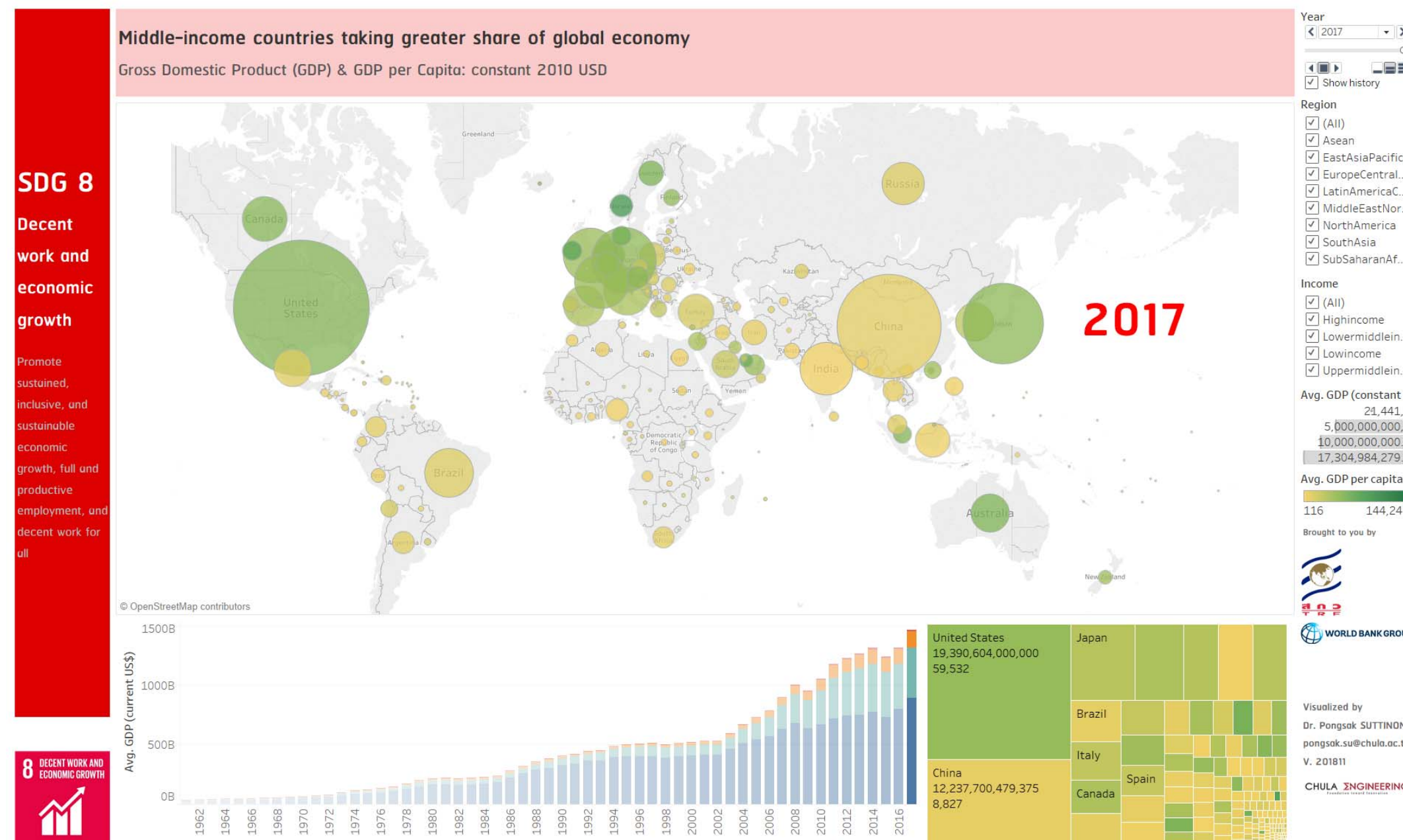


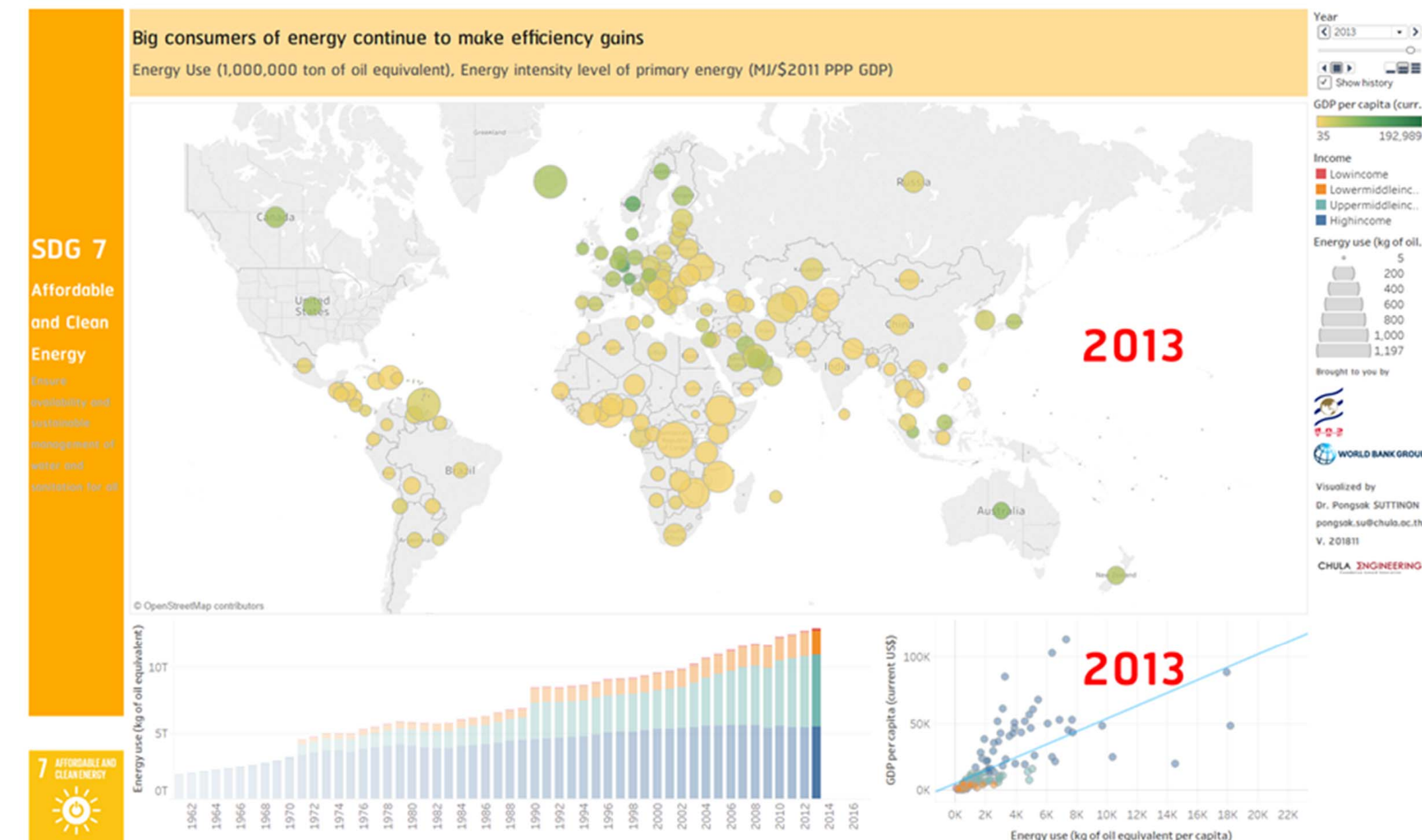
Water-Energy-Food NEXUS for Socio-Economic Development: Case of Thailand

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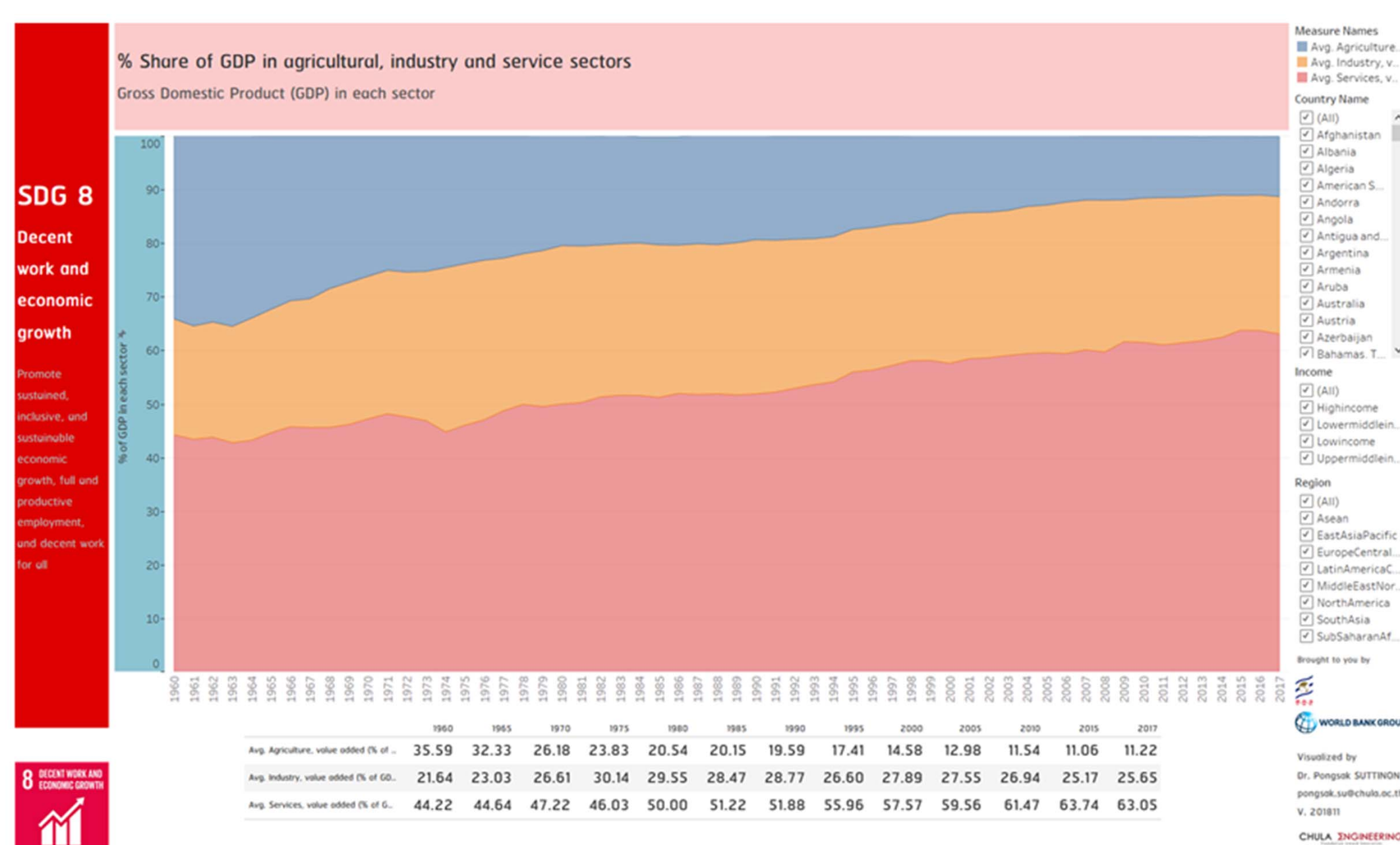
Why WEF NEXUS? Rapid urbanization in our world with regional socio-economic development is vulnerable under resource scarcity. Water, energy and food/land are essential to meet these demands. It is certain that all resources are also intensifying vulnerabilities to future demands. The “Water-Energy-Food NEXUS” approach aims to link socio-economic development and management of water, energy, and food securities by minimizing co-trade-off and optimizing co-benefit. **“Data-Driven-Decision”** is the main issue to support policy makers, developing database for synergies.



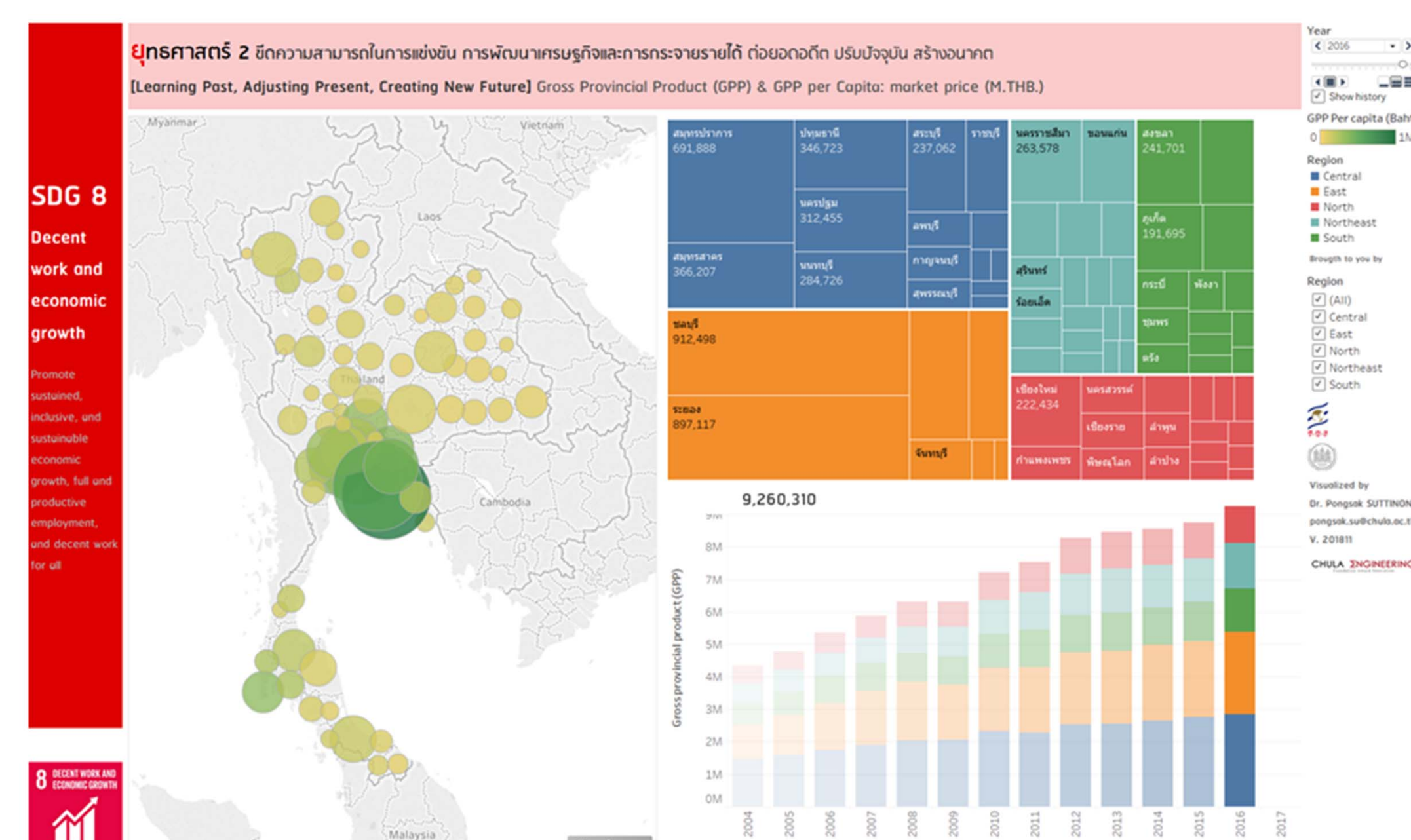
Development of Thailand in the world: Asian Development Bank concluded that “Asia’s march to prosperity will be led by seven economies, two of them already developed and six fast growing middle income converging economies: PRC, India, Indonesia, Japan, Republic of Korea, Thailand and Malaysia” especially in socio-economic terms.



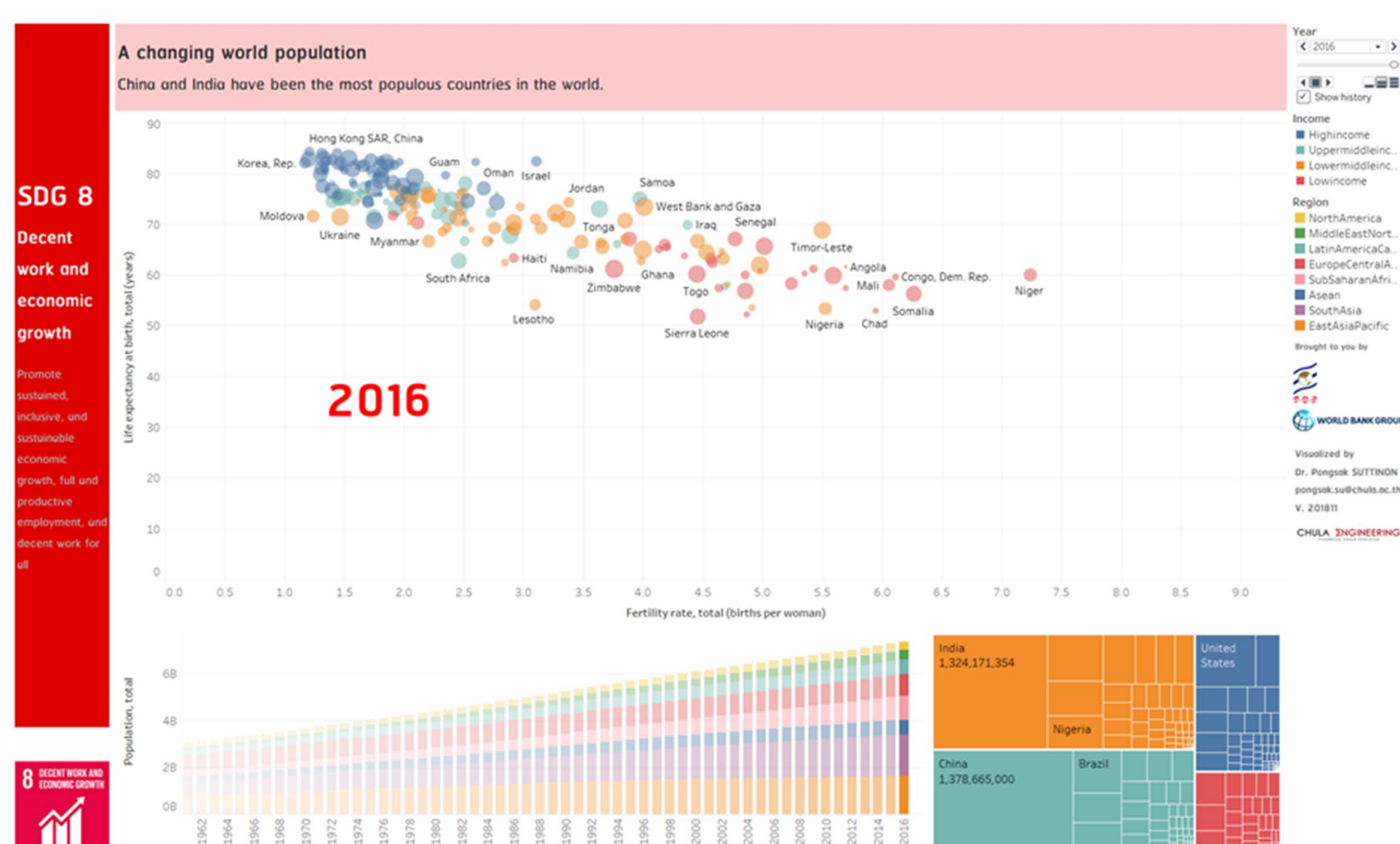
Energy intensity
Energy is the same trend as water issue. High-income country always consumes greater water use per capita. If Thailand would like to be developed country in the near future. We should carefully consider how to manage water, energy, and land in a sustainable way.



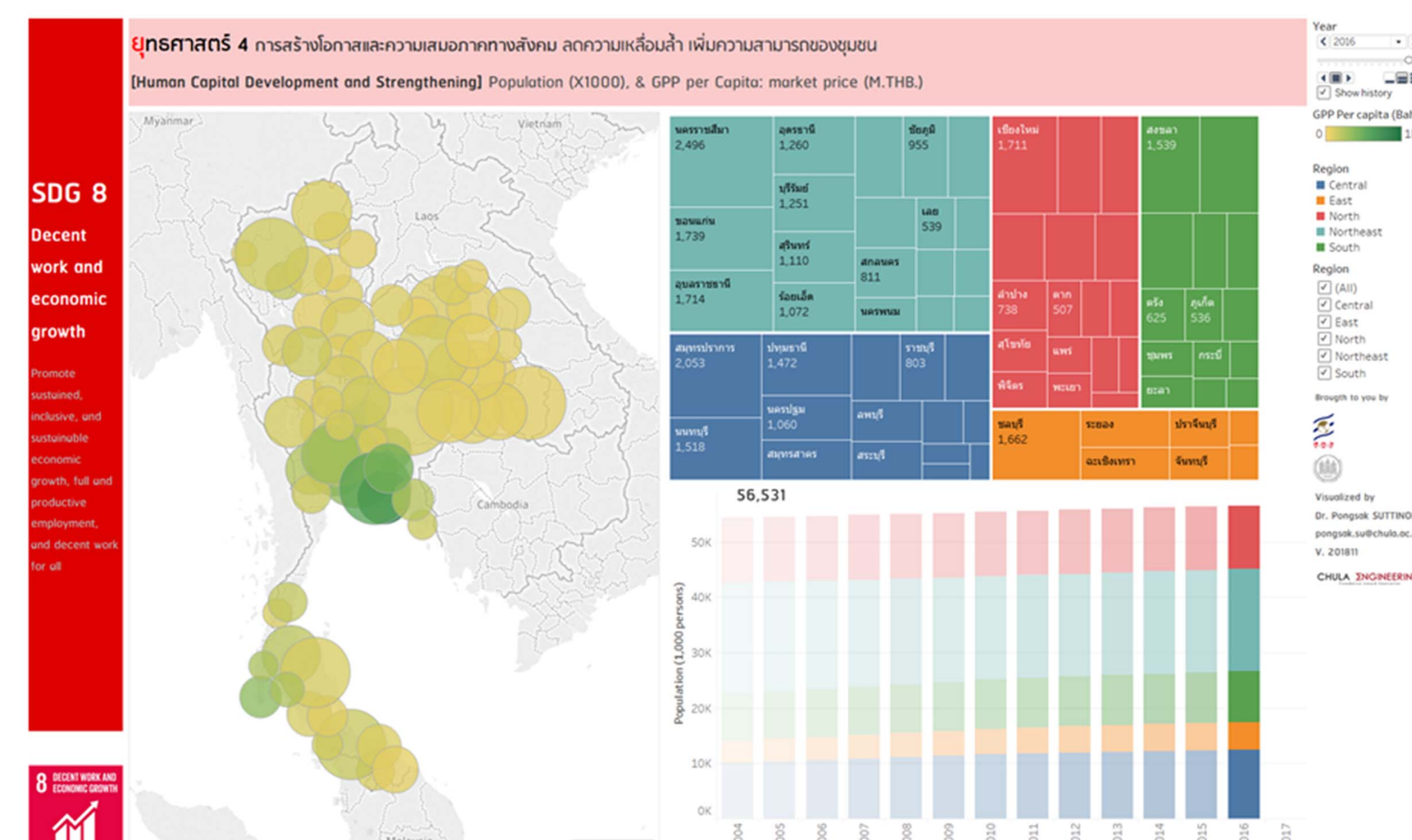
Economic structural change
Change of economic structure from the past to present shows that percentage of GDP in agricultural sector is decreasing and service sector is increasing. Thailand is also changing with this trend under concerns of water, energy and food security.



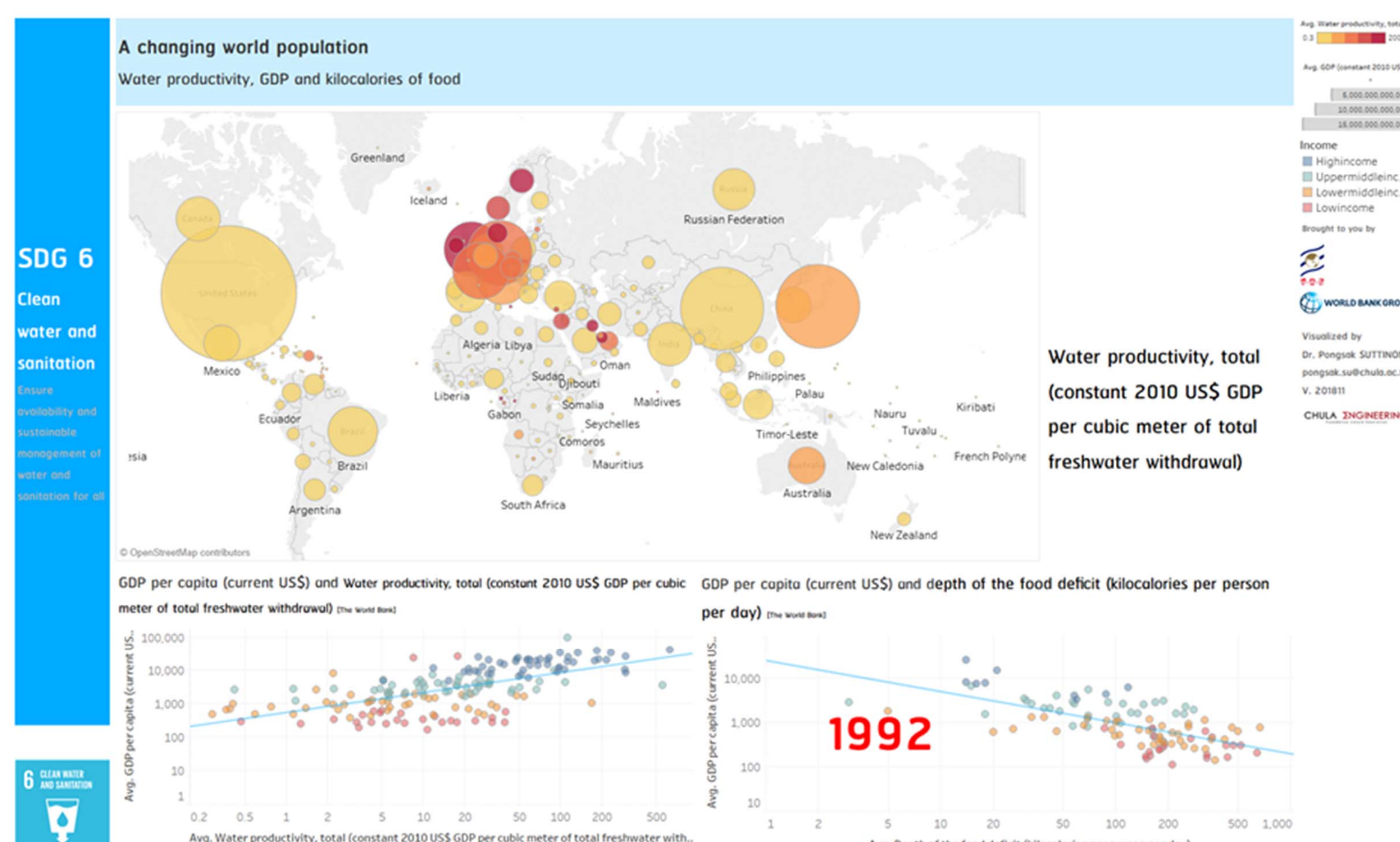
Security in Local level
Socio-economic development in each province
For local scale in Thailand, gross provincial product (GPP) and GPP per capita are considered from the past. It is certain that we are growing to be one of developed country in the near future based on national long-term strategy. However, income gap between urban and rural is also expanding. Urbanization may make an inequality issue.



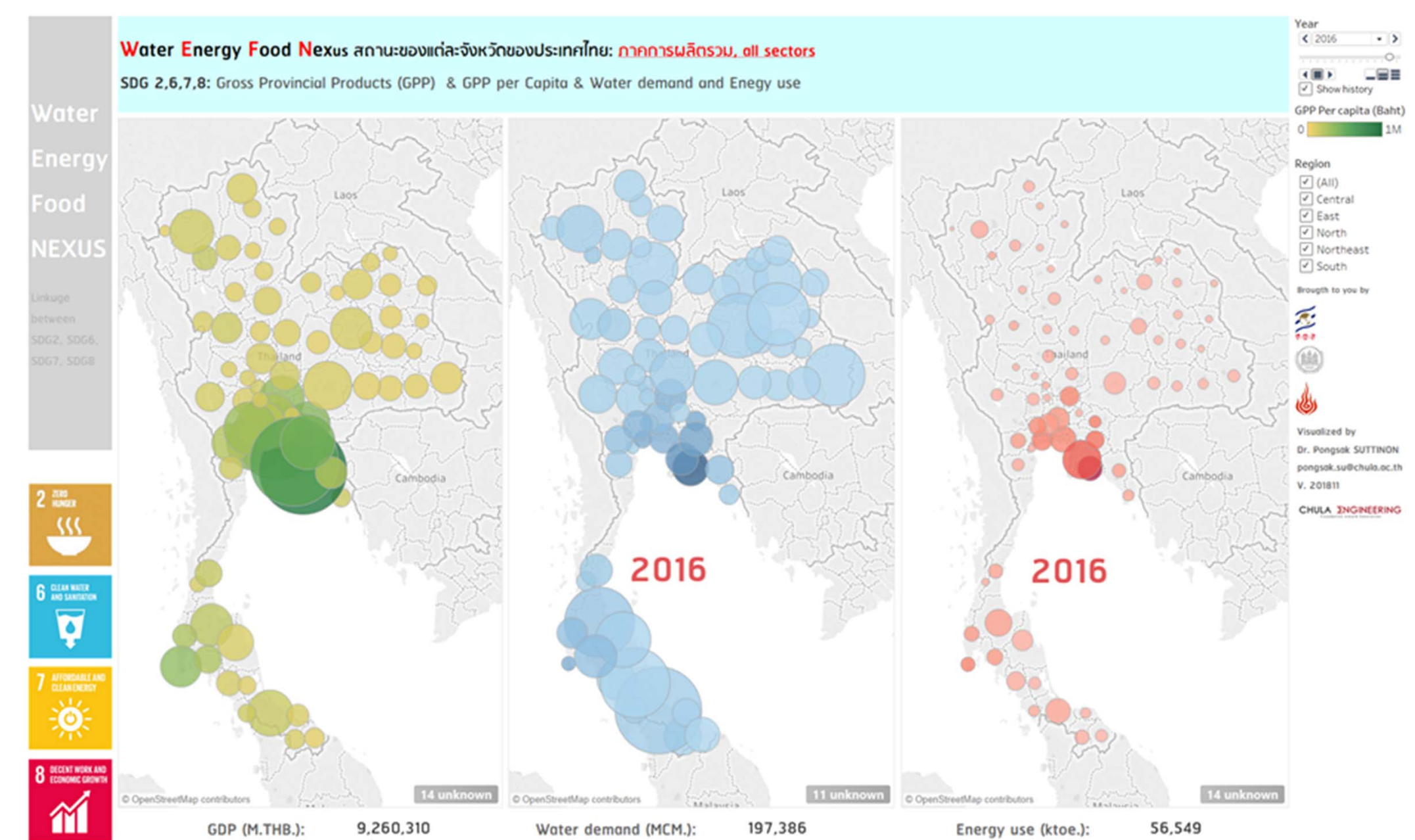
Population change
Ageing society is one of megatrends in our world. Reducing fertility rate with increasing life expectancy are mainly illustrated for all high-income, middle-income and low-income countries.



Population change
Number of populations in Thailand is still growing with slower rate. National Economic and Social Development Board concludes that ageing society will be an important issue in the near future.



Water productivity
High-income country needs more water use per capita to meet socio-economic development. Water productivity is a key success for developing economy under limitation of water supply in terms of quantity and quality.



Linkage of socio-economic, water, and energy
Water-Energy-Food/Land NEXUS illustrated how all resources are managed to meet the past development. In the near future, greater productivity and linkage of each resource to socio-economic development is the main issue for policy makers in each level from central government with policy to local community with implementation.

Conclusions and recommendations

The “Water-Energy-Food NEXUS” is an approach to link socio-economic development and management of water, energy, and food securities by minimizing co-trade-off and optimizing co-benefit. For economic development and urbanization, Thailand needs database and management tool that can integrate socio-economic development and resources.

Acknowledgements

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