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Possible Contribution to the COE Strategy from Center for Spatial Information Science (CSIS), University of Tokyo

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Contents

- CSIS's collaborations with ADB
- CSIS's technologies for energy sector

*CSIS: Center for Spatial Information Science, the University of Tokyo

Our Collaboration with ADB

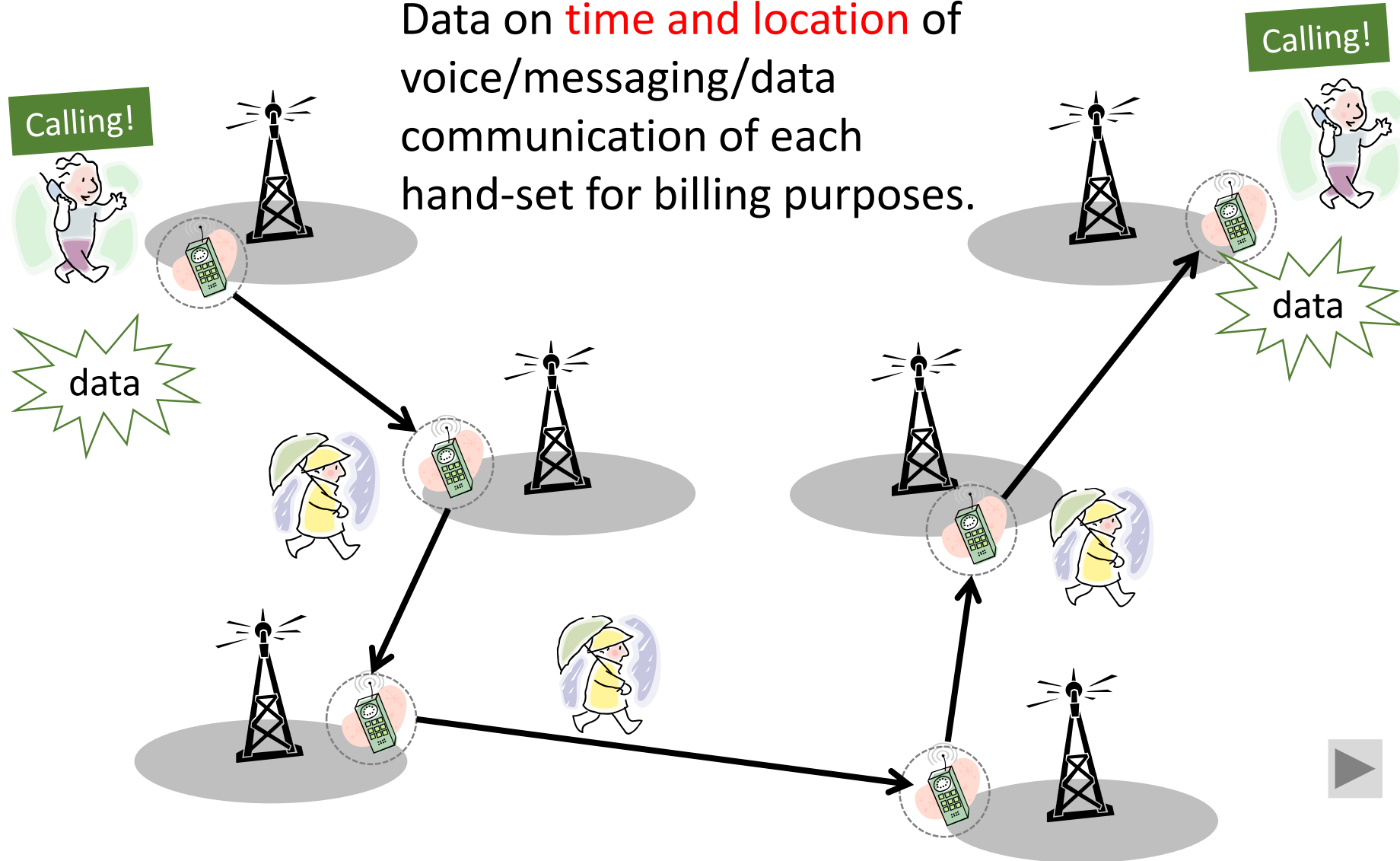
- Secondment to ADB HQ since 2012
 - **Promotion** of geospatial technology and space technology in ADB
 - **Support** in applications of geospatial technology and space technology in ADB's operations.
 - **Create innovations** using geospatial technology and space technology
- Close collaboration from knowledge exchange to project implementation in **various sectors/themes.**

Examples of Our Technology for Energy Sector

- People mobility data from mobile phones
 - Earth observation of socioeconomics and energy
 - Analysis and management of geospatial information/data
- Support in planning, monitoring, and decision making by geospatial information technology.

CDR(Call Detail Record) data

Data on **time and location** of voice/messaging/data communication of each hand-set for billing purposes.

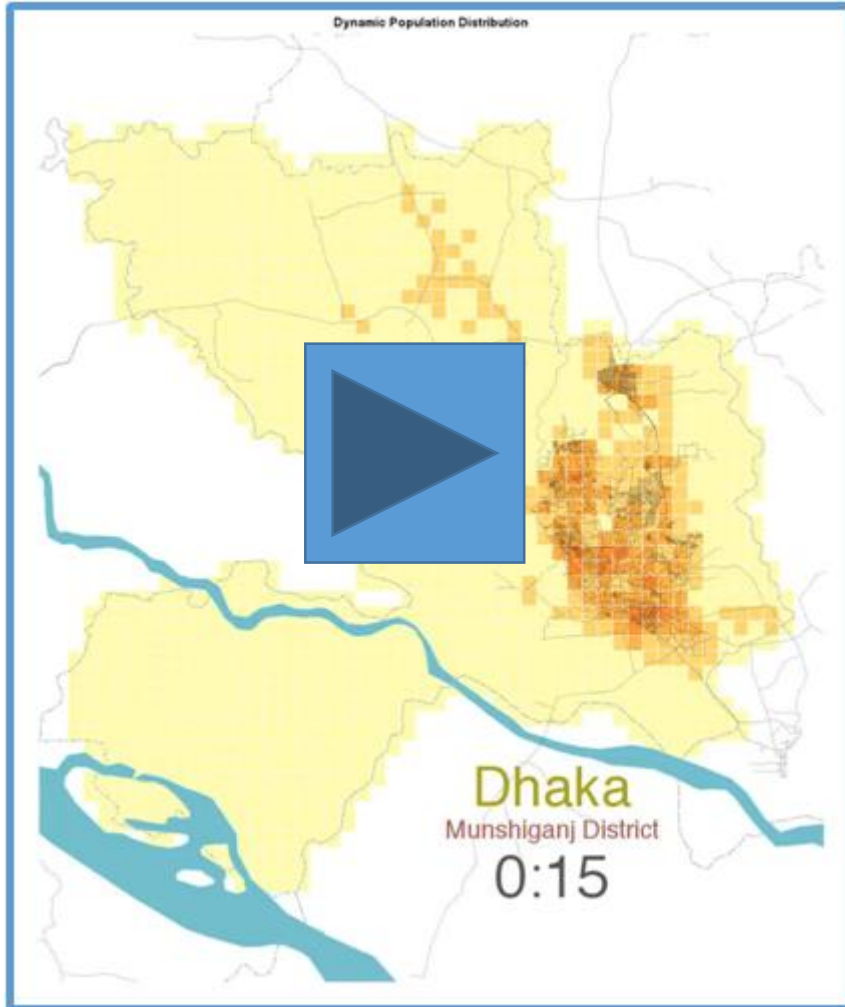


People mobility in a day in Dhaka, Bangladesh



Applications of People Mobility Data

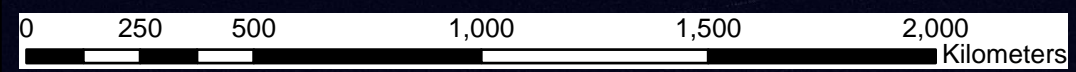
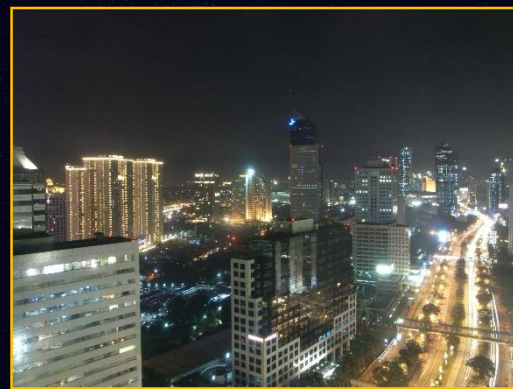
Estimating/predicting population dynamics for energy demand response



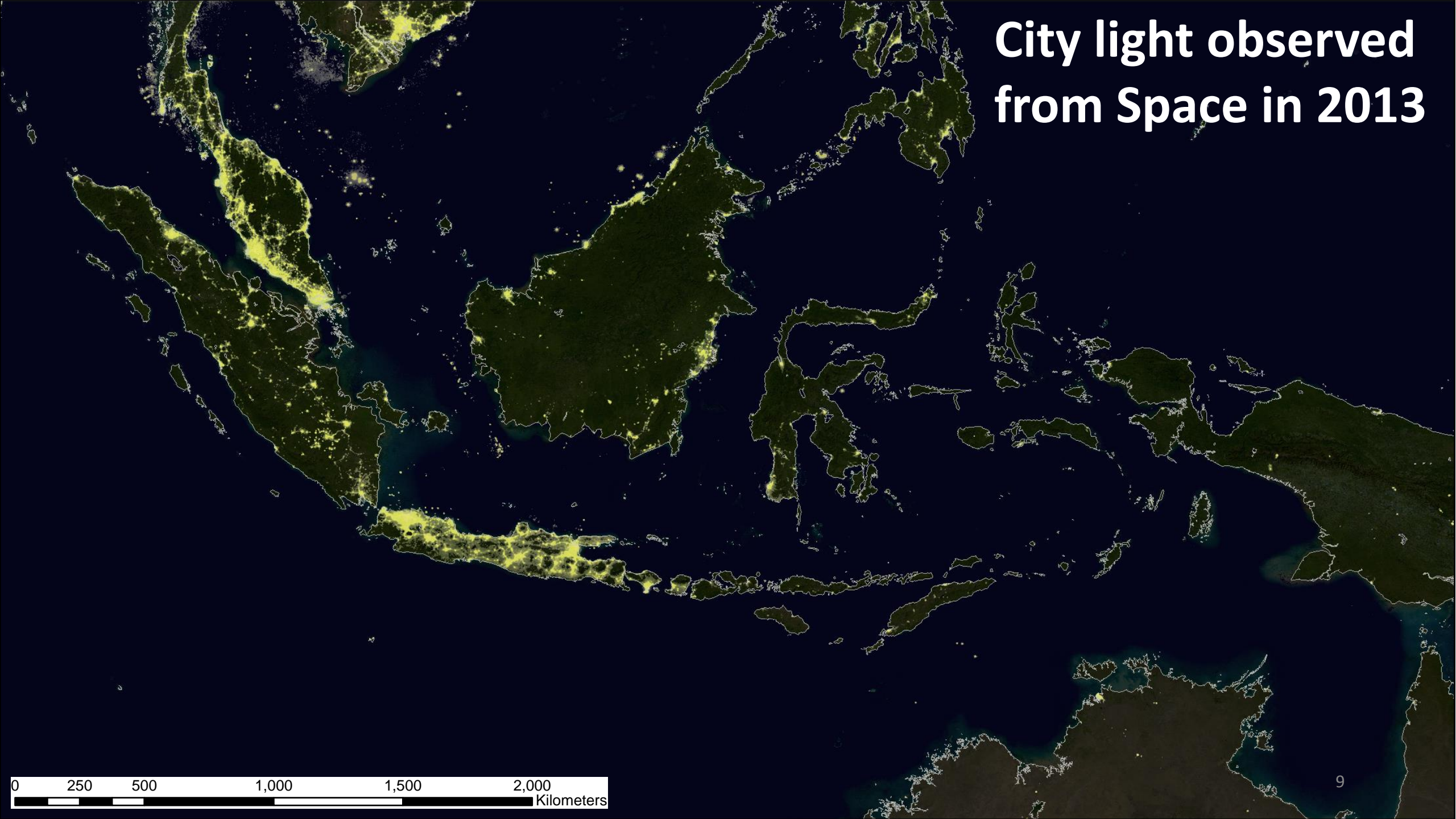
Seasonal & long-term nationwide people's migration



City light observed from Space in 1992



City light observed from Space in 2013

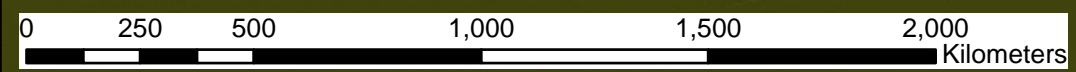
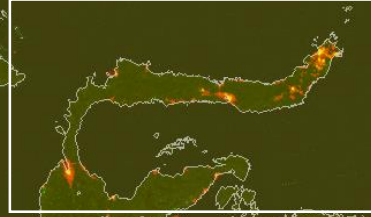
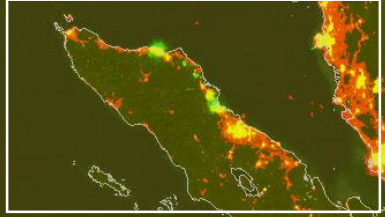


0 250 500 1,000 1,500 2,000 Kilometers

Growth from 1992 to 2013

Yellow: strong in both of 1992 & 2013

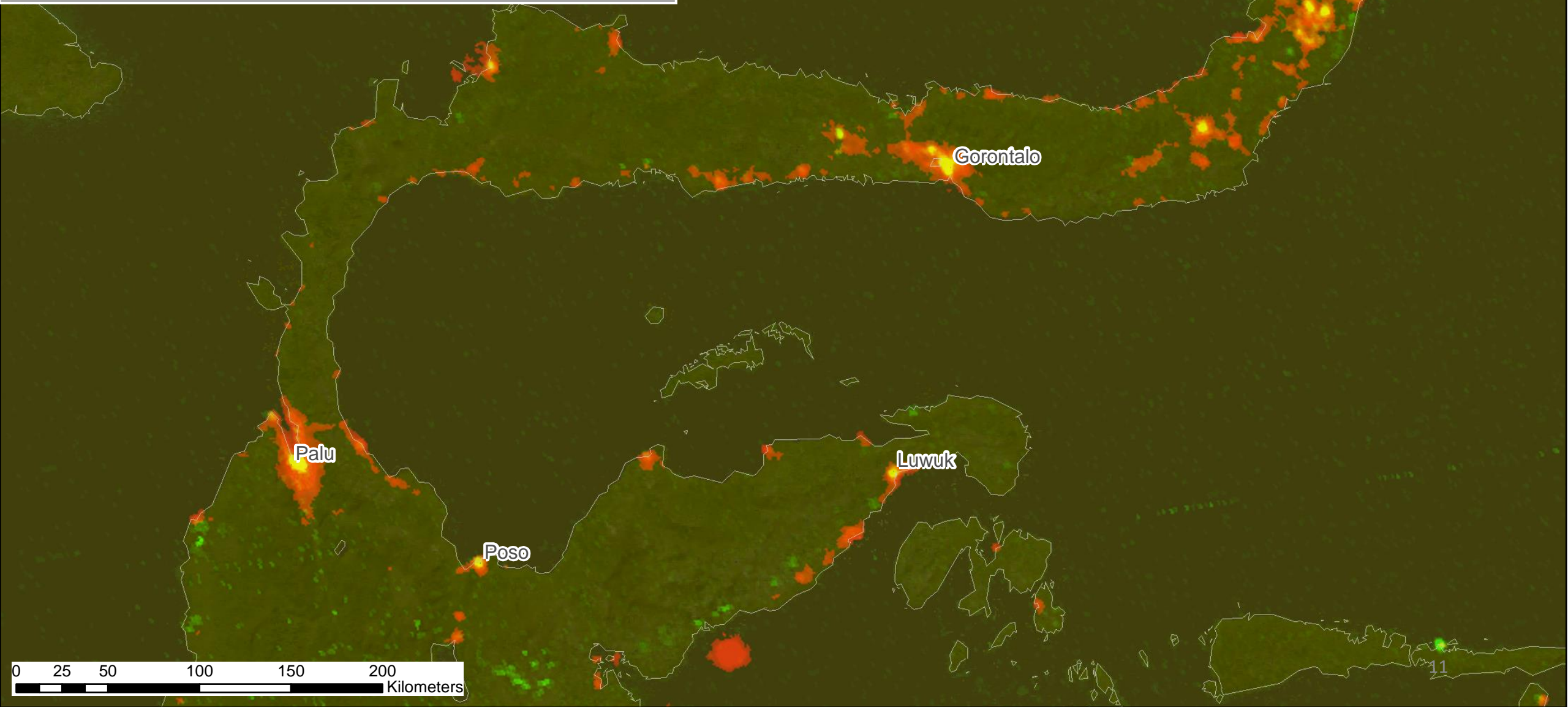
Red: Growth from 1992 to 2013

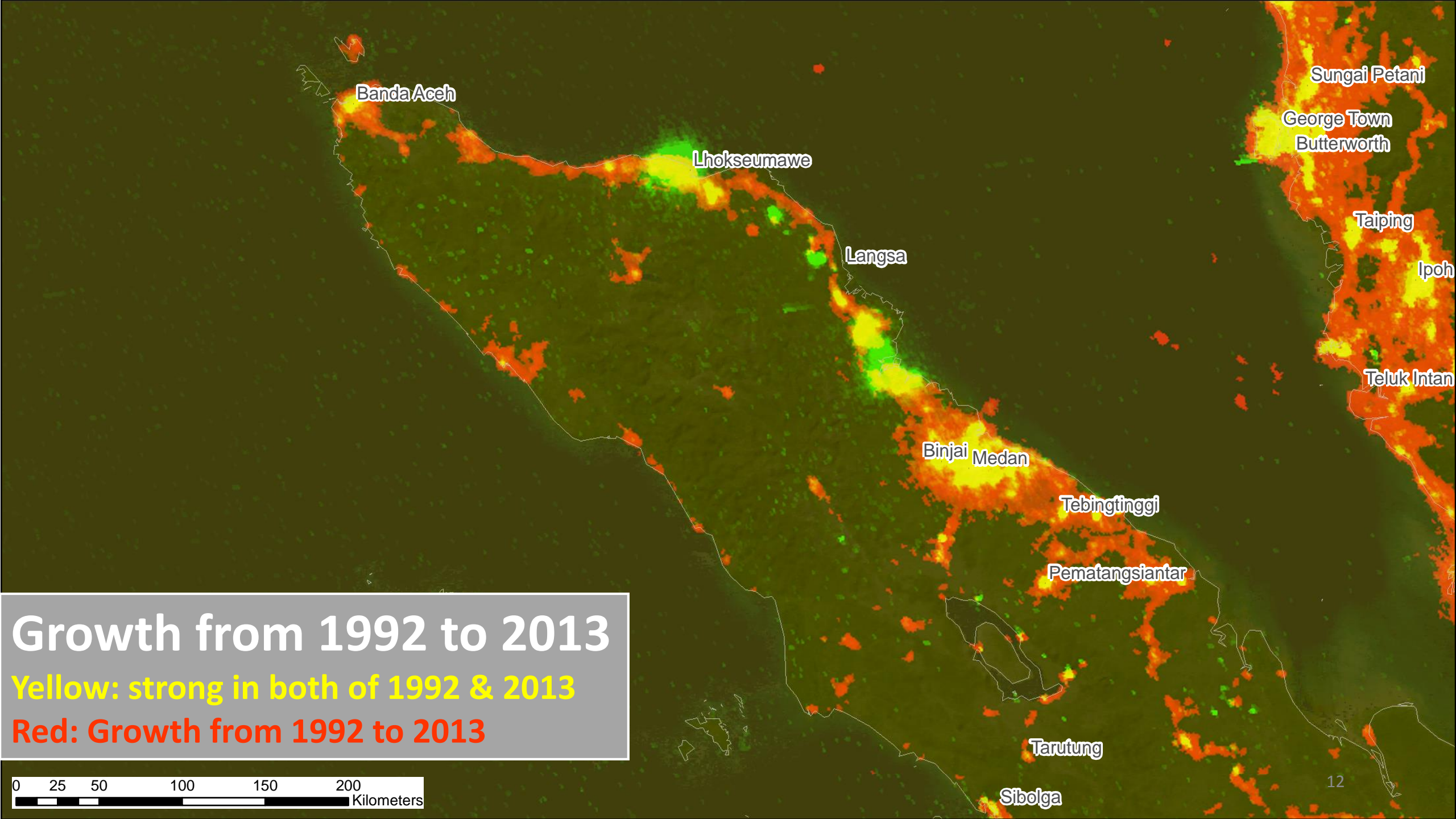


Growth from 1992 to 2013

Yellow: strong in both of 1992 & 2013

Red: Growth from 1992 to 2013





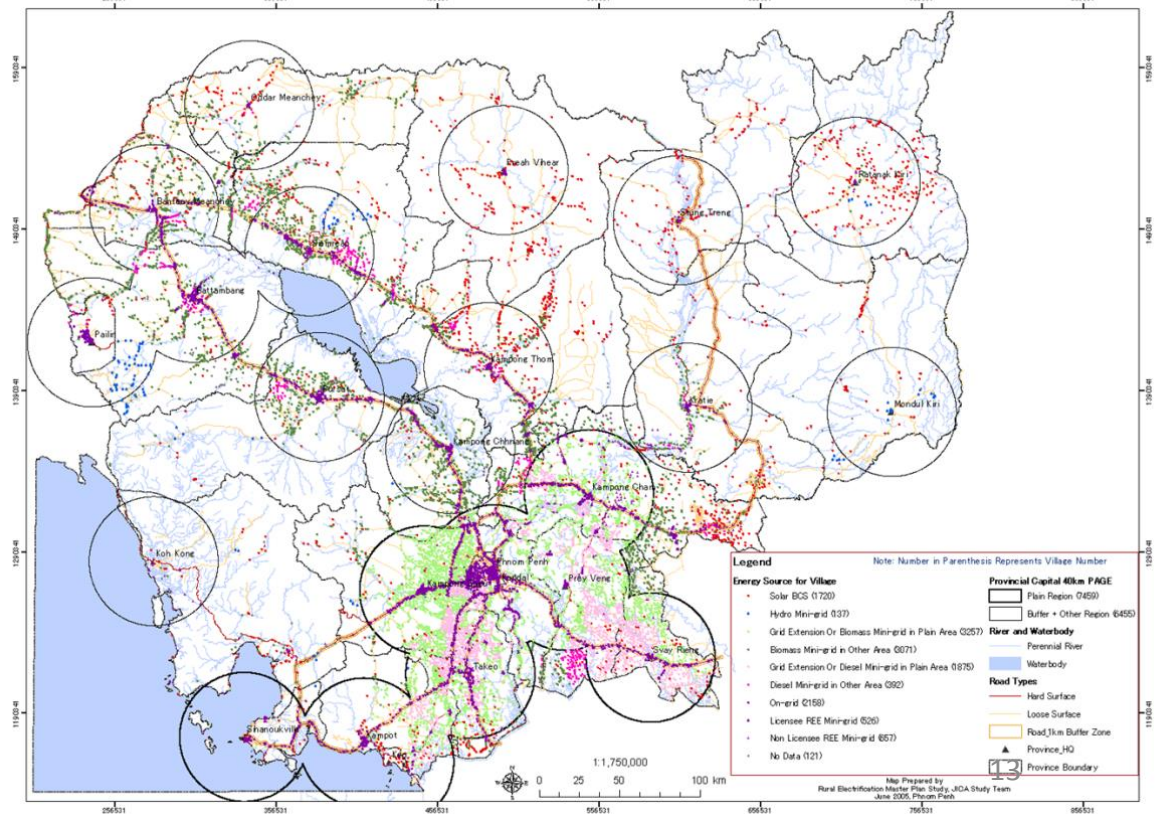
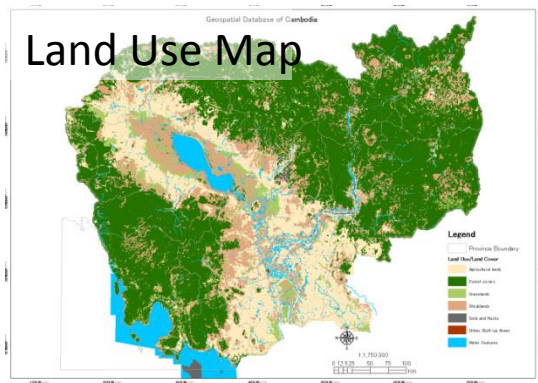
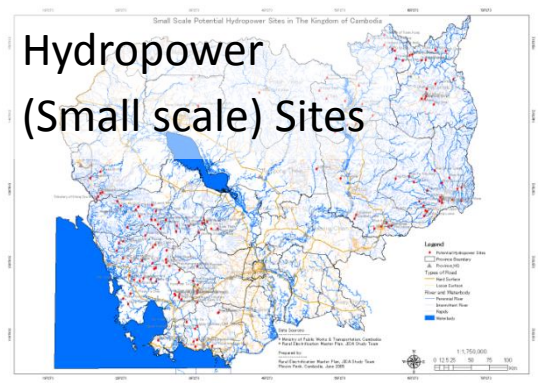
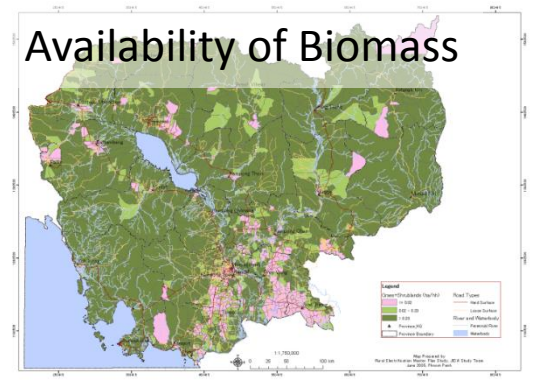
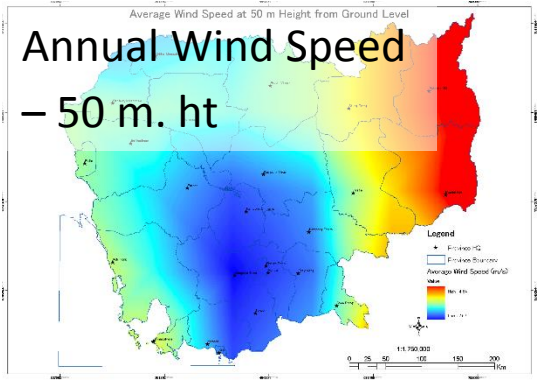
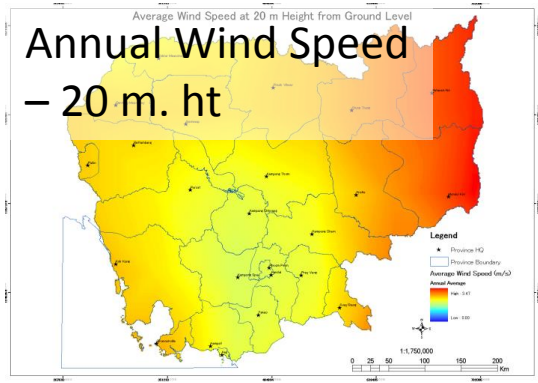
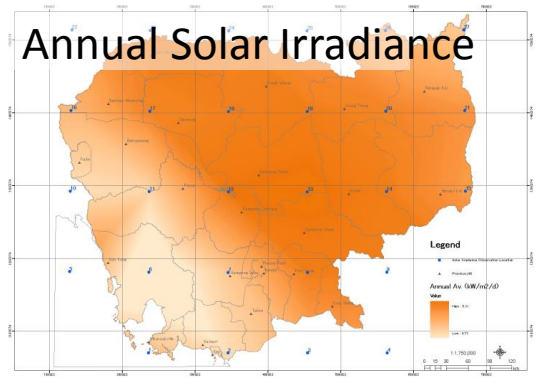
Growth from 1992 to 2013
Yellow: strong in both of 1992 & 2013
Red: Growth from 1992 to 2013

0 25 50 100 150 200 Kilometers

Analysis & management of geospatial information & data

Integration by geographic information system (GIS)

Energy mix planning for on/off-grid electrifications



Our Technology for Energy Sector

- People mobility data from mobile phones
 - Earth observation of socioeconomics
 - Analysis and management of geospatial information/data
- Support in planning, monitoring, and decision making by geospatial information technology... and **new innovations by collaborations through the COE!**