

BASIN CONDITIONS, TRENDS AND LONG-TERM OUTLOOK

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Dr. Thim Ly, Chief River Basin Planner, MRCS



Basin Conditions, Trends and Long-Term Outlook

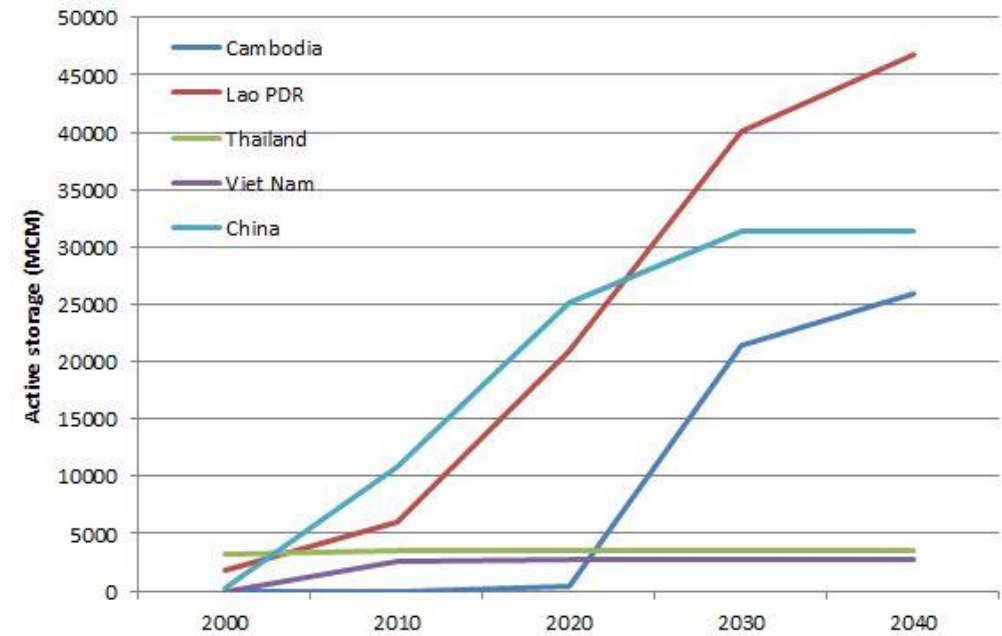
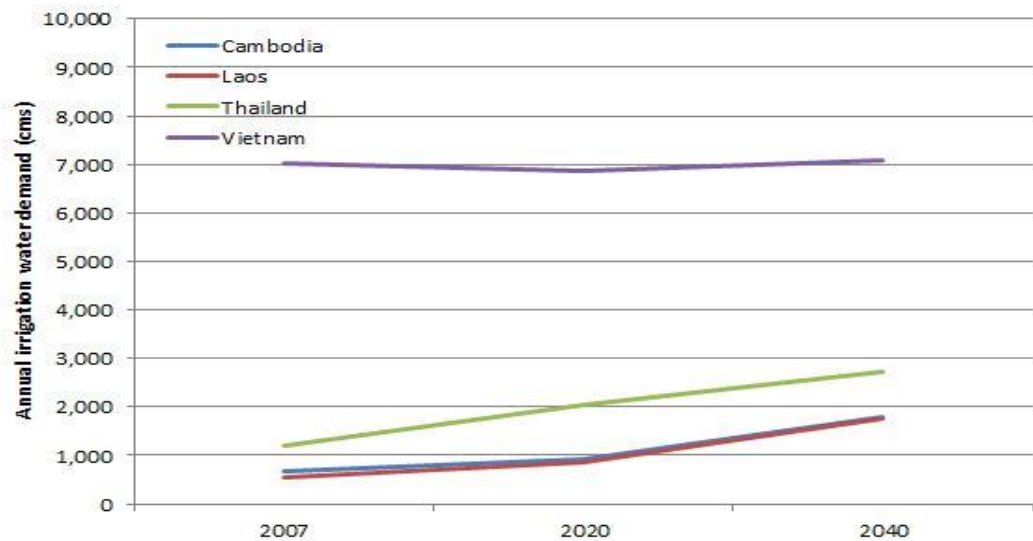
- Is Chapter 2 of the draft Basin Development Strategy
- Developed based on
 - The State of the Basin Report 2018
 - Scenario assessments of cumulative national plans
- Covers the whole Mekong Basin (including UMB and LMB)
- Supplements with additional data from international organisations, i.e. projections from the Asian Development Bank and the International Energy Agency
- **PURPOSE:** to provide a basis for the identification of strategic needs, development opportunities, risks and challenges in Chapter 3

Structure of Chapter Two

1. Water resources development and management
2. Economic, social, environment and climate change trends and long-term outlook
3. Regional cooperation and integration
4. Progress towards achieving relevant Sustainable Development Goals

Water Resources Development

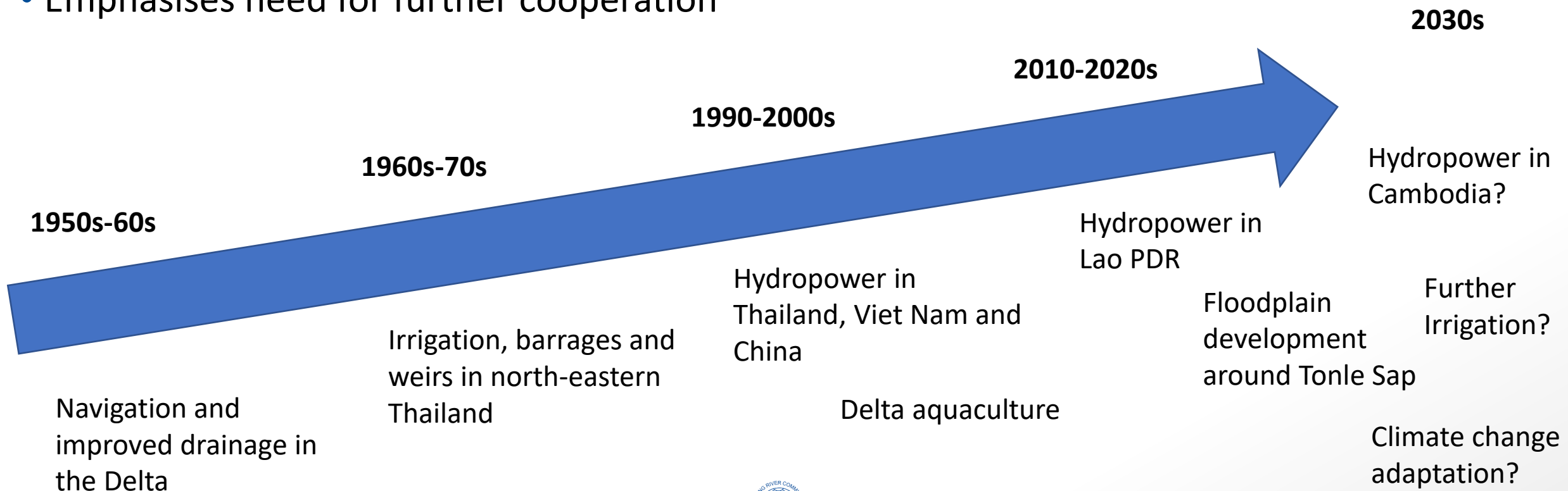
- 446 million km³ of runoff
- Amount of water 'used' is still relatively low
- Current levels of active storage are 14% of Mean Annual Runoff
- Forecast to increase to ~ 22% by 2040
- Development started at different times in different countries



- The Basin is on a **rapid dev't trajectory**
- Hydropower & agriculture are the main future uses of water
- Domestic & industrial use is low, but steep increase expected due to population growth & industrialisation

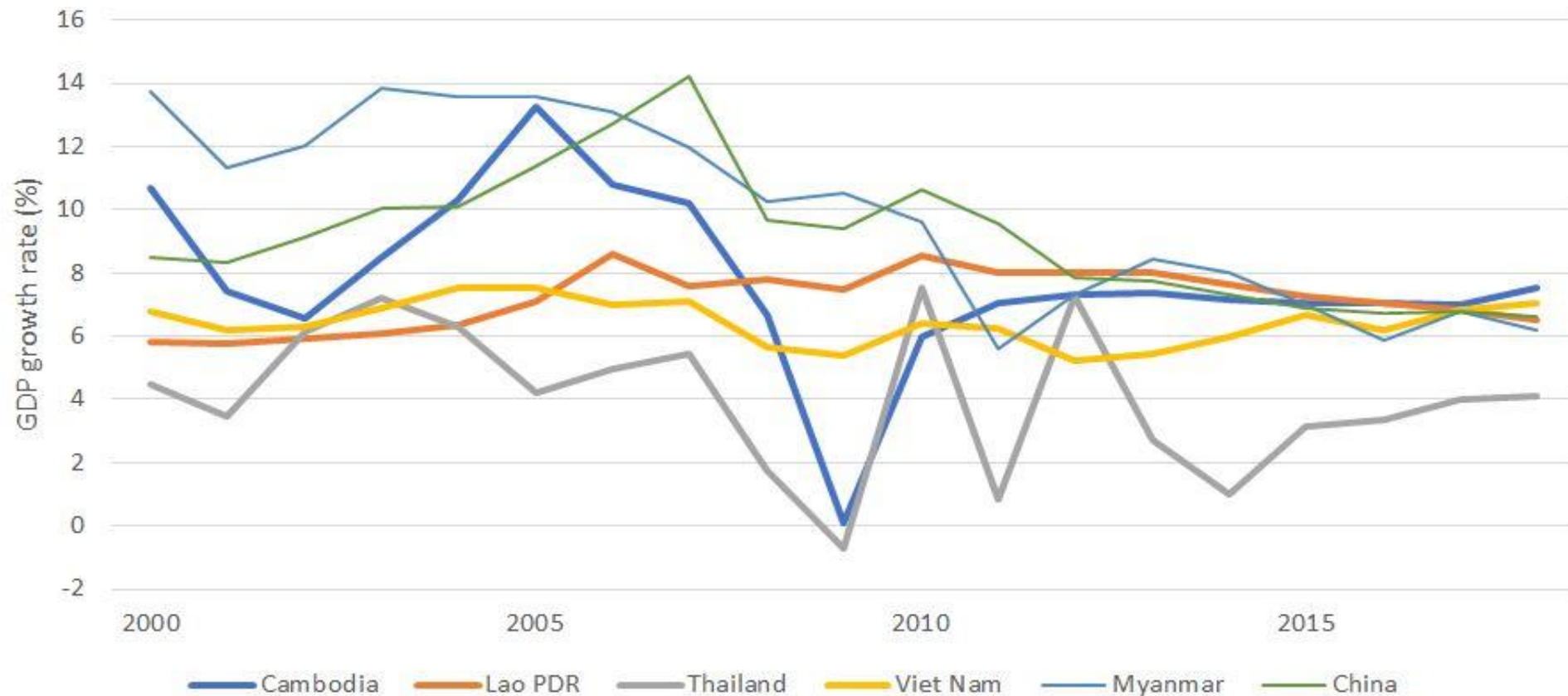
Water Resources Development Pathway

- Development commenced from the bottom-up
- Expanse agriculture, electricity, reduce salinity intrusion & mitigate floods
- Delayed due to political instability and uncertainty about needs and impacts
- Generation of additional knowledge on benefits/costs/trade-offs in recent years
- Emphasises need for further cooperation



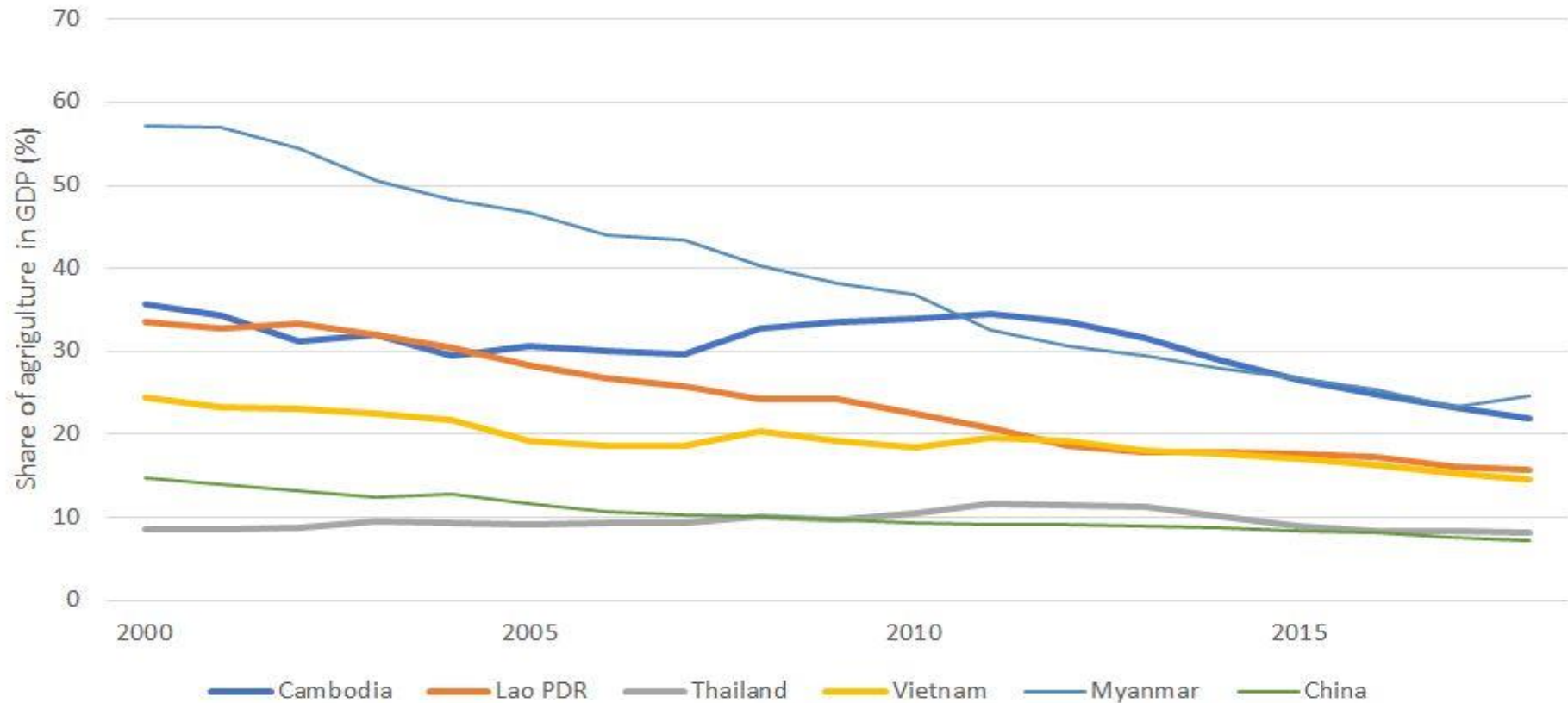
Economic Trends and Outlook

- GDP growth has been strong (between 3.2% and 8.1%) over the last ten years
- Domestic demand and foreign direct investment are the key source of current growth



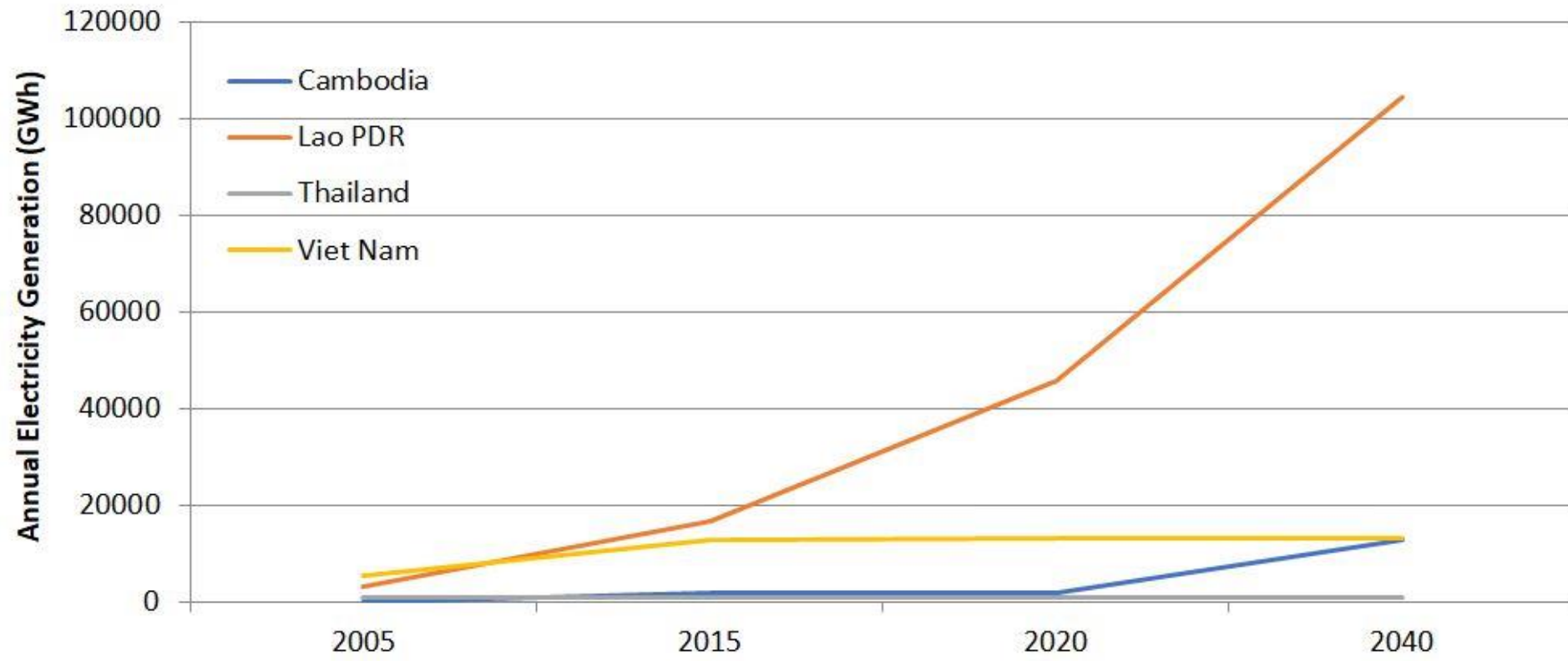
Agriculture Trends and Outlook

- Agricultural sector growing strongly, but a smaller share of the overall economy
- Manufacturing and services sectors growing much faster
- Global food demand and rising prices likely to continue to attract foreign investment



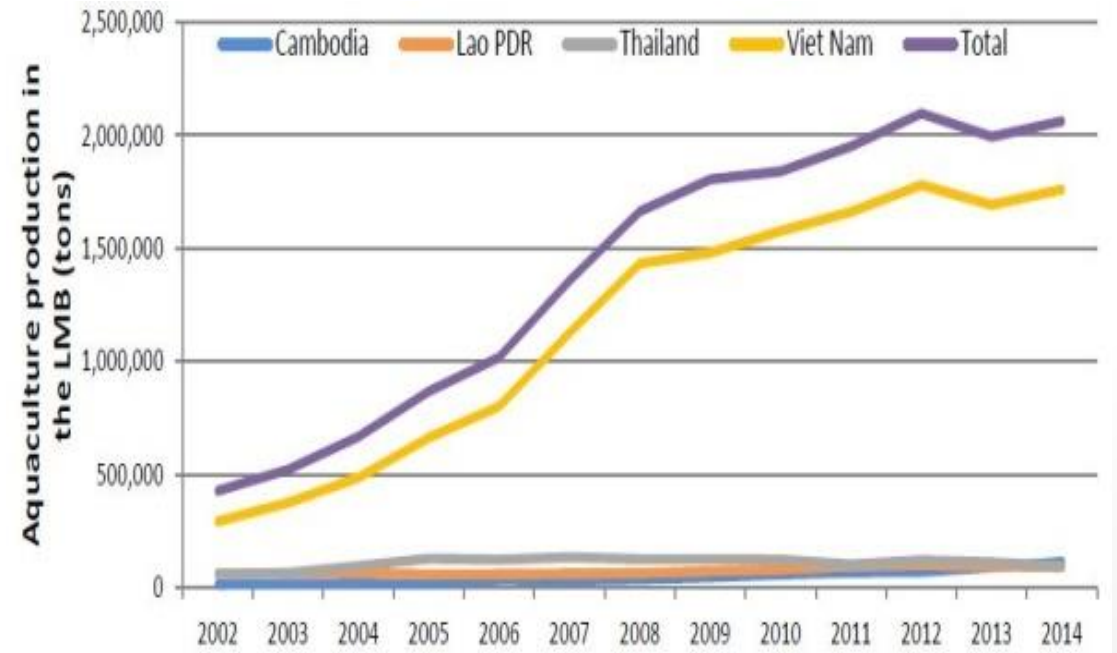
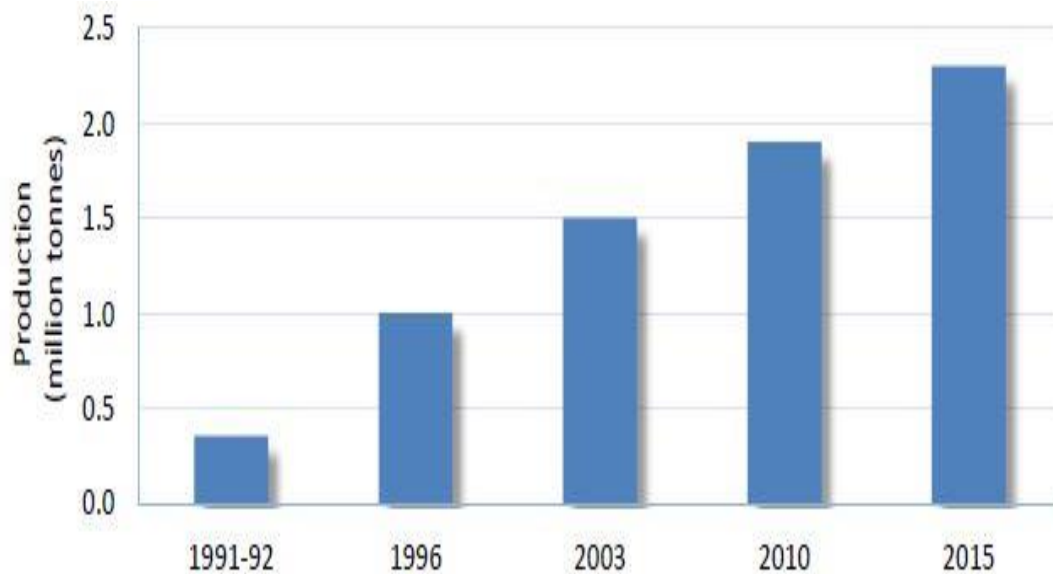
Hydropower Trends and Outlook

- Growing energy demand across the region (60% over 15 years)
- Strong growth in future demand expected (by two-thirds to 2040)
- NPV to increase by between USD 63 billion and USD 152 billion to 2040 in LMB



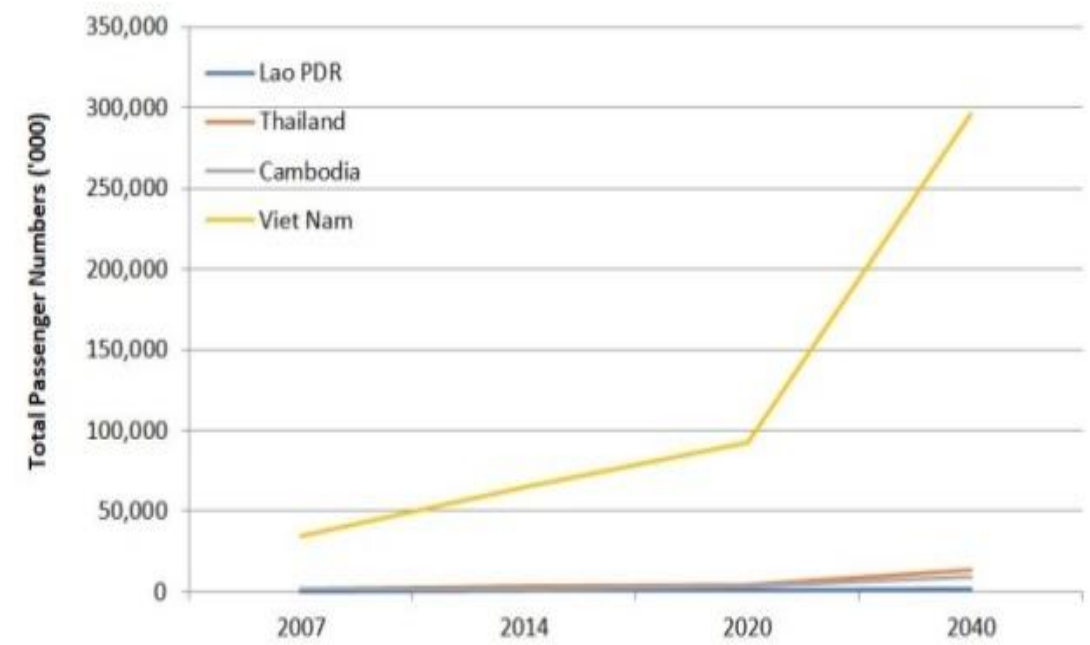
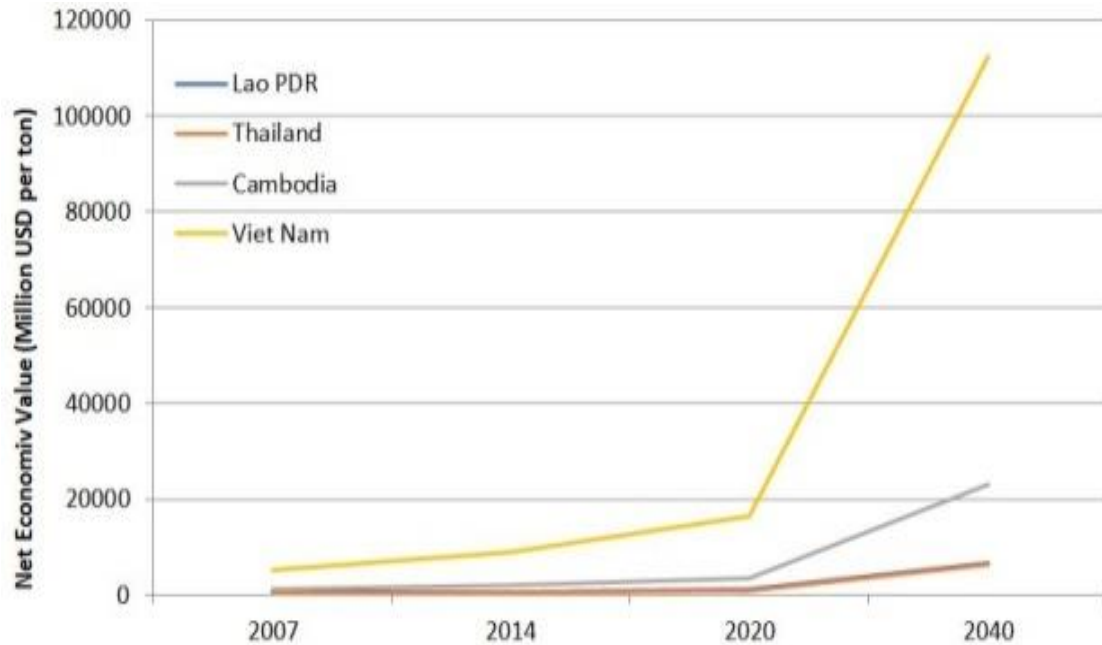
Fisheries and Aquaculture Trends and Outlook

- Amount of fish caught is increasing, but more effort to catch, less valuable species
- NPV of capture fisheries sector could decline by USD 17 billion to USD 23 billion to 2040 due to in-stream barriers, land-use change, and over-fishing
- Aquaculture production to continue growing strongly



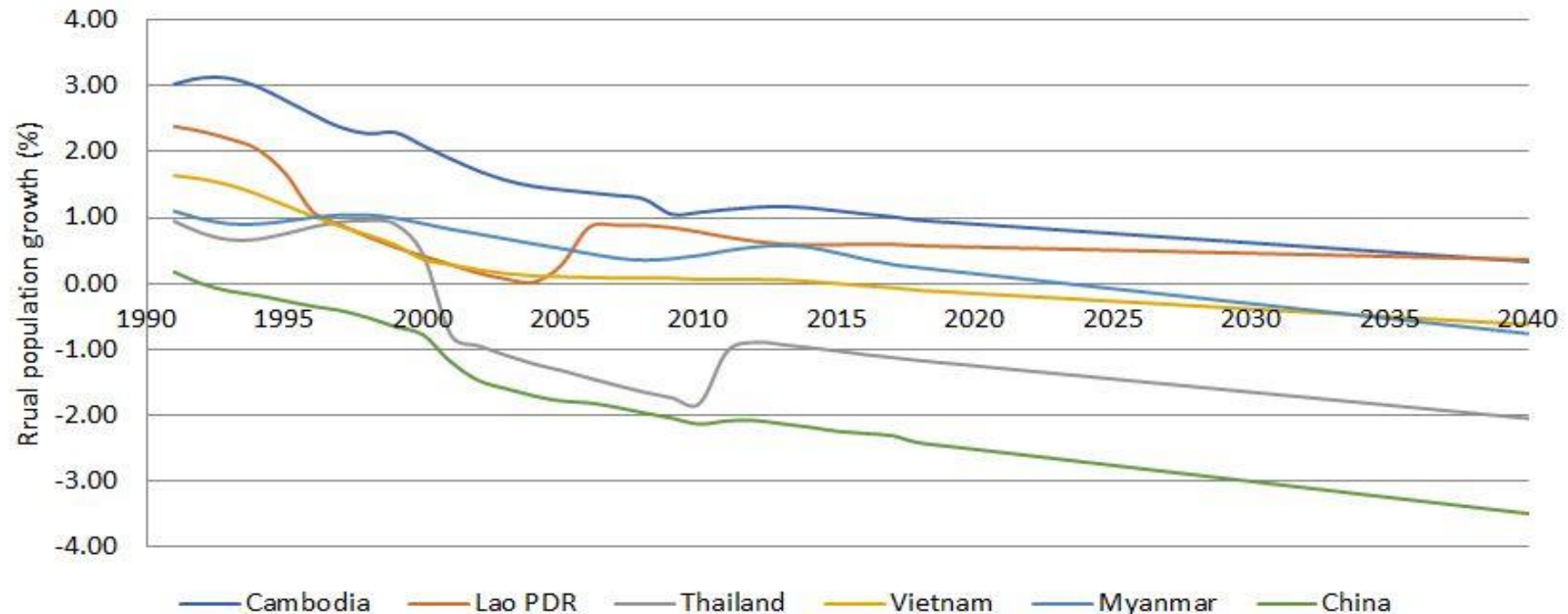
Navigation Trends and Outlook

- Cargo volumes growing by more than 6.4% per year
- NPV to increase by between USD 10 billion and USD 69 billion to 2040
- Navigation Master Plan aims for 500 DWT ships from China to the sea



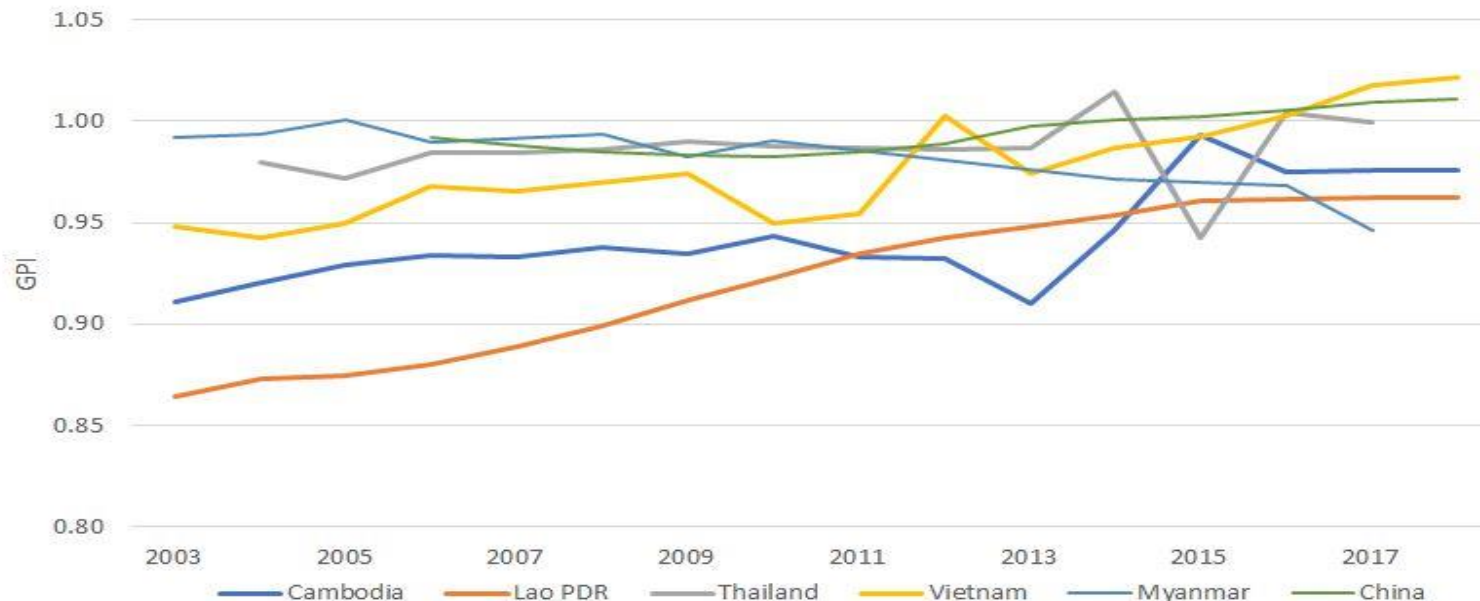
Social Trends and Outlook

- Population 72 million (whole Mekong Basin), projected to be 100 million by 2040
- Significant rural-urban migration driven by employment in manufacturing & services
- Poverty rates have fallen sharply
- However, relatively large numbers of poor, natural resource dependent communities exist



Livelihoods and Employment Trends and Outlook

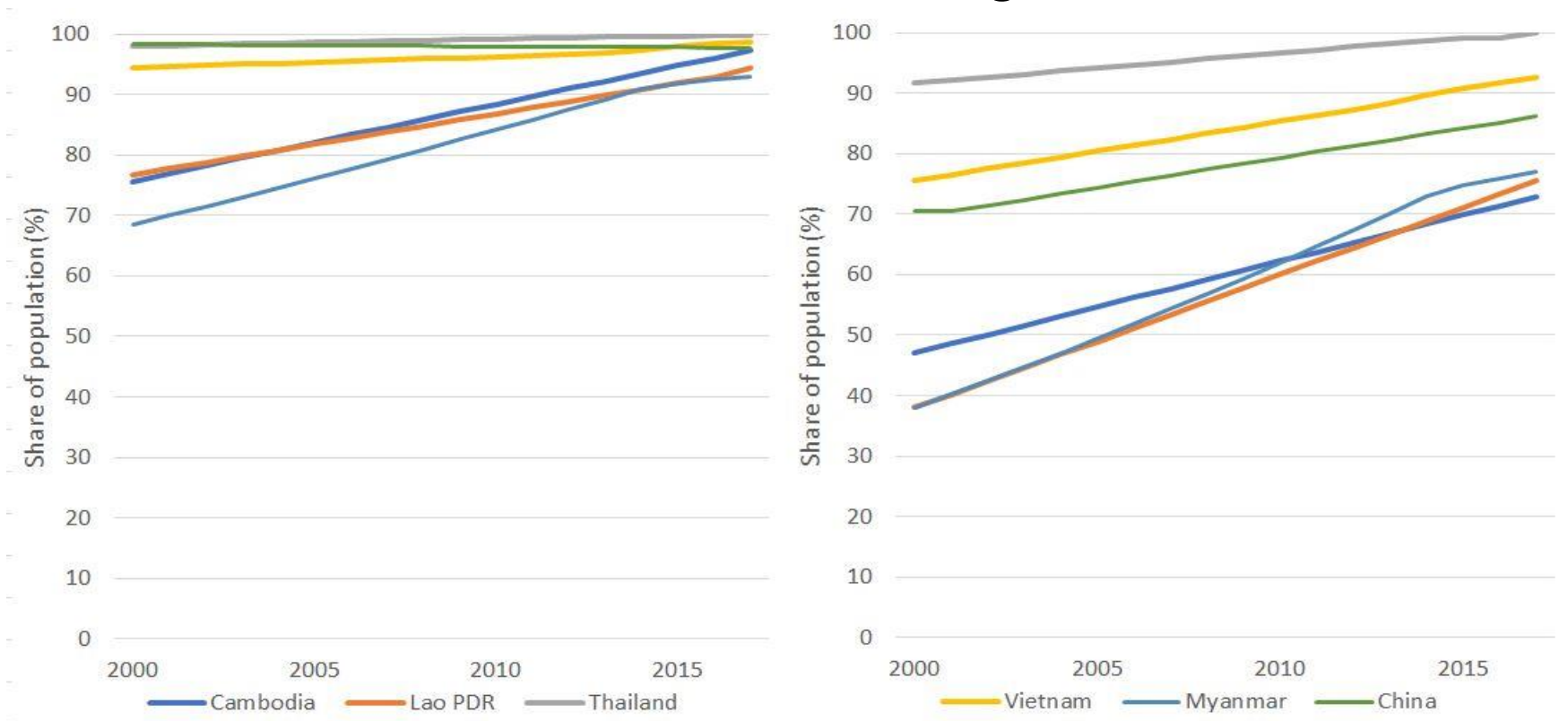
- Share of employment in agriculture, fisheries and forestry is declining, but remains an important source of employment
- Disparities in gender equality exist, but data is scarce
- Gender equality expected to improve in line with development trajectories and national priorities, but a lack of gender disaggregated data will hamper progress



Living Conditions and Wellbeing Trends and Outlook

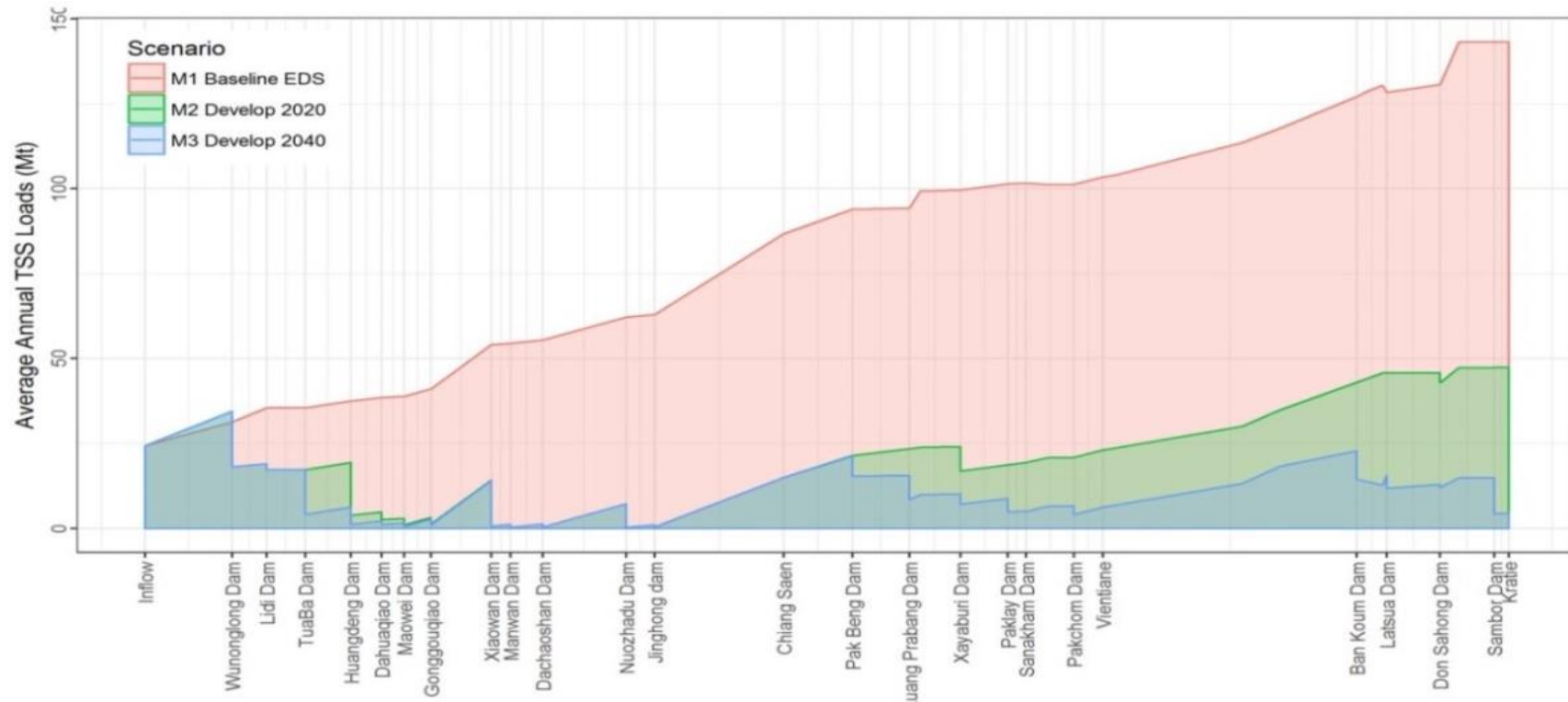
- Food security has improved over the last 20 years: all LMB countries meet more than 100% of dietary energy needs
- Access to improved water sources, sanitation and electricity has increased substantially since 2000, yet variations exist between countries; rural areas lag urban communities

Share of (a) urban and
(b) rural populations
with access to at least
basic drinking water



Water Quality and Sediment Trends and Outlook

- Water quality generally good, but future pressures with urban & industrial development, fertilizer, low flow could bring new risks from algal blooms and low dissolved oxygen
- Sediment transport dropped dramatically from 85 MT/y to 10.8 MT/y at Chiang Saen between 1994 and 2013; & suspended sediment load could disappear at Kratie by 2040

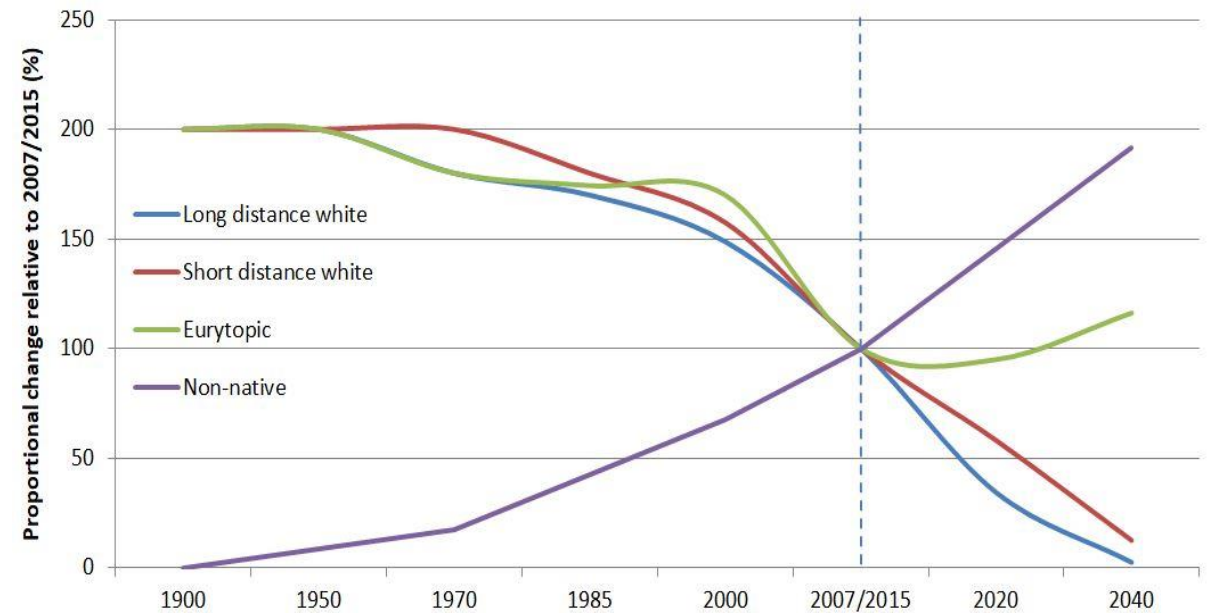


Environmental Assets Trends and Outlook

- Wetlands are severely threatened and gradually being degraded or lost completely
- Total biomass of fish estimated to decline by around 50% over the last 100 years due to rice farming expansion, deforestation, intensive fishing, hydropower dev't etc.
- Outlook for native fish is projected to decline by 25-80% by 2040 with some valuable migratory species extinct
- Non-native species likely to benefit

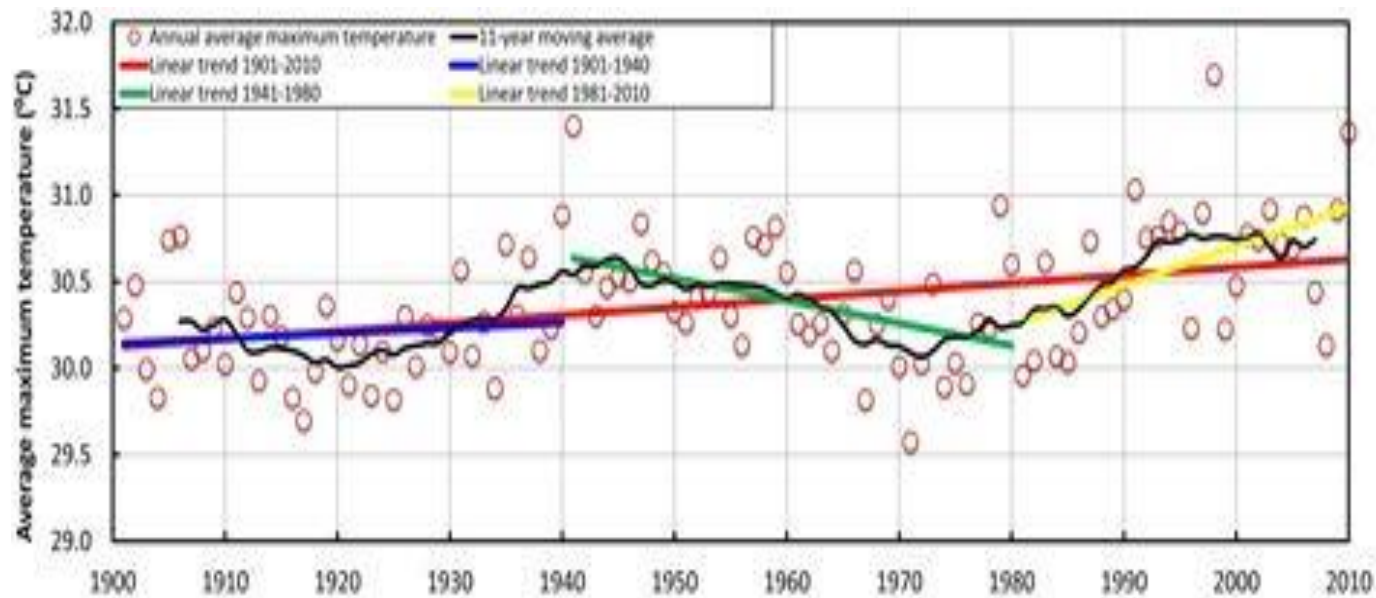
CAUSES: Potential impacts on food security & livelihoods

NEEDS: further consideration of optimal development pathways



Climate Change Trends and Extremes Trends and Outlook

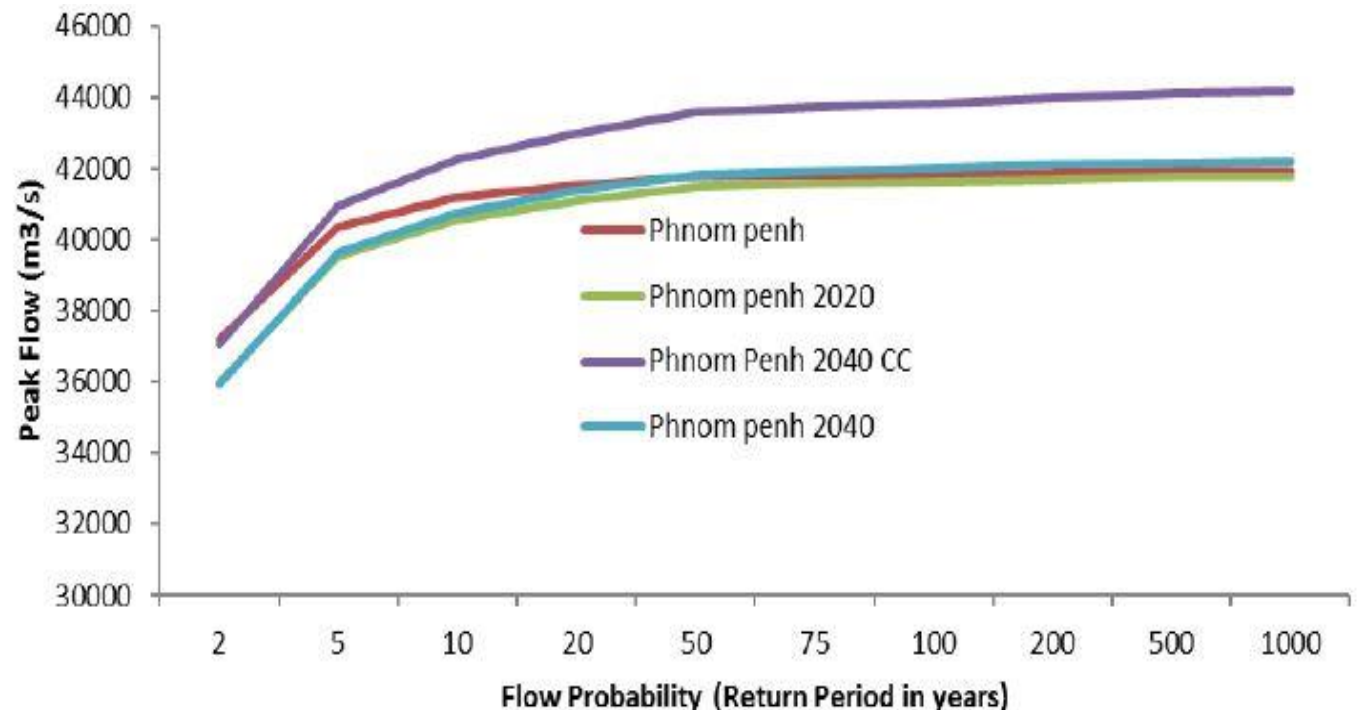
- Average annual basin-wide temperatures increased over historical record, sea-level is rising
- Average temperatures will continue increasing and could be up to 3.4 degrees warmer by 2060
- Basin development will interact with climate change, in some cases mitigating the impacts, and some cases exacerbating them



Adaptation to Climate Change Trends and Outlook

- All countries have plans and strategies to adapt to climate change
- Flood damages are highly variable from year to year but could be 5 to 10 times higher by 2040
- Uncoordinated floodplain development will exacerbate impacts in the Delta

→ **Needs:** cooperative planning and development to preserve parts of the floodplain and protect floodways



Regional Cooperation and Integration

- Two key regional platforms – MRC and MLC
- MRC focused on Integrated Water Resources Management; treaty-based, cooperative procedures, protocols and tools; four LMB countries; knowledge hub and water-diplomacy platform
- MLC has a broader mandate; joint projects financed through a special fund; establishing data centres in each country; includes all six riparian states, but not treaty-based and without cooperative procedures and protocols

Other Regional Cooperation Mechanisms

| | ASEAN | ACMECS | GMS | LMI | Mekong-Japan | Mekong-ROK |
|---------------------------|--|--|---|---|--|--|
| Water-Related Focus Areas | <ul style="list-style-type: none"> - Water supply, demand and management - Water quality and sanitation - Environment - Climate change, extreme events - Governance and capacity building | <ul style="list-style-type: none"> - Environment - Climate change and disasters - Renewable energy - Natural resource management - Agriculture - Tourism | <ul style="list-style-type: none"> - Energy - Environment - Climate change - Tourism - Transport - Capacity development | <ul style="list-style-type: none"> - Environment and water - Agriculture, food and energy security - Data collection, modelling tools, and data and information management | <ul style="list-style-type: none"> - Water resources - Climate Change - Disasters - Infrastructure | <ul style="list-style-type: none"> - Green Growth - Water resource development - Agriculture and rural development - Infrastructure - Knowledge sharing |
| Members | Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam; China = Dialogue Partner | Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam | Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, China (Yunnan Province and Guangxi Zhuang Autonomous Region) | United States with Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam | Japan with Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam | Republic of Korea with Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam |

Future Directions for Regional Cooperation and Integration

- Need for one ‘Lancang-Mekong’ system → Increasing regulation and requirements for operational coordination, potential climate change impacts
- From ‘common interest’ to ‘complementary interest’ to support policy coherence at the *water-food-energy nexus*
- Deeper integration requires each organisation to clearly articulate its role and comparative advantage
- Continued improvements in PNPCA and early engagement in project design
- Enhanced cooperation between MRC and LMC platforms could facilitate proactive regional planning e.g. operational protocols of UMB dams will influence downstream development needs
- A deeper institutionalisation of the relationship between MRC and LMC?
 - e.g. Joint basin expert groups?

Progress Towards Achievement of the SDGs

- 2018 Mekong Summit, leaders commitment to “*strengthen joint efforts and partnerships towards achievement of SDGs*”
- President Xi Jinping’s focus of Belt and Road Initiative on “*strengthening cooperation in ecological and environmental protection and building a sound ecosystem to help realise the SDGs*”



Thank you

