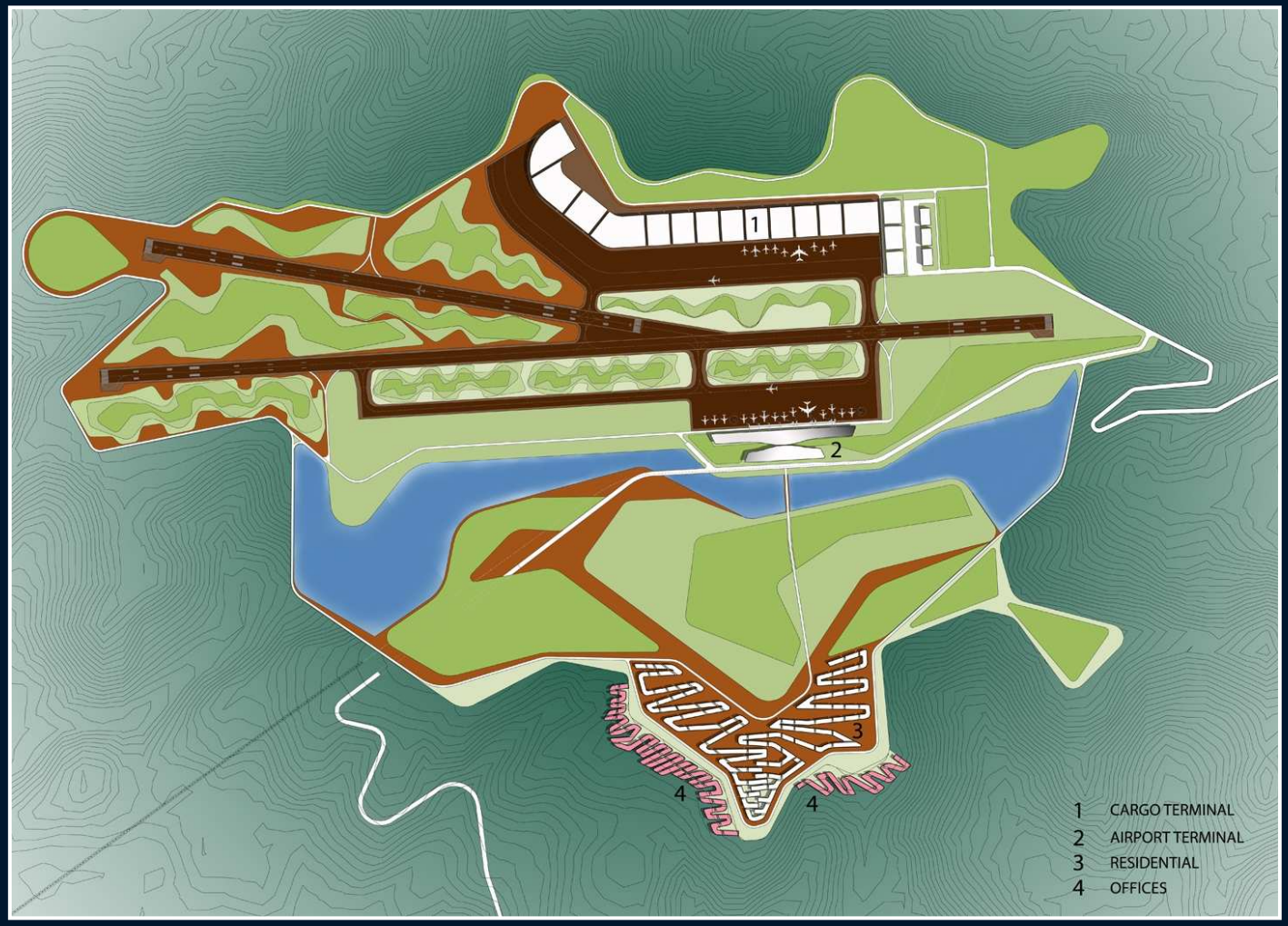
Mopa International Airport: Concept 'Green' Design



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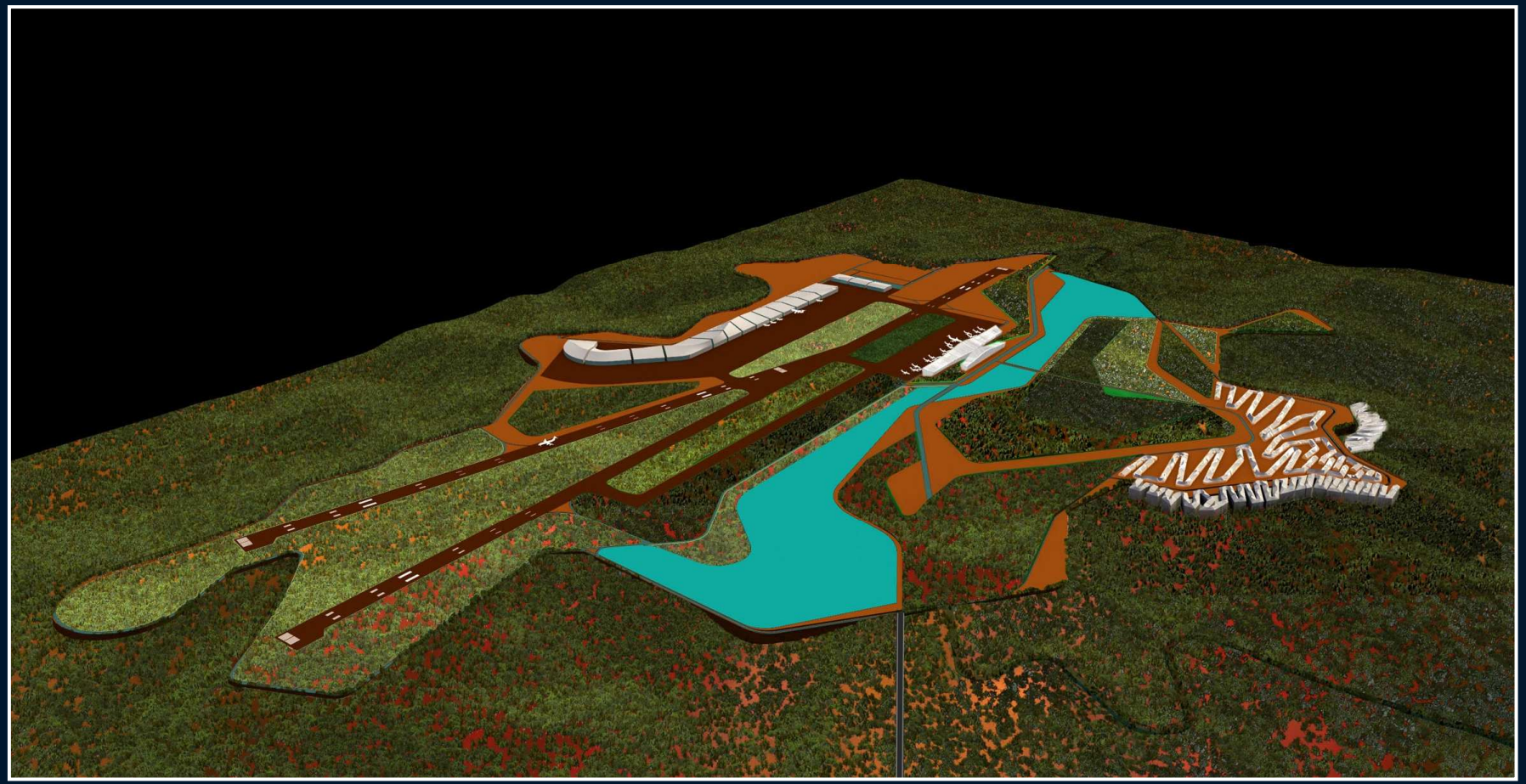
Mopa International Airport: Concept 'Green' Design



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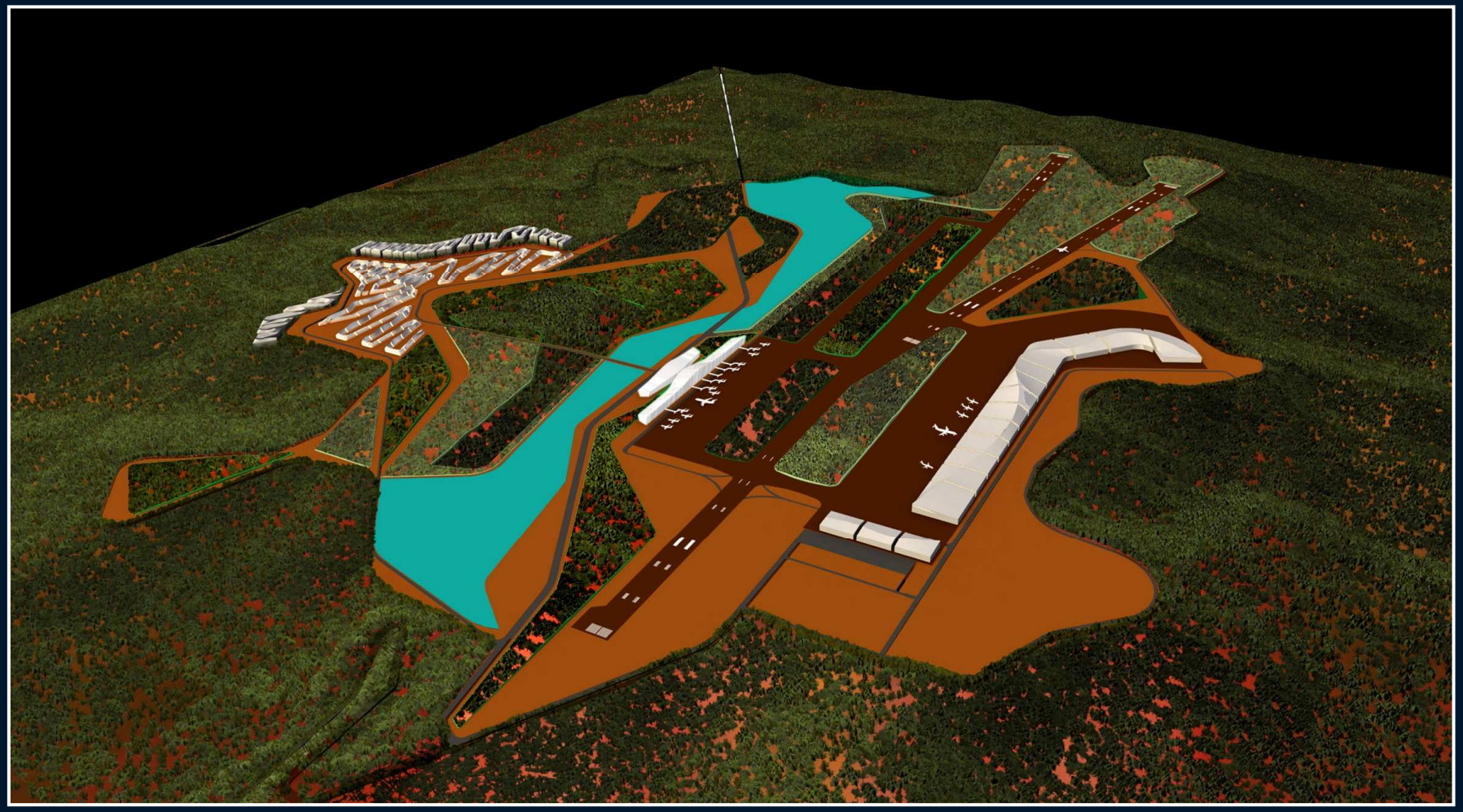
Mopa International Airport: Concept 'Green' Design



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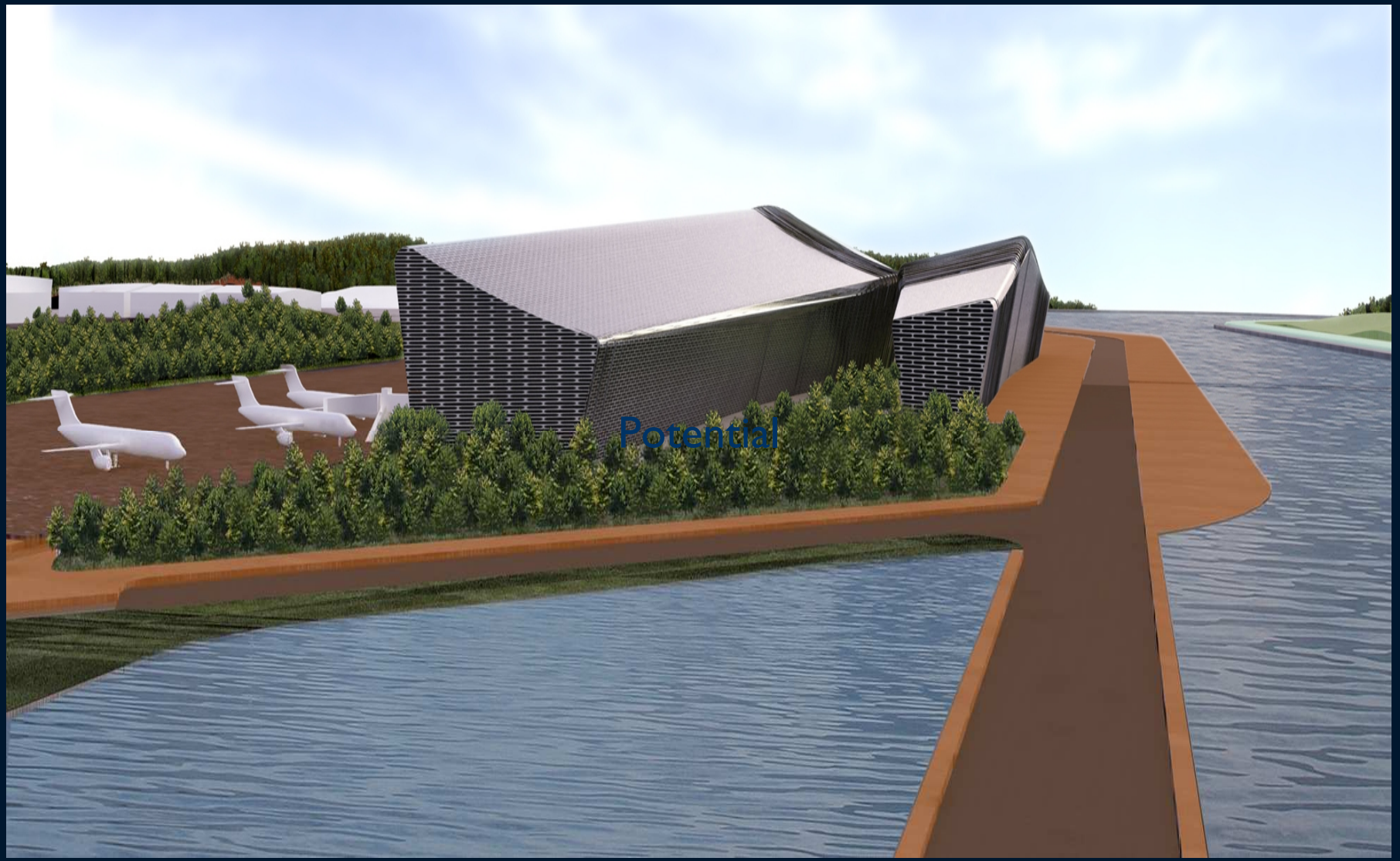
Mopa International Airport: Concept 'Green' Design



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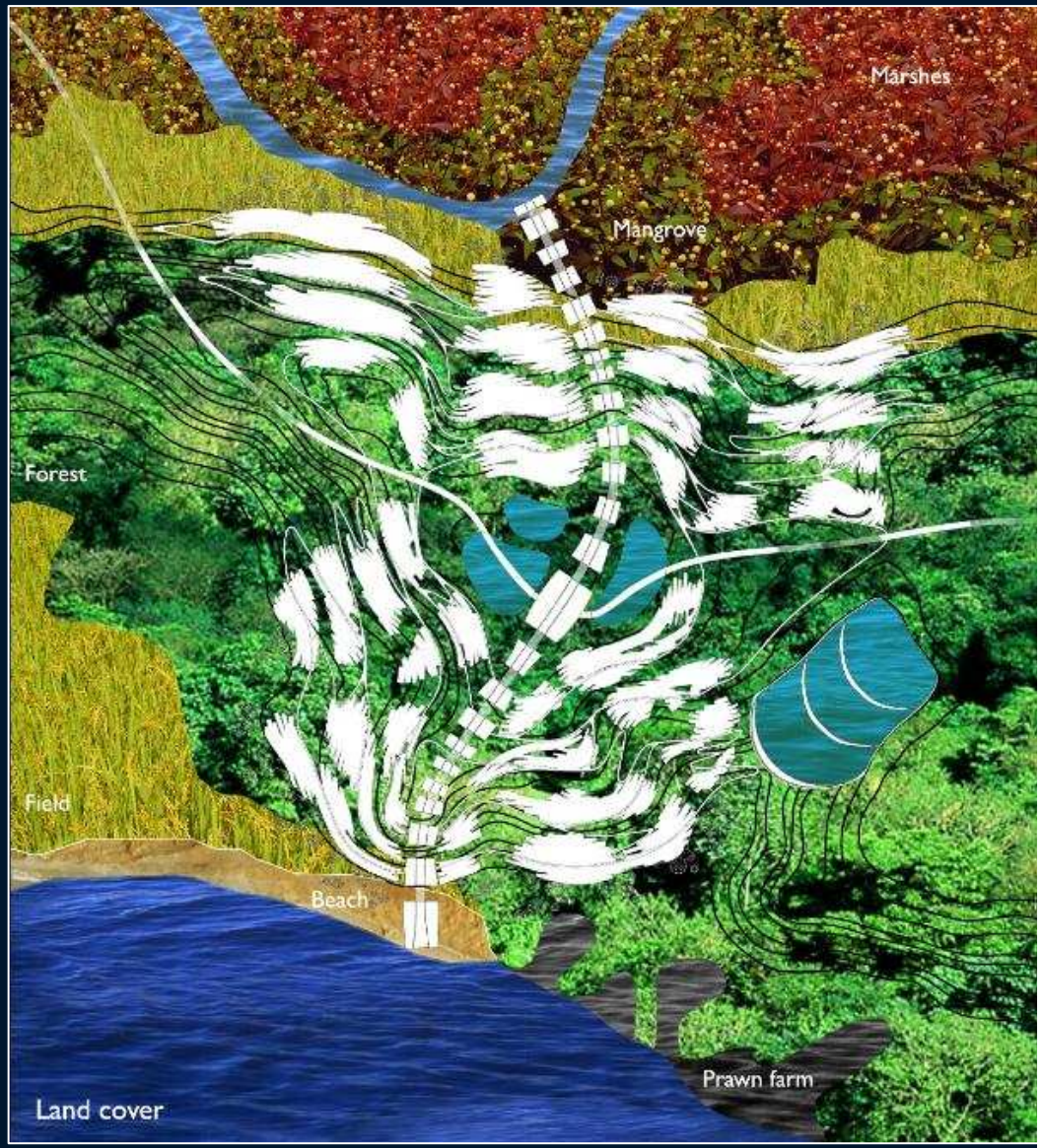
Nerul: Integrated Landuse Plan



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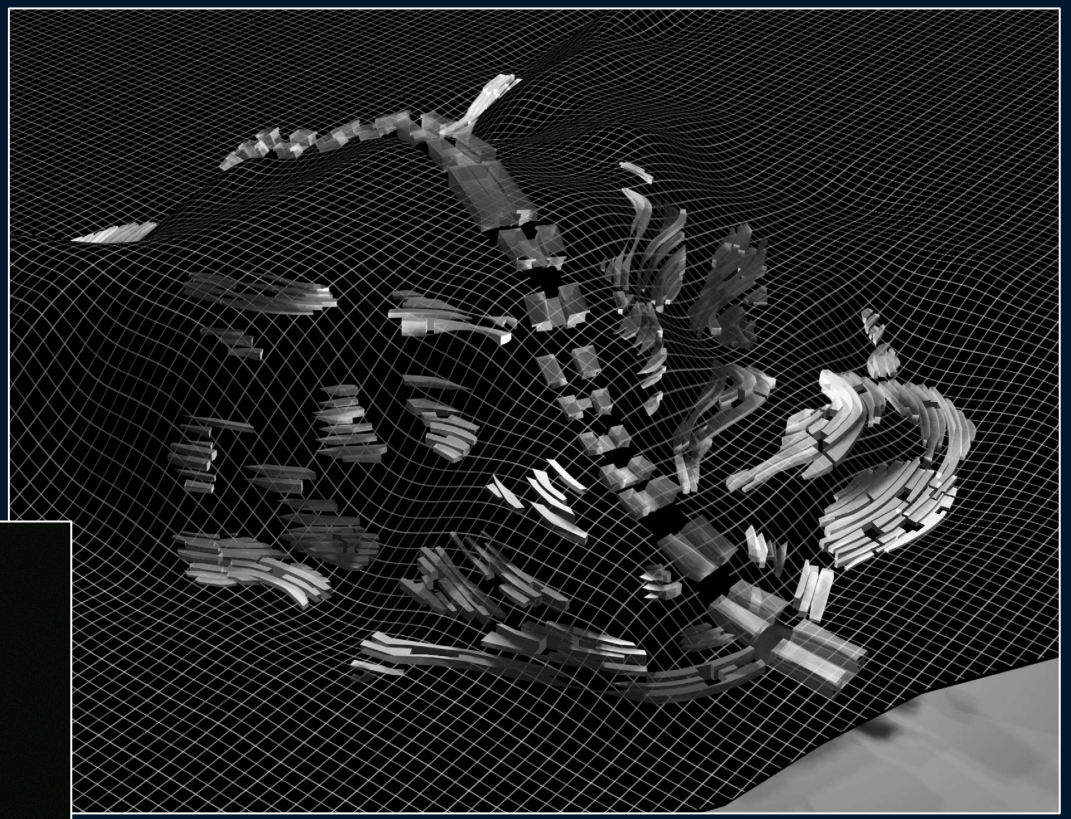
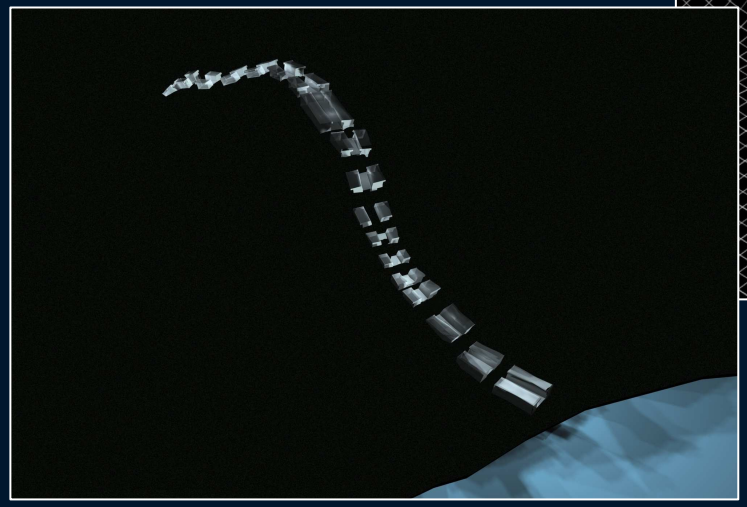
A new vocabulary for long-range *RUrban* planning

Urban Nucleus:
consolidated form
evolves from the
landscape





The Spine: the static element of the Nucleus

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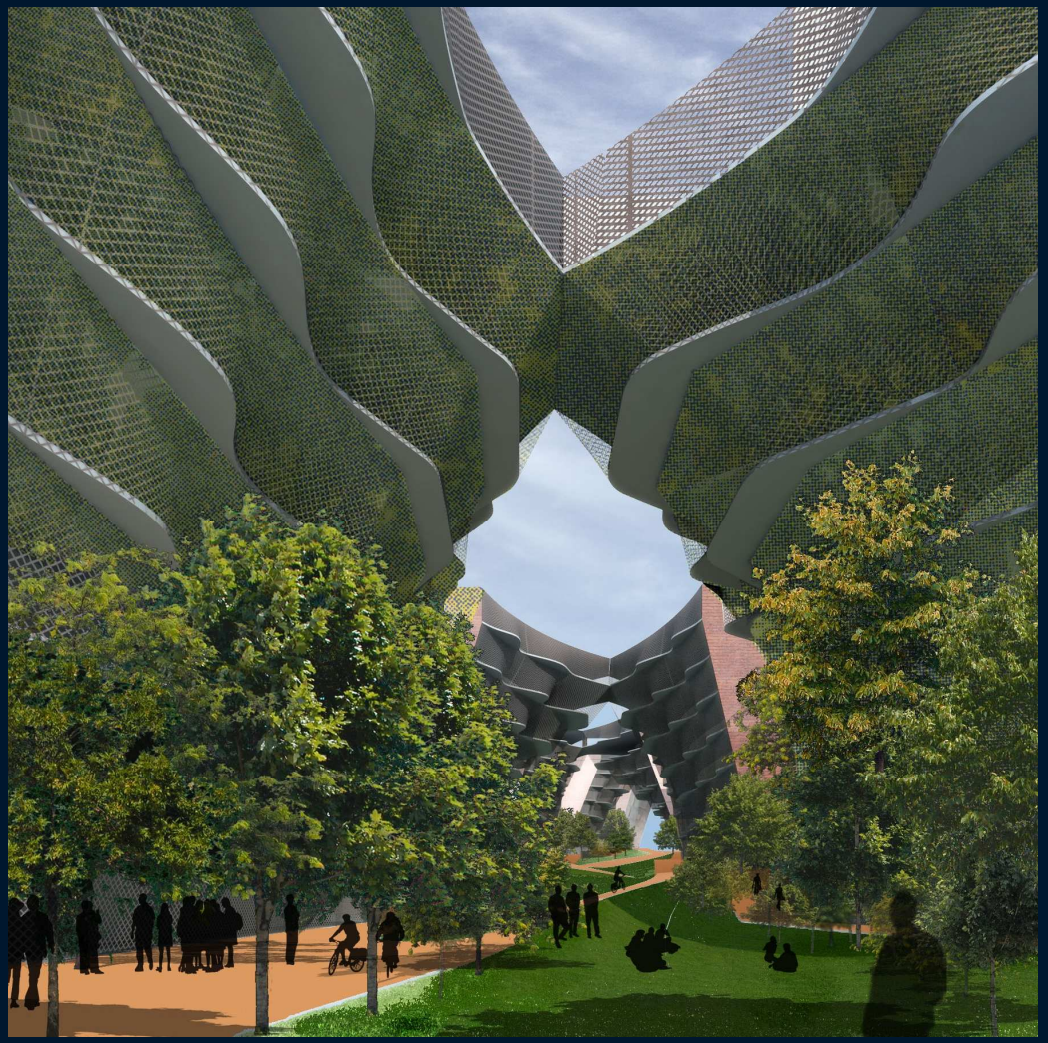
The Spine: the **static** element of the Nucleus

- Infrastructure carrier: energy, water, waste water
- Primary mobility corridor
- Clean manufacturing units
- Offices and commercial space
- Affordable housing



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Nerul ***RUrban*** Nucleus: a typical neighborhood

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Goa 2030: Broad-brush Investment & Implementation Plan

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Goa 2030: Financing & Implementation Plan

- Urban Element Life-cycle cost analysis
  - Estimates of life-cycle costs of over 125 different infrastructure and urban elements and services
- Implementation schedule
  - Phased implementation plan responding to infrastructure transitions and changes in demand for services
- Financing Plan
  - Broad-brush financing plan integrating all-up costs across key investing stakeholders, by urban system elements and investment phases
- Tests of Financial and Economic viability
  - Broad-brush break-even analysis for key elements
  - Projected levels of sector value added, savings and investable surplus

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Goa 2030: Sustainability Investment Plan (2005-2030)

The Sustainability transition is economically and financially viable within the following envelope:

- A 30-year transition to a service-sector dominated economy with low material-energy throughput
- High information and financial connectivity with other Tier 2/3 world cities
- Steady improvement in the quality of life, but voluntary restraints on unsustainable consumption combined with efficiency, dematerialisation and high savings rates
- An investment of about $ 15 to $ 18 billion over 30 to 50 years, financed by internal savings at household, communidade and Municipality (15% each), private investment (40%), national government (10%) using soft credit and innovative financing mechanisms e.g. CDM

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Panjim skyline in 2030 ?

Goa 2100 team

World Gas Conference

Amsterdam, 7th June 2006

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