



NATIONAL CONSULTATION WORKSHOP

Cambodia National Environment Strategy and Action Plan (NESAP) 2016-2023

Presentation 1: Key findings from situation analysis, current responses, key priority, and risk assessment and management

By

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I. BACKGROUND

- Important for us to protect Environment and natural resources (E&NR):
 - Environmental deterioration and gaps are evident.
 - High dependency on natural resources for growth and for livelihoods
 - Sustainable environmental goods and services for future needs.
 - Constitution, Environmental Law, RS III, NSDP require placing sustainability as centrality in development planning.
- To continue its current development speed, we need to change resources use patterns, improve efficiency, productivity, and equity, and control waste and pollution.



Government Decision and NESAP Value Added

Samdech Techo Hun Sen has graciously decided that:

- MOE leads the process for formulation of NESAP 2016-2023;
- NCSD to review and endorse draft NESAP 2016-2023 and then to RGC for approval; and
- Set-up Inter-Ministerial Task Force and cooperate with consultants and experts from all organizations and agencies.

- I. Making sustainability a centrality and addressing critical gaps in modernization - national and sub-national levels.
- II. Openness in NESAP Process: must be transparent and participatory → modalities for inclusive and sustainable development planning.
- III. Building ownership and collaboration among key stakeholders - and adopting incentive mechanisms.
- IV. Agreeing on measurable targets and effective monitoring
- V. Identifying concrete and doable steps
- VI. Learning process.

II. SITUATION ANALYSIS

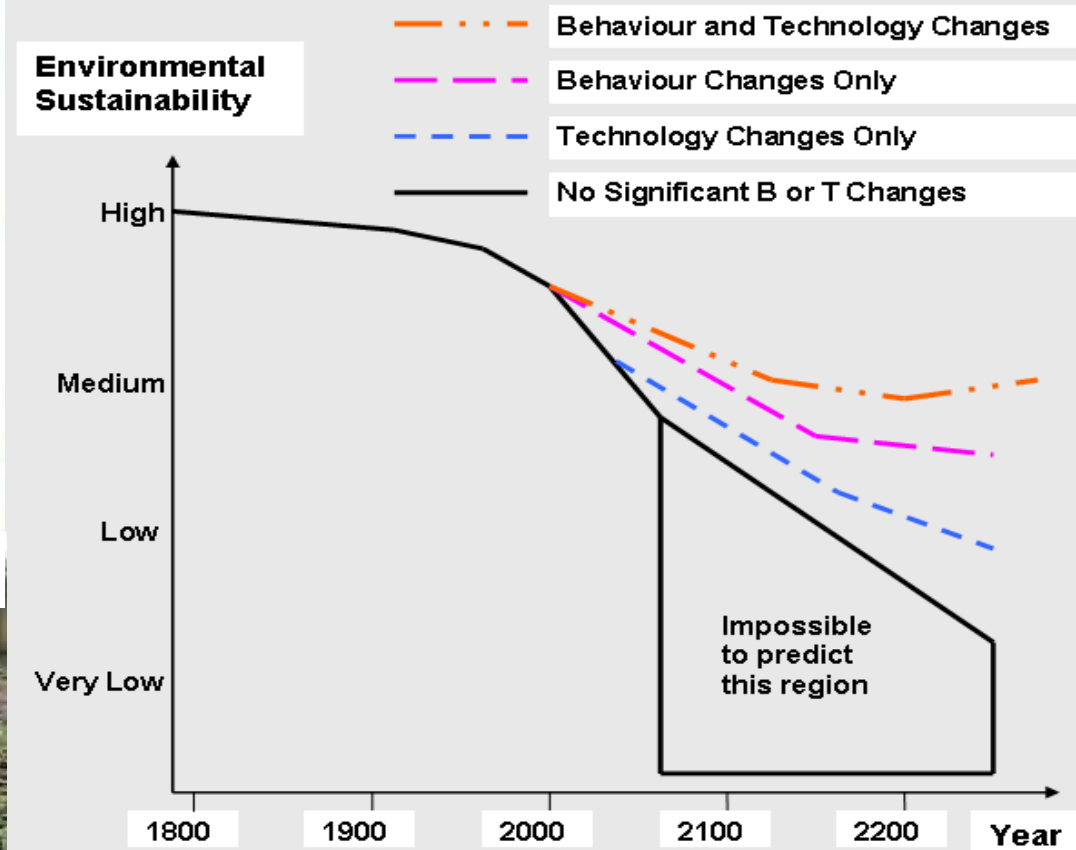
Steps:



What is happening to the environment and why?

What are the consequences for people and the environment?

What is being done and how effective is it?



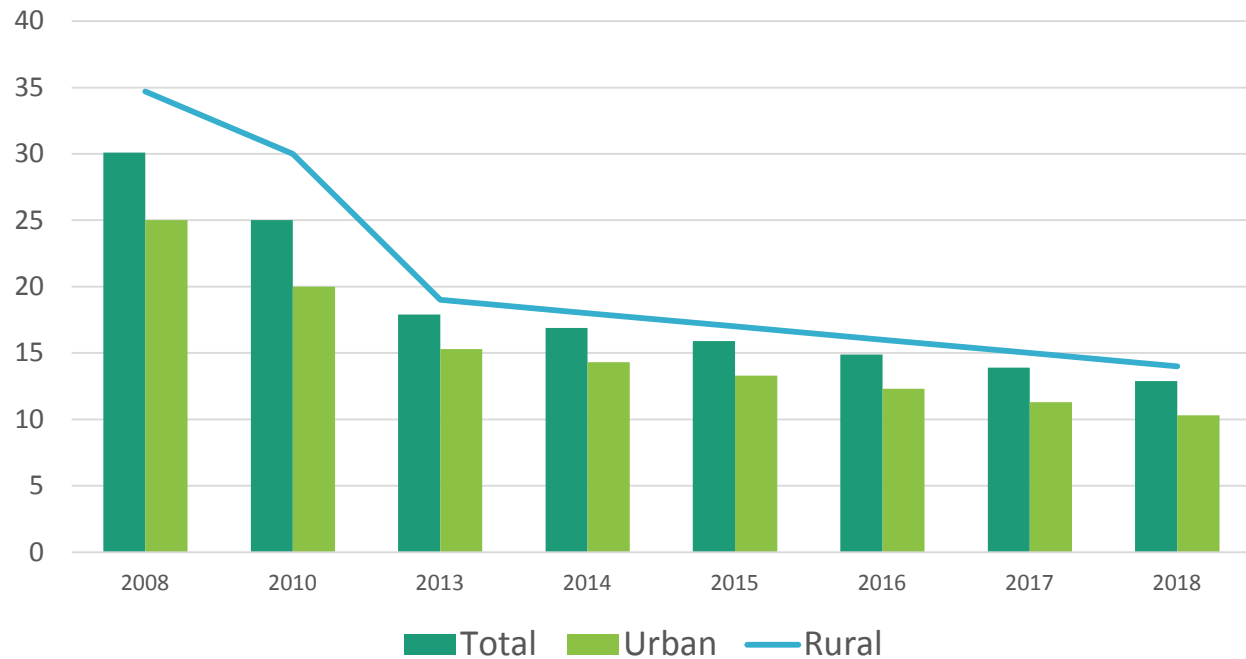
ECONOMIC OVERVIEW

- Cambodia's economic growth (7.1%) remains strong despite world economic uncertainty and geo-political instabilities.
- Cambodia succeeded in ensuring a strong economic growth and other sectoral reforms, while E&NR modernization has just been started.
- **Relatively narrow economic base** - Traditional growth engines - **agriculture** (0.3%), **industry** (10.1%) - garment and light industry, electricity, and construction, and **services** (8.7%).
- Commit to bridge the gap between budget revenue and budget expenditure through public financial management reforms - to increase effectiveness and accountability of budget allocation and financing resources.
- Piloting program based budgeting in key ministries

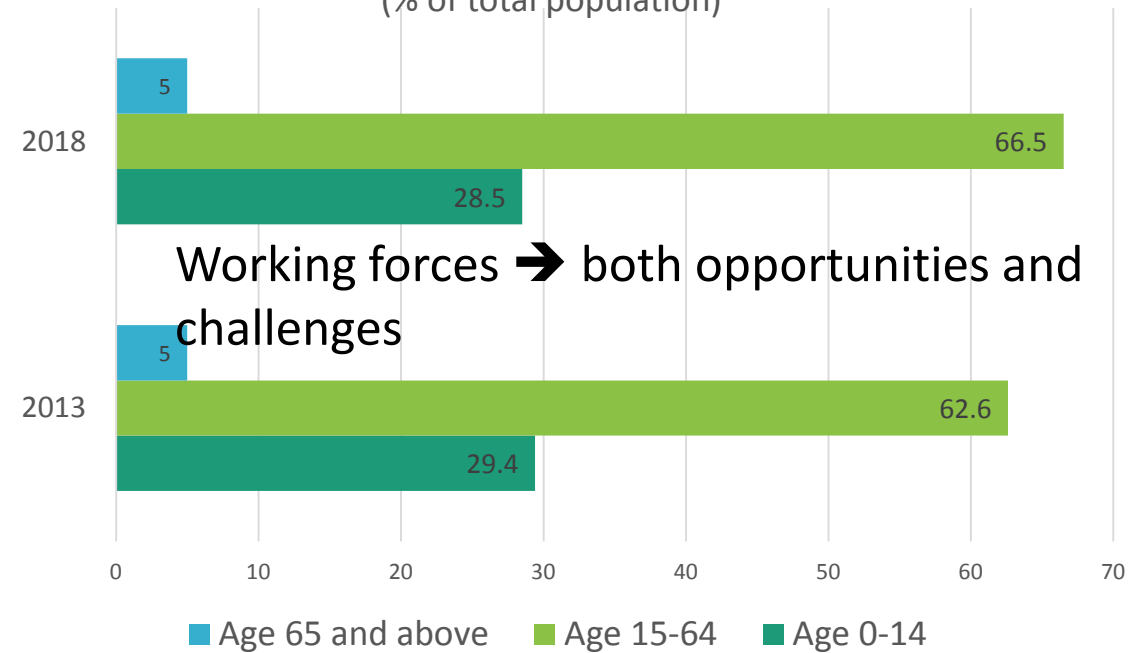
Economic, environmental and social contexts

Environment is crucial for economic development and poverty reduction

Poverty Rates in Cambodia



Population by Age Groups
(% of total population)



GDP/Capita
US\$ - Constant prices 2000



Strong trend of out-migration



Overview of environment and natural resources status

- Rich endowment of natural resources and high dependency on E&NR.
- With increased population and changing lifestyle, and E&NR degradation → without effective and modernized E&NR management, per capita natural asset availability will reduce further.
- Empirical evidence shows that economic development and short-term gain without environmental considerations may cause serious environmental damage in turn impairing social welfare of the most vulnerable groups.
- More concerted and continuous efforts are required to effectively manage the drivers and impact on the natural capital loss especially.



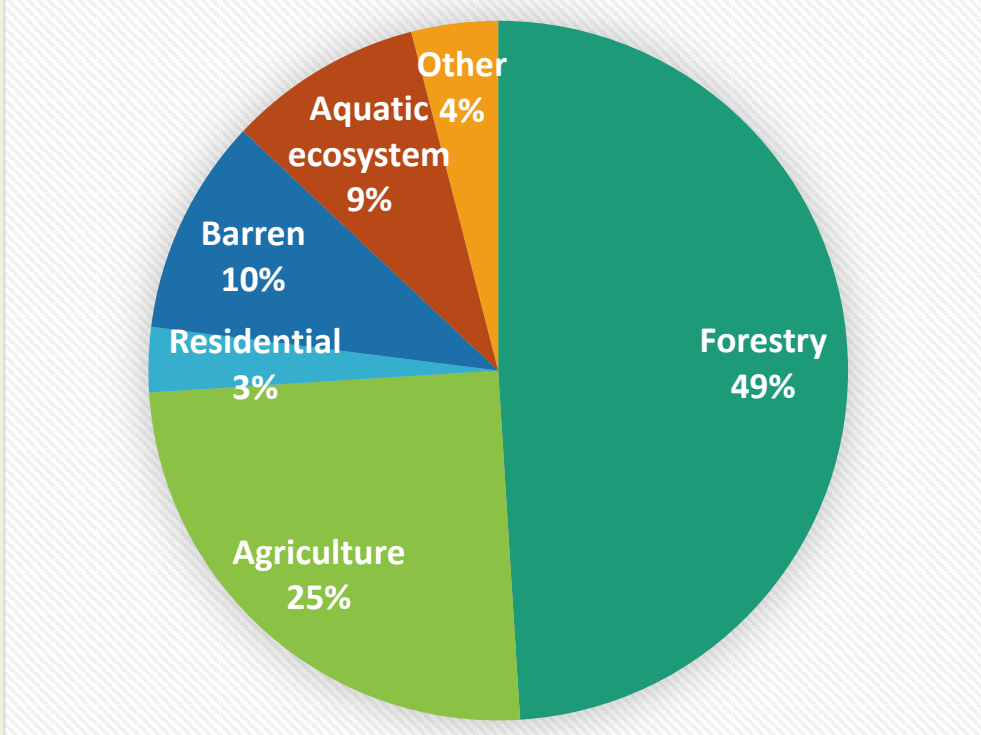
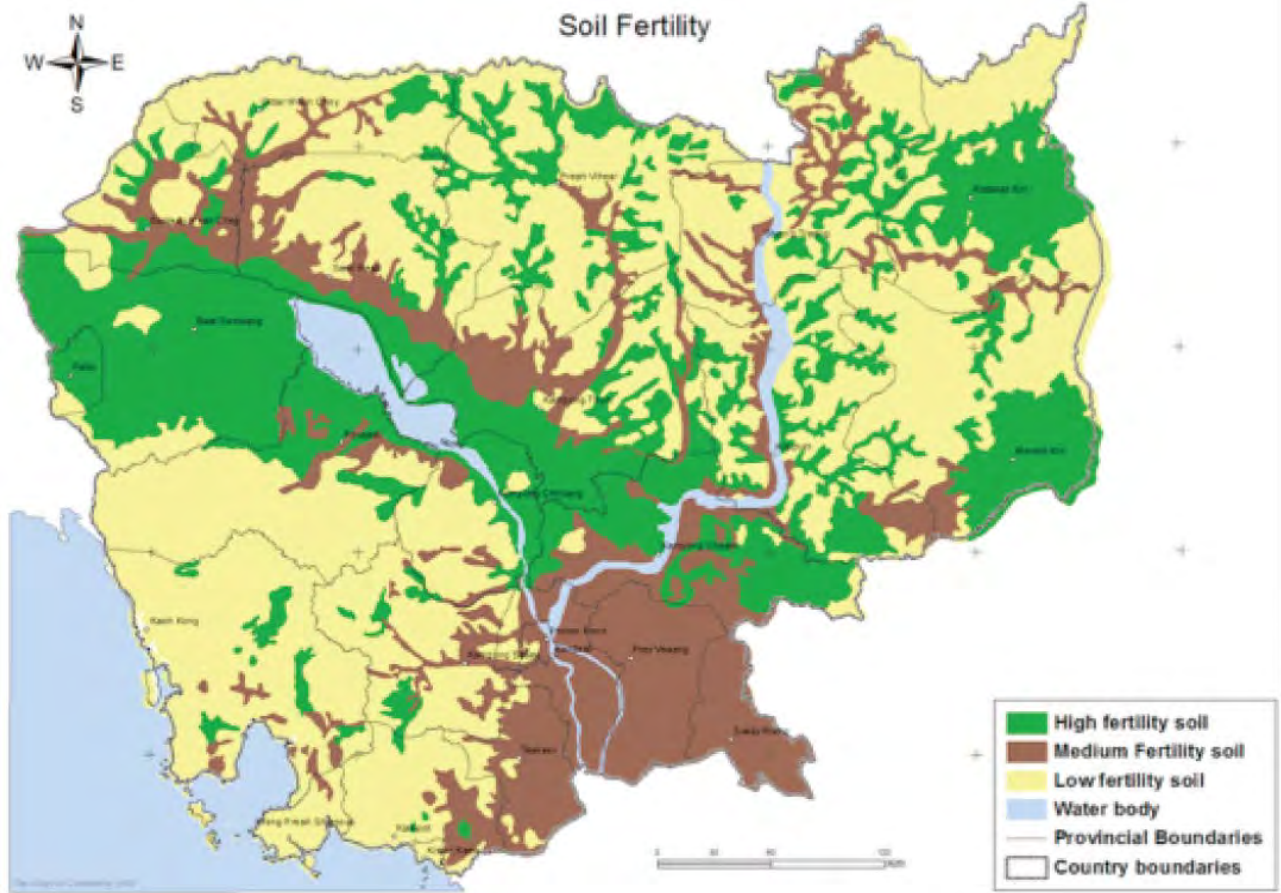
Biodiversity

- Rich diversity of species and new species found regularly == underpinning economy, society, culture and individual well-being ++ remarkably high intrinsic, aesthetic and intangible values.
- Economic values of its biodiversity and ecosystem services and role in providing income and livelihood.
- Biodiversity and its associated ecosystem are under great threat.
- RGC's National Biodiversity Strategy and Action Plan responses to recent trends in biodiversity and ecosystem services deterioration due to:
 - (i) rapid land-use change - forest conversion, infrastructure
 - (ii) hydrological and morphological conditions → impacts on aquatic and terrestrial habitat
 - (iii) climate change - sea-level rise, temperature and precipitation change
 - (iv) unsustainable exploitation of E&NR and invasive alien species, and
 - (v) Pollution from urbanization, industrialization and other economic activities.



Land and soil

- Land degradation, including declining soil fertility and productivity, and soil erosion are heavily impacting biological, agricultural and economic productivity.
- Land use decision making requires careful soil classification information and management techniques. Areas of good soils for agricultural production should be identified, classified and protected.



Forests and protected areas

- Forest cover area was 73.04% of total land area in 1965, and reduced to 59.82% in 1993, 58.60% in 1997 and 49.8% or 9 million hectares in 2015.
- Key drivers: large scale economic land concession, illegal logging, agricultural expansion and urbanization/industrial development.
- Cambodia ranks the second in the world, after Bhutan, in percentage territory under PAS management.
- Current protected areas were under heavy development pressures.
- Concerns about its effectiveness in safeguarding significant biodiversity values, adapting to and mitigating climate change, and providing sustainable livelihood opportunities.
- In 2016, RGC has approved an important institutional reform to address challenges associated with the management, protection and conservation of natural resources and biodiversity.
- More efforts to enforce and ensure compliance – capacity gaps?



Marine and coastal zone

- Cambodia coastal area and marine Exclusive Economic Zone (EEZ) are ecologically and biologically rich areas but under great development pressures.
- Illegal clearance for firewood, charcoal production, saltpan, land reclamations and intensive shrimp aquaculture and by offshore and estuarine sand dredging.
- Poorly coordinated and planned development of marine and coastal areas, waste management, lack of measures for potential hazardous goods spills, and tourism infrastructure development, zonation and relevant safeguard.
- Joint effort by MOE, MOT, MLMUPC in coastal zone conservation must be sustained and scaled up.



Fishery and aquatic animals

- 64% of all rural households are engaged in fishing - primary or secondary occupations (CGIAR, 2015).
- More than six million people work full-time in fisheries and fisheries-related activities.
- Inland fisheries contribute 8-12% of the national GDP.
- Fish production in Cambodia has substantially increased over time, and comes mainly from capture fisheries and freshwater fish (MAFF, Annual Conference, 2015)

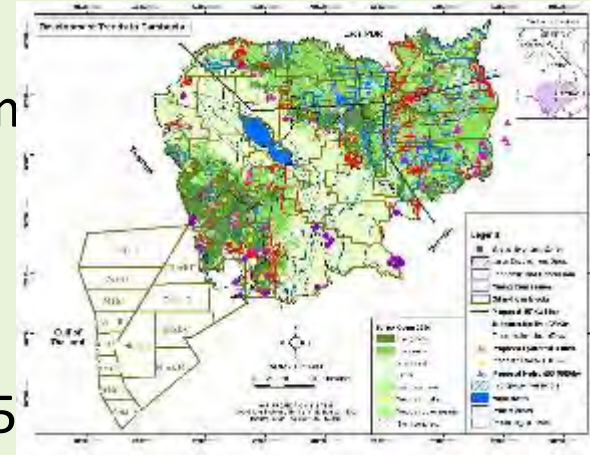
Fish catches	2002	2005	2010	2014
Total	136,031 tons	354,895 tons	550,000 tons	674,000 tons
Fresh-water	85,600 tons	305,000 tons	405,000 tons	464,000 tons
Marine	36,000 tons	33,900 tons	85,000 tons	120,250 tons
Aquaculture	14,431 tons	15,995 tons	60,000 tons	95,000 tons



- **Concern:** dams and major infrastructure development, unsustainable catch of some major species, coastal and marine zone, fish habitat and passage degradation, and inadequate management of fisheries → translates into lower income and threats to their livelihood

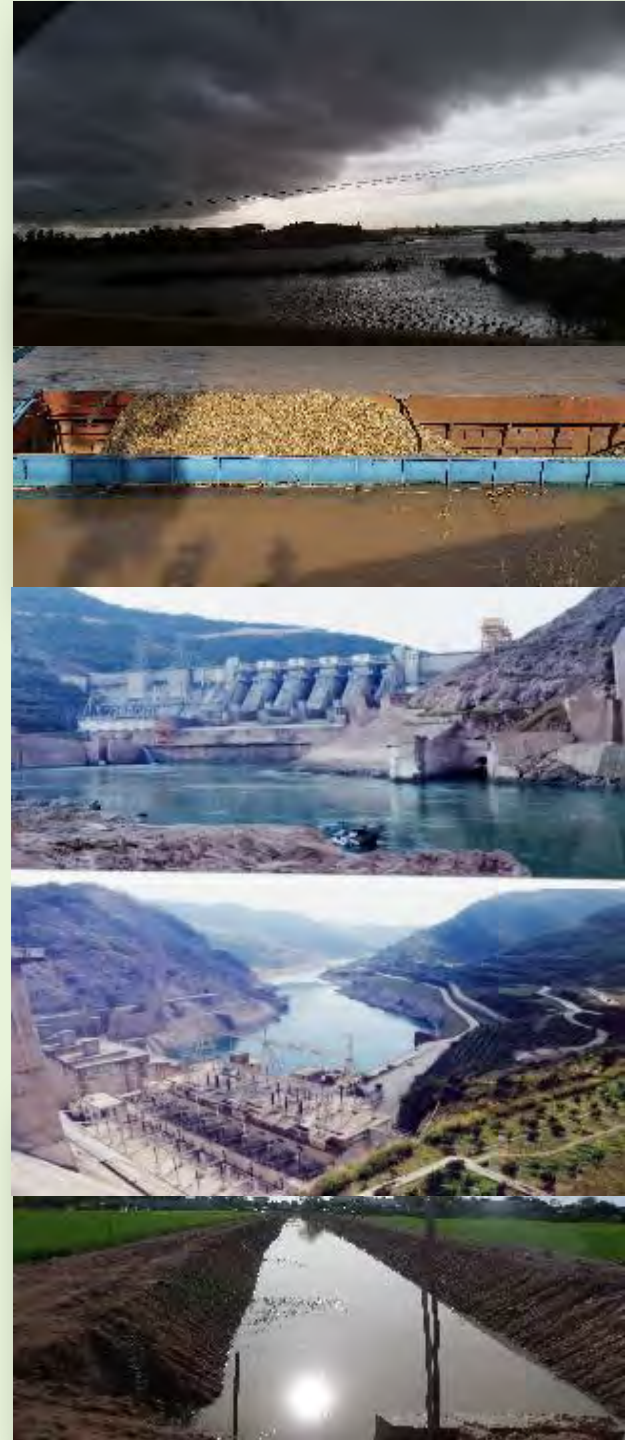
Energy, mine, oil and gas

- Exploitable oil and gas deposits were recently found → potential revenue stream for the government, if commercial extraction becomes feasible.
- Mining sector in Cambodia is still largely undeveloped (MME, 2014) and commodities price is extremely volatile.
- Lowest electrification rates with only 35% - 57% with access to electricity in 2015 and 2016.
- Highest electricity costs → fuel and diesel generators = 80%, and energy imported from neighbours (MIME, 2012).
- Firewood and charcoal (74.8% for whole country, and over 88.9% in rural area) (NIS, 2015b). → remain main source of cooking energy in rural areas until 2030.
- In-door air-quality pollution: WHO: 14,729 premature death/year from household air pollution (IHME, 2015) – killer No. 2!!
- Energy Sector DP 2005-2024: diversify energy supply sources, reduce reliance on fossil fuels, increase renewable energy deployment, in particular hydropower development.
- **Impacts: air / water / soil pollution, deforestation, GHG emission, human health**



Water resources

- Water and related resources are central to the economic development in Cambodia, i.e. industry and energy sector, agricultural development, construction, tourism, water-way and transport, and fisheries etc.
- Cambodia's water resources are abundant, but very fluctuated. Ground water used extensively, but potential is poorly known.
- Agriculture is estimated to use 95% of total water abstracted, other usages are growing (MOWRAM, 2014). Industry from 1% to 15% in 2025!
- Quality and quantity of water is affected by:
 - unequal distribution in wet and dry seasons, and locations;
 - low capacity for storing, regulating and draining;
 - more than half of the actual water resources in Cambodia (74%) comes from upstream countries, and part of the border waters;
 - rapid development in the basins such as dam construction, large scale water diversions, sand mining, flood-plain development;
 - by-products of economic activities, e.g. pollution;
 - lack of sufficient information and knowledge – potential and use, quality, and forecasting



Special focus: pollution impacts

Noise and air pollution: most of air pollutants are still below the national standards set in the sub-decree 42 ANK/BK, but concern over the outdoor and/or indoor localized air ambient quality.

- Increasing air and noise pollution from mobile sources, construction, cement and power plants. They cause series of significant health problems, wellbeing, productivity and natural environment.
- Need to monitor more systematically

Solid waste pollution: Disposal at dumping sites in cities and districts grow at 10% and the recycle and reuse rate remains as low as 2%/year.

No sanitation land-fills (leakages into environment)

No central incineration plants to manage solid waste and hazardous wastes.

- Without effective management of rapid growing solid waste → negative effect on touristic attraction, public health, ecological system → quality of water, soil, air and ground water, and threaten their sustainability (EPA, 2015).



Pollution impacts (Cont.)

Waste water pollution : Domestic and industrial wastewater are commonly collected by sewerage/drainage → retention in lake or wetland, → river systems or other eco-systems.

Natural lake and wetland areas are reduce.

Few cities and provinces of Cambodia have some forms of wastewater treatment plant or system.

Chemical waste pollution: Imported several chemicals - agricultural chemicals, for malaria and dengue fever eradication, for industrial and mining purpose.

Concern over generating and releasing POPs - PCBs, Dioxins/Furans from power generation plants, using contaminated oil, and waste burning.

Deficiencies in chemical waste management practices in pharmaceutical and health facilities.

Management of chemical risks is high-priority → environment, public health and occupational health and safety.



Climate Variability/change and Disasters

- Cambodia's Second National Communication: climate variability and extreme weather events are projected to increase → more frequent devastated floods, droughts, storms, coastal erosion and intrusion, heat waves, and outbreaks/intensification of pests and diseases.
- Cause significant impacts and vulnerabilities in four sectors, including agriculture (on water resources and rice production), forestry, coastal zones, tourism and human health.



- 2000-02 flood: 438 casualties and \$205 million in damages;
- 2009 typhoon Ketsana affected 14 provinces and caused \$132 million economic damage;
- 2011 flood: affected more than 1.7 million people/18 provinces and \$624 million
- 2013 flood: caused significant economic damage - \$700 to 750 million)

ECONOMIC AND SOCIAL SECTORS DEPENDING ON AND AFFECTING ENVIRONMENT AND NATURAL RESOURCES

Sectors such as agriculture, industry, mining, energy, tourism, transportation, urban development, and external trade remain highly dependent on and causing both negative and positive impacts on E&NR.

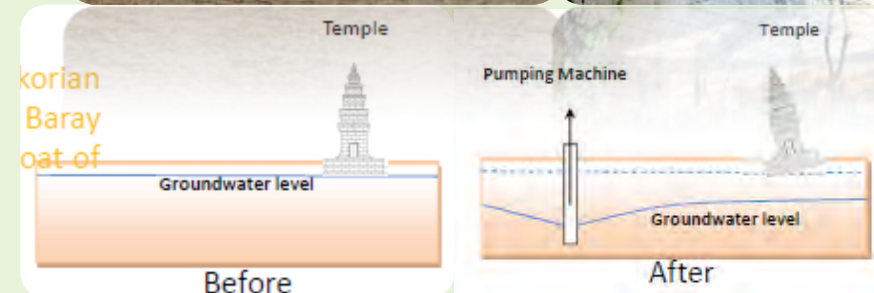
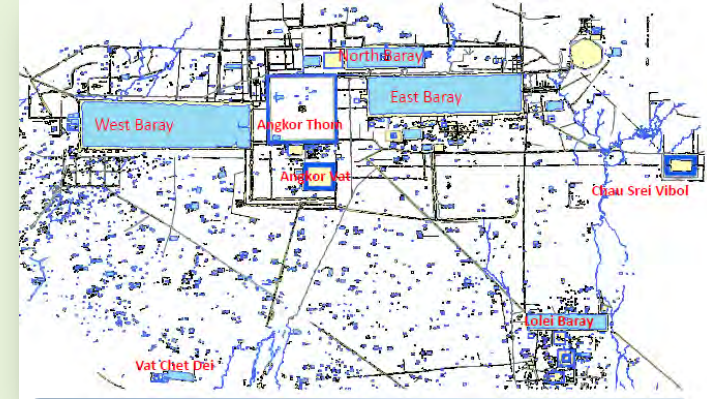
Agriculture:

- heavily dependent on natural resources as inputs, e.g. water, soil, stable climate;
- agricultural productivity is low due to limited irrigation, soil fertility and technology application, and limited access to extension services and rural credit;
- Inadequate post-harvest process management and value chain;
- Expansion of cropping areas and its intensification, and through forest conversion mainly for rubber, cassava, and sugar cane;
- inappropriate use of inorganic fertilizers and pesticides cause water and soil pollution and impact human health and household livelihood.



Tourism

- 17% of GDP in 2013 (about 13% per year on average)- six fold increase since 1995.
- Immense potential for different types of sustainable tourism, including ecotourism and green tourism and country's rich cultural and natural heritage.
- Some 4.2 million visitor arrivals in 2013 - growing by 20% annually.
- Target of attracting approximately 7 million international tourists to visit Cambodia in 2020 → a world class tourist destination.
- Hence demand for physical infrastructure and natural resources (clean and safe == E&NR).
- Sustainable and responsible tourism involving local communities, raising public awareness and train tourism sector, and hospitality sector (NCSD, 2016).



Urbanization and transportation

- Rapid urban growth (population density increase and physical expansion).
- 22.5% of the total 15.2 million national population (NIS, 2015b) lives in cities, - over 11.3% of them are residing in Phnom Penh → growing faster.
- Many of Cambodian cities and industrial zones are located and expanded into key river systems, wetlands and coastal areas.
- If not properly planned, it leads to severe urban issues such as pollution, severe road congestion, air pollution and GHG emission, increased noise levels, and decrease in urban space and livability.
- Since 1990 to 2013, Cambodia's vehicle registration totaled 2.45 million. GHG emissions increase with growing number of road vehicles (8% annually - 2010 to 2013).
- Majority of vehicles are second-hand, and have poor efficiency, and the urban areas experience heavy traffic during rush hours.
- Current rate of GHG emission from road vehicle constitutes 3.58% of overall emission, the rate is expected to accelerate.
- Roads, drainage, bridges and culverts have suffered periodically from natural disasters - inadequate compaction and pavement, erosion of embankments and slopes, and lack of proper climate-proofed design and construction and drainage systems (MPWT, 2012).



Industry and handicraft

- Share of national GDP: increased from 12.6% in 1993 to 24% in 2013.
- Employment: provided 5% of national jobs in 1993 and increased to 18.6% 2012 (25.2% of jobs during the dry season).
- Industrial sector remains narrow based on low level of sophistication, and high concentration around major urbans and environment sensitive areas.
- Energy intensity: two times higher than many countries in the region (MIME, 2012).
- Limited technical capacity and infrastructure for waste, sewage and pollution management
- New factories needs 250 ha in 2015 → 4,500 ha/year by 2020.
- **Impacts:** high energy consumption and waste, GHG emission, land clearing, industrial pollution – waste, water / air / soil contamination, human health impact.



Trade and regional / global integration

- Cambodia is becoming more and more connected to regional and global markets, as well as more susceptible to the regional and global volatilities.
- Most of the fast growing export sectors (garments, footwear, light manufacturing, processed food, milled rice, cassava, rubber, tourism and silks etc.) depend on natural resources as key inputs for production, causing greater pressures.
- heavily dependent on energy and resources use in its production and are yet equipped with energy efficient production technologies
- solid waste including hazardous substances, and waste water management are also areas that need to be mitigated
- **Impacts:** Environmental impact and reputational risk that potentially affect trade, products' competitiveness and consumers' reaction.



Governance

- Good governance is critical for achieving sustained and stable social and economic growth, and a shift toward sustainable and green economy in Cambodia
- It covers both 1) the institutional aspect (law and policy, procedures, social norms) 2) organizational arrangements - state, non-state and informal actors guided by the rules of law, and 3) quality process for communication, knowledge, fair allocation/access, decision-making, action, accountability, and collective learning.
- Environmental and natural resources governance shall encourage and promote:
 - Clear and enforceable law and procedures;
 - cross-sector institutional arrangements;
 - effective property rights regime;
 - accelerated innovation to increase resource efficiency and reduce land, forest and water degradation;
 - Sustainable land use planning, farm land and forest management, soil and forest classification efforts and application of effective policies such as PES, polluters and users pay principles.
 - Send clear signals: enforcement and incentives to comply etc.



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Key findings

Urgency for ensuring E&NR sustainability in Cambodia is evident:

- 1) High dependency on natural resources for growth and for livelihoods**
- 2) Environmental deterioration is evident** - significant environmental damages in turn impairing social welfare, i.e. quality of life of present and future generations
- 3) Other factors** - Population and demographic change; governance; technology; and external shocks, i.e. weather related shocks, economic crisis, health related shocks, conflicts etc.

If trend continues → to face severe risk of negative ecological balance → social instability, → unable to achieve SDGs → affects vulnerable groups, i.e. women, children, elderly, ethnic minority and handicaps.



III. CURRENT RESPONSES

- A number of law, strategies, policies and major programs focusing on sustainable development, green growth and environmental management.
- RS III and NSDP, PIP – centrality, CC, capacity, green development, E&NR protection.
- Several Sectoral and Thematic Responses
 - Sustainable development, green growth, wetlands, PAS, waste management etc.
 - Climate change and DRR;
 - Biodiversity and Ecosystem
 - Sectoral: 14 Sectoral CCSPs, Forest, Agriculture, Water etc.
- Challenges and relevant lessons learned.



VI. RISK ASSESSMENT AND MANAGEMENT

They are several...some of them are summarized below

	CRITICAL GAPS AND RISK	RISK MANAGEMENT OPTIONS
1	Political Risk	
1.1	<ul style="list-style-type: none"> - Lack of proper political will and mainstreaming of sustainability in budgeting, and sector planning. - Compartmentalized institutional arrangement and lack of cross-sectoral inclusiveness 	<ul style="list-style-type: none"> ✓ Sustained awareness raising and policy development. ✓ Role of Champion for sustainability and social well-being. ✓ Well-facilitated process → momentum of current in-depth reform and modernization.
2	Institutional Risk – weak cross sectoral coordination and inclusiveness	
2.1	<ul style="list-style-type: none"> - E&NR are cross-cutting and cross-sector in nature, but are sub-divided or overlapped - Difficulties in harmonizing diverse national, sectoral, and local interests affecting respond to local needs and urgency. 	<ul style="list-style-type: none"> ✓ To build on commitment to place environmental sustainability in the development framework and local democratic development thru NCSD and NCDD. ✓ To serve as planning and resource mobilization tools to strengthen cross-sector coordination, and inclusiveness.
3	Technical and Financial Risks: limitation in human and financial resources, and scope and continuity	
3.4	<ul style="list-style-type: none"> - Strategies and plans often don't reinforce each other. - Competition for limited financial resources is extremely fierce. - Failure to mobilize funding and loss of momentum, political commitment and enthusiasm. 	<ul style="list-style-type: none"> ✓ To develop strategy and roadmap for mobilizing financial and technical support needs for NESAP implementation ✓ To address disconnection between support from development co-operation and national priorities. ✓ To work closely with MEF, CDC, and others to work in a pro- active manner with developers/ investors.
4	Low awareness, and lack of technology and innovation, M&E	

Priority Issues

- rapid social and economic development and modernization have outpaced the environmental institutional and organizational capacity, technology and human behavior,
- long-term economic and social cost from the short-term economic gains need to be properly addressed.
- “Do business as usual” is not an option for Cambodia to develop towards a green, low-carbon, climate-resilient, equitable, sustainable and knowledge-based society.
- Accordingly, the NESAP 2016-2023 is to contribute to:
 - leveraging continued in-depth modernization of the environmental and natural resources governance and management
 - supporting our country in continuing its sustained social and economic development through modernizing resources use, development and conservation, improving resource use efficiency and productivity, ensuring sustainable financing mechanism, and reducing waste and pollution and improving human health and well-being.

THANK YOU VERY MUCH FOR YOUR ATTENTION!

