

# Regional Scenarios Development and Analysis for the Indian Delta

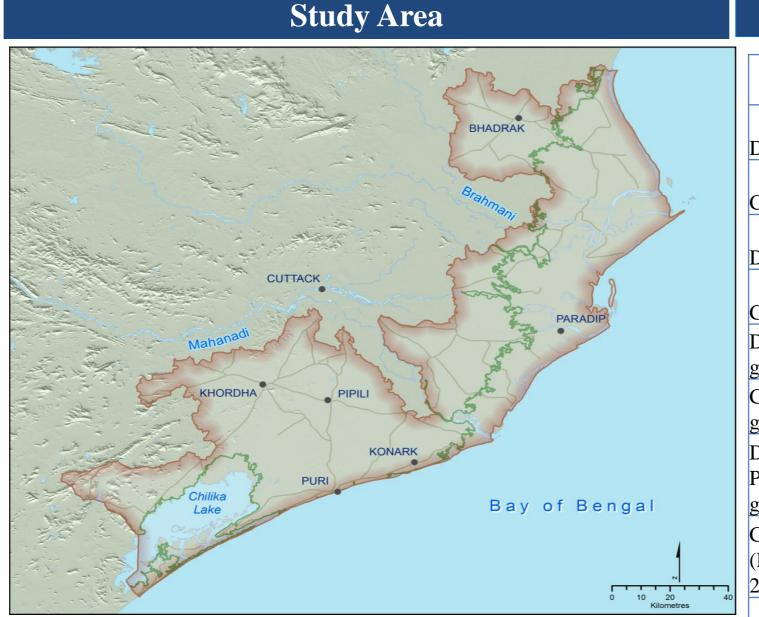
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## Introduction

- Scenario is basically a projection of future situation with the development pathways which leads to the possible future situation. Scenario cannot represent the real situation of future but can highlight the drivers of future situation.
- The aim of the study is to explain the process, issues and insights for the regional economic scenarios in India from the "Regional and National Experts Consultation on vision for the short-medium term future".
- The results of this consultation process are the basis for the regional scenarios of Mahanadi Delta, and the poster is also trying to find out the baseline/business as usual scenarios, and a range of likely futures, which need to be put in relation with the more general views about the future based on the country Shared Socioeconomic Pathways (SSP) scenarios.



The study was carried out at the Delta level in the 5 districts of Mahanadi Delta India using Regional and National Expert Consultation methodology.

		Variables	
	Delta_urban share	Delta_Industrial share in GDP	Delta_% of enrolment in Tertiary education
	Country_urban share	Country_Industrial share in GDP	Country_% of enrolment in Tertiary education
	Delta_population levels	Delta_Services share in GDP	Delta_levels of Female education enrolment
	Country_population levels	Country_Services share in GDP	Country_levels of Female education enrolment
	Delta_yearly nominal GDP growth	Delta_level of Labour wages	Delta_levels of inequality
	Country_yearly nominal GDP growth	Country_level of Labour wages	Country_levels of inequality
	Delta_yearly "real" (Purchasing Power Parity, from 2010) GDP growth	Delta_Capital income share (vs. the labour share)	Delta_agricultural land use quantities (1000 hectares)
7	Country_yearly "real" (Purchasing Power Parity, from 2010) GDP growth	Country_Capital income share (vs. the labour share)	Country_agricultural land use quantities (1000 hectares)
of	Delta_Agricultural share in GDP	Delta_% of enrolment in Secondary education	•
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**Methodological Framework** 

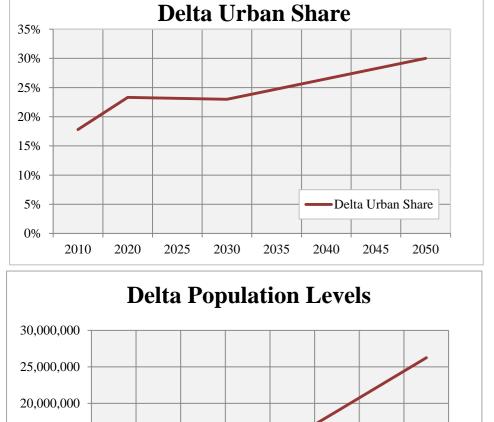
#### **Objectives of the Study**

To know the impact of climate change at the regional level or local level, climate change scenarios with fine tuned spacial resolution are very much important. Socio-economic factors like real GDP, Population growth, Urbanization, Educational Improvement etc are also the major factors to alter the climate change impact and adaptation measures. Since the coastal regions are highly populated and experiencing rapid changes and environmental pressures so it is very much needed for the policy makers to know the socio-economic factors and the scenarios for the next 50 years and how these factors are affecting the impact of climate change and adaptation measures. The study has undertaken to assess the probable (according to experts views) socio-economic scenarios for the Mahanadi Delta which may affect climate change outcomes.

#### **Figure: Scenario Development Process** Storyline • Referen Quality Short • Impact Population ce from Consist on socio levels Researc Mediu economi · Share of GDP hers c factors • Identifi growth • Long Education cation term of enrollment

#### (Preliminary) Results and Discussion

**Country Urban Share** 



2025 2030 2035

**Delta\_yearly nominal GDP growth** 

2030

**Delta\_% of enrolment in Secondary** 

education

2035

Delta Population Levels

—Delta\_yearly nominal GDP growth

Delta % of enrolment in Secondary education.

15,000,000

10,000,000

5,000,000

4%

1,200

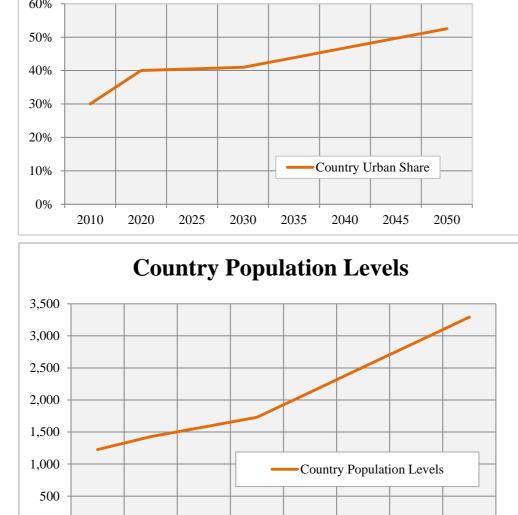
1,150

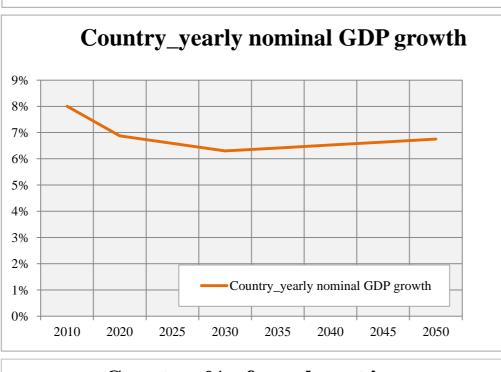
1,100

1,050

1,000

950



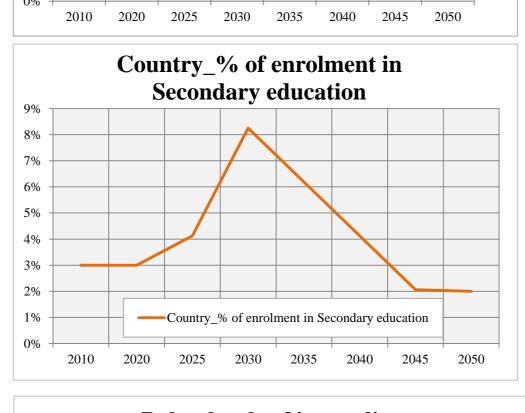


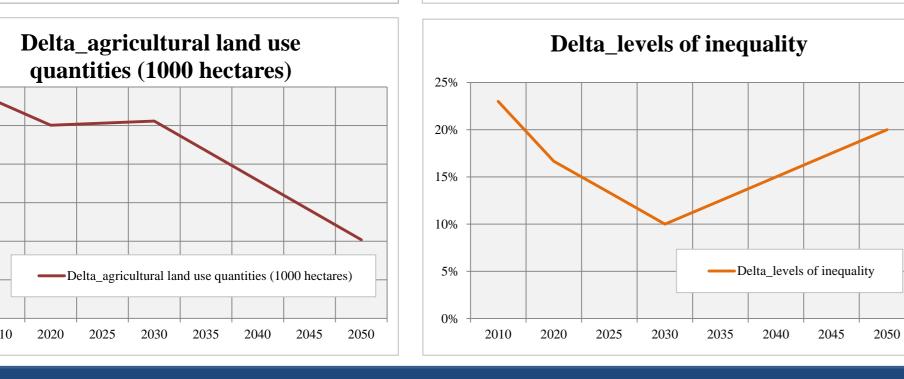
2025

2030

2035

2040

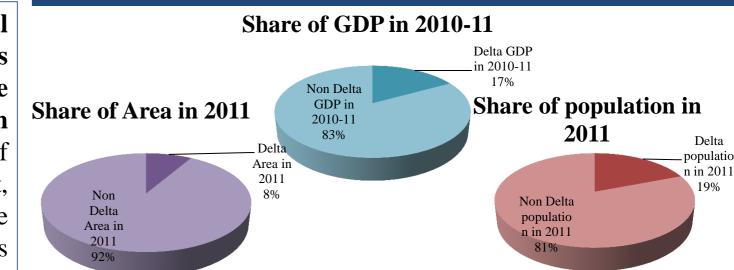




In the pathways of overall coastal socio economic scenario, the factors are not significantly shifted from the historical pattern or overall Indian pattern. Due to continue occurrence of natural calamities in the Odisha Coast. Economic development and income growth in the Mahanadi delta continues irregularly and local level institutions are not able to achieve the sustainable development goals but the fossil fuel dependency has been reduced in few parts of the delta (census 2011).

The moderate population growth in the delta is showing the significance of demographic transition. On the other hand the declining percentage of enrollment in the tertiary education means the demographic transition will hamper and as a consequence the economic development of the delta will also hamper. Moderate population growth with high income inequality in the delta increases the divisional layer in the social groups as well as in the income groups. This is the major challenge in the social development and in the reduction of (economic/social) vulnerability at the regional/local level which would lead to challenges in the adaptation and mitigation activities.

# Situation of Mahanadi Delta with respect to India

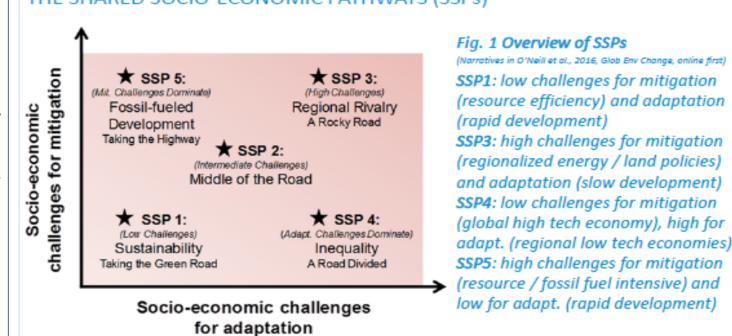


#### **Concept of Shared Socio economic Pathways**

THE SHARED SOCIO-ECONOMIC PATHWAYS (SSPs)

Inequality

Experts



- There should be a space for policy-relevant scenarios.
- Pathways have to be developed for mitigation and adaptation with different socio-economic challenges.
- SSPs must relate with previous GHGs emissions scenarios (RCPs) and climate projections (CMIP5) for continuous transition of impacts, adaptation, vulnerability (IAV) analysis
- Basic SSPs consist with the narration of broad characteristics of future projections of population level, GDP growth, urbanization, education etc. (Keywan Riahi)

#### **Conclusion**

The perception of the experts seems to follow the received wisdom on stages of economic growth pattern that India has been experiencing, viz., the growth of tertiary sector bypassing the growth of industrial sector in terms of share of GDP and the delta is not expected to follow a different pattern. Common views are general expected increases in most of the variables questioned about (noticed that some graphs are horizontal bars, but they refer to % growth, e.g. for GDP), except for the expected maintenance of agricultural land use quantities, of the Capital/labour income share, and (only in some

### References

responses, in others we find the opposite) declining levels of inequality.

- O'Neill, B., Kriegler, E., Riahi, K., Ebi, K.L., Hallegatte, S., Carter, T.R., Mathur, R., van Vuuren, D.P., 2014. A new scenario framework for climate change research: the concept of shared socioeconomic pathways. Clim. Change 122, 387-400.
- Van Vuuren, D.P., Kriegler, E., O'Neill, B.C., Ebi, K.L., Riahi, K., Carter, T.R., Edmonds, J., Hallegatte, S., Kram, T., Mathur, R., Winkler, H., 2014. A new scenario framework for climate change research: scenario matrix architecture. Clim. Change 122, 373–386

Keywan Riahi, Detlef P. van Vuuren, Elmar Kriegler, Brian O'Neill; Shared Socio-Economic Pathways

- (SSPs): An Overview, presented at IIASA workshop, https://unfccc.int/files/science/workstreams/research/application/pdf/part1\_iiasa\_rogelj\_ssp\_poster.pdf

This work was carried out under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA), with financial support from the UK Government's Department for International Development (DFiD) and the International Development Research Centre (IDRC), Canada. The views expressed in this work are those of the creators and do no necessarily represent those of DFiD and IDRC or its Board of Governors.

