Introduction, Concepts and Principles of Development Planning

Environment, Development and Sustainability

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Topics

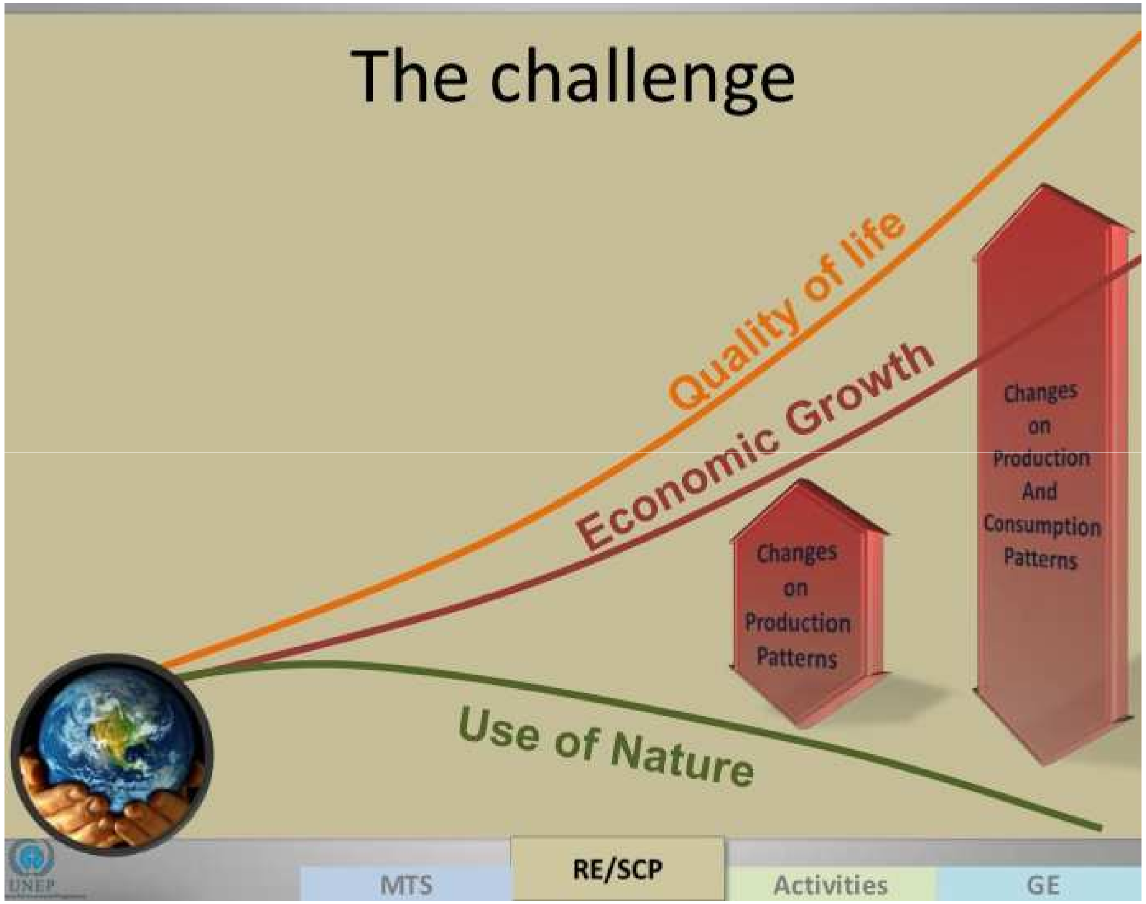
- Sustainability and milestones
- Principles of sustainable development
- Development Planning
- Policy/Plan/Program
- Plan/Program making tasks
- Links between Plan/Program making and SEA
- Introduction to Strategic Environmental Assessment (SEA)
- Introduction to Integrated Resources Planning (IRP)

1. Sustainability and milestones

The Challenge

Effort to narrow the gaps.

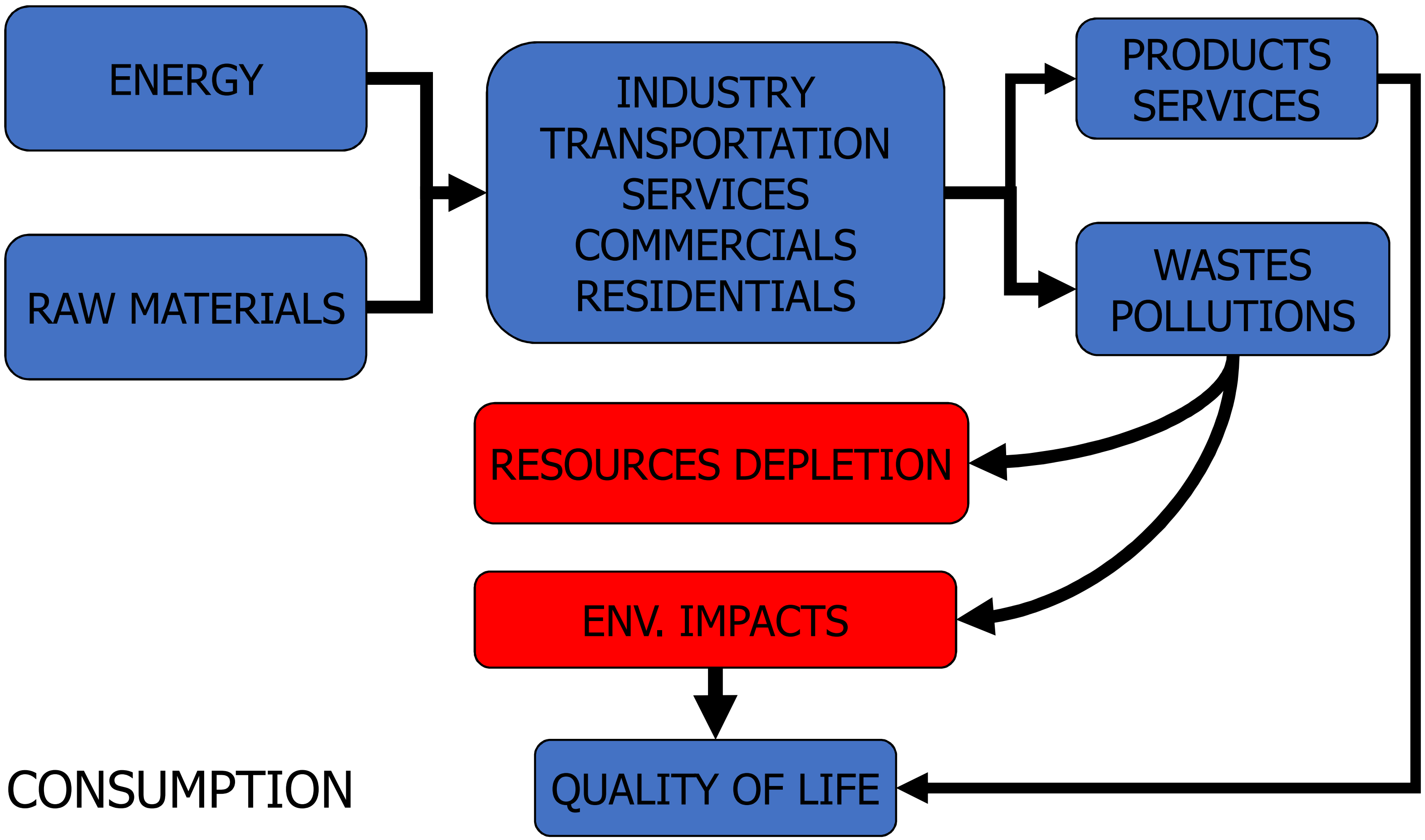
1. How far and how high the economic growth should be an optimum?
2. Is it possible for a zero economic growth rate?
3. How high the QoL should be?
4. Could sufficient QoL be possible without increasing demand?



Pooling questions

- Is it possible to have a zero economic growth for a country?(no growth as compared to the previous years)
  - Yes
  - No
- QoL for the developed countries and less developed countries should have the same level of standards?
  - Yes
  - No

1. Sustainability and milestones



RESOURCES CONSUMPTION

1. Sustainability and milestones

- The 1972 Stockholm Conference on the Human Environment is considered the official start of international environmental awareness,
- World Commission on Environment and Development -the Brundtland Commission's 1987 report, Our Common Future, defined the concept of sustainable development through the prism of– 'meeting the needs of the present generation without compromising the needs of future generations'– the need to evaluate trade-offs between resource use and environmental quality now and in the future
- The 1992 Rio Earth Summit (the United Nations Conference on Environment and Development, UNCED)– placed the links between improved environmental management and economic development at the core of the UNCED agenda.– Launched the United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty focused on reducing GHG emissions

1. Sustainability and milestones

- In 1992 the World Bank’s World Development Report focused on the links between development and the environment, and highlighted opportunities for ‘win-win’ policies that are good both for the environment and for economic development.
- The Global Environment Facility (GEF) was set up to support, with grant funds, the cost of incremental activities that have global benefits that would not be economically justified on a narrower, national accounting framework.

1. Sustainability and milestones

- In 1997, the Kyoto Protocol established legally binding obligations for developed countries to reduce their greenhouse gas emissions in the period 2008-2012
- The Protocol was amended in 2012 to encompass the period 2013-2020 through the Doha Amendment
- In 2015 the Paris Agreement was adopted, governing emission reductions from 2020 on through commitments of countries in ambitious Nationally Determined Contributions. The Paris Agreement entered into force on November 4, 2016.
- Governments in developing countries have become increasingly aware that environmental and natural resource degradation endangers the potential for long-term development.

1. Sustainability and milestones

- As a result, they are more receptive to the implementation of measures which ensure that development projects take both the environment and natural resources into account.
- Focus on rationalizing the use of environmental resources and minimizing, as far as possible, the adverse impacts of development projects through improved project selection, planning, design and implementation.
- In September 2015, UN Member States approved the 2030 Development Agenda and a set of Sustainable Development Goals (SDGs).

Figure 1: The global goals for sustainable development

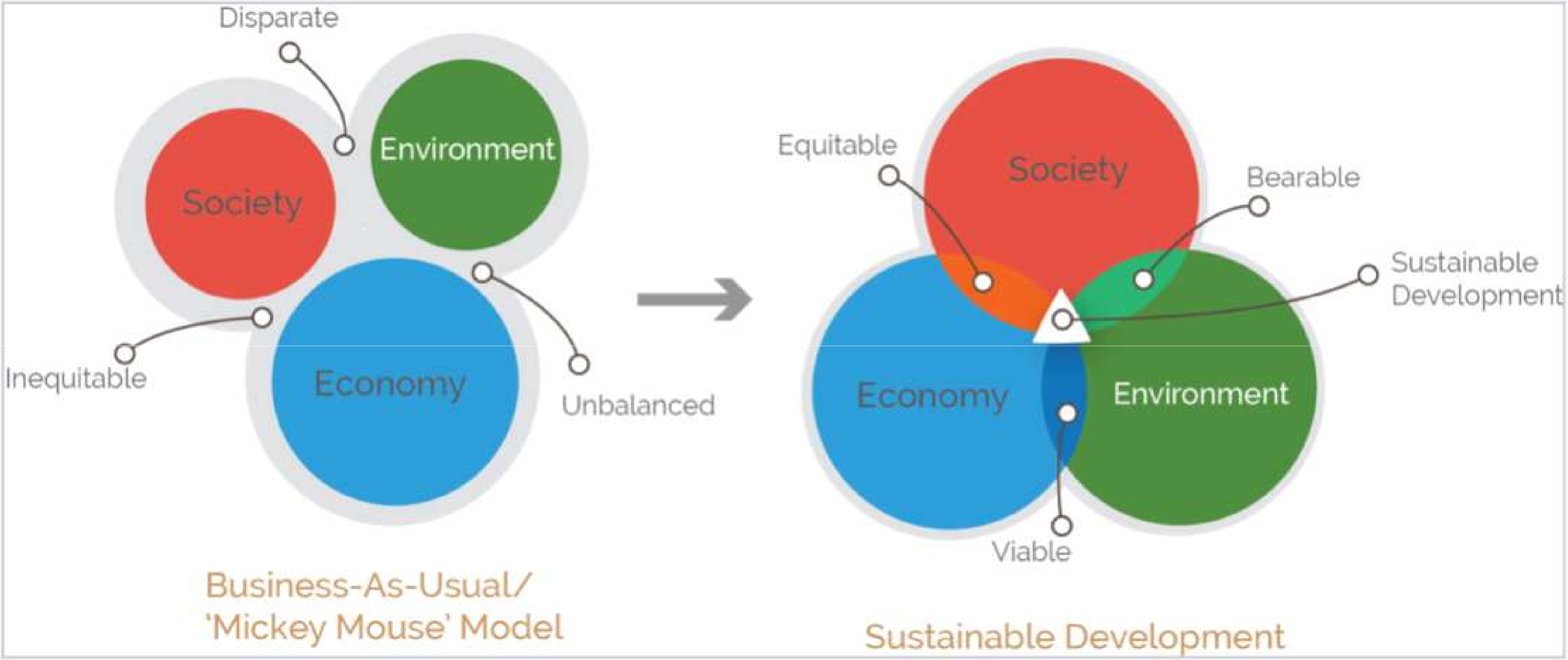
- **2030 Agenda**
  - 17 global Sustainable Development Goals (**SDGs**)
  - 169 specific targets

- **Paris Agreement**
  - Aligns with 2030 Agenda
  - Establishes global goals for climate action
  - **NDCs** are heart of agreement

Two historic 2015 achievements → ambitious, mutually reinforcing pathway for achieving sustainable development

2. Principles of Sustainable Development

- Satisfaction of human needs by the efficient use of resources
- Equity between generations
- Equity between countries, regions and communities
- Social equity
- Respect for ecological integrity and biodiversity
- Respect for cultural heritage/diversity
- Good governance decision-making



A more 'sustainable' model

The Sustainable Development

Concept

Sustainable development is a level of development in responding to economic and social needs and carrying on within the supporting capability of the environment (IUCN).

Principle

To elevate well-being of all peoples, and maintain the alternate development ways and opportunities for people of future generations.

Sustainable Resources Management

- **SUSTAINABLE DEVELOPMENT**
  - Development that provides economic, social and environmental benefits in the long term, having regard to the needs of living and future generations
- **DEVELOPMENT**
  - Application of resources [human, physical, natural and financial] to meet effective and prospective market and human needs. (improved quality of life)

Need for an Integrated Approach

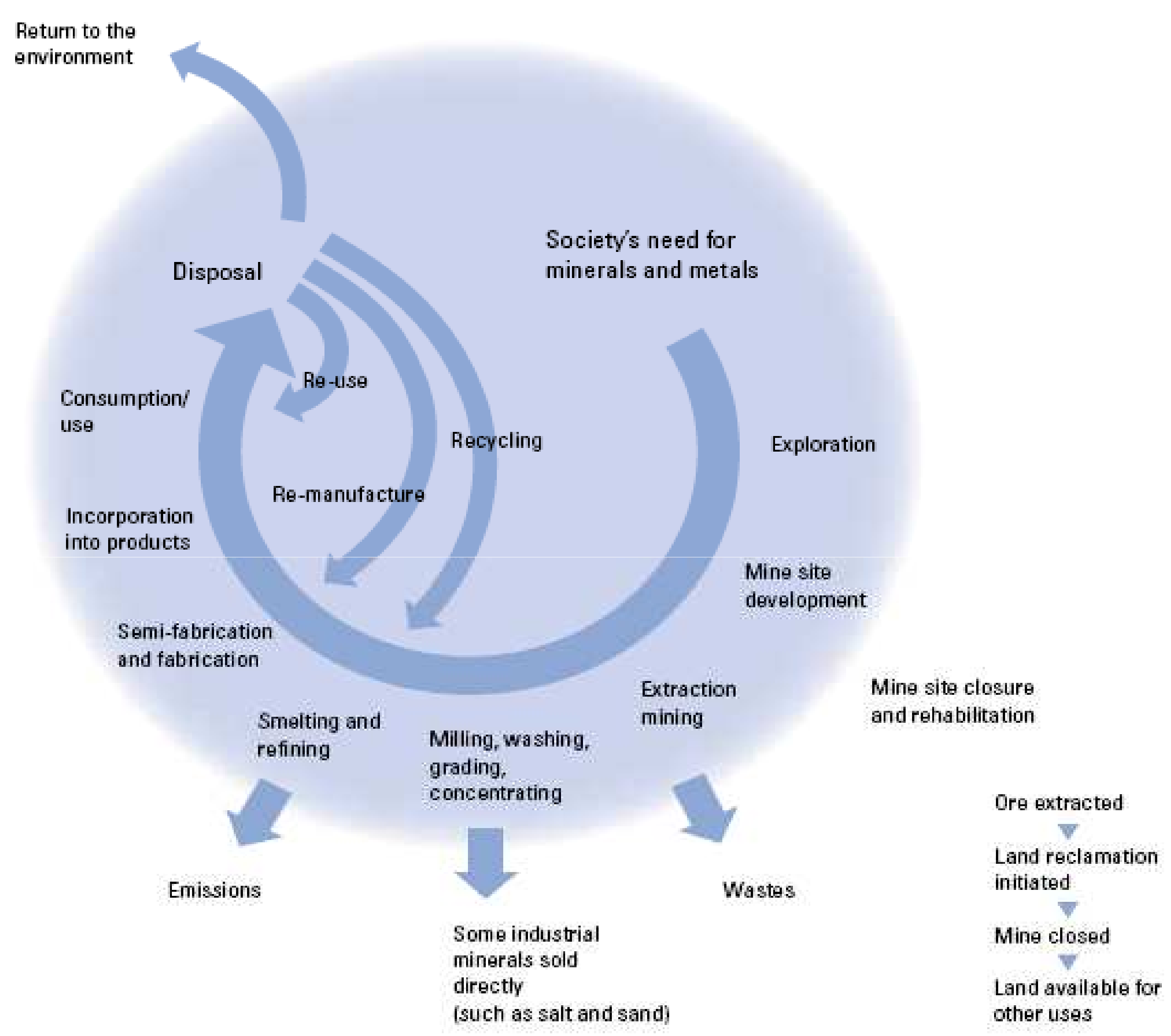
- Increasing resource use efficiency (technological innovation, better management, alternative materials, etc.) to meet the basic needs
- Reduce material and energy density of consumption
- Promoting sustainable development (economic, social and environmental)

Technological Requirements of Sustainability

- ***Resource Base Impacts*: Protect supplies of matter and energy (Avoid over-consumption)**
- ***Ecosystem Impacts*: Protect natural ecosystems (considering carrying capacity, do not impact them faster than they can recover)**
- ***Human Impacts*: Satisfy human needs, improve quality of life**
- **Social Impacts??? *(To be answered by all participants)***

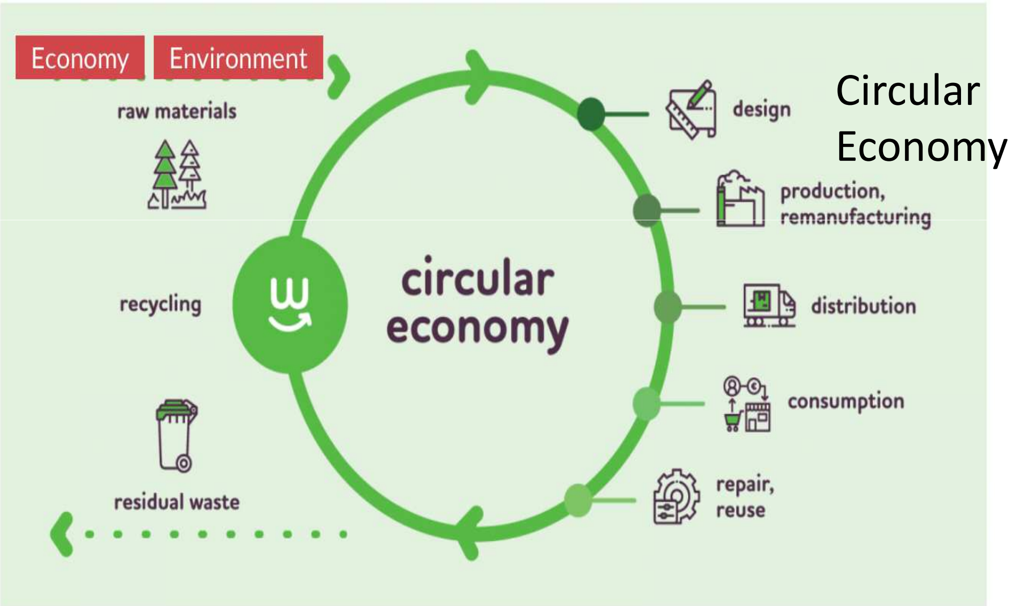
Pooling question

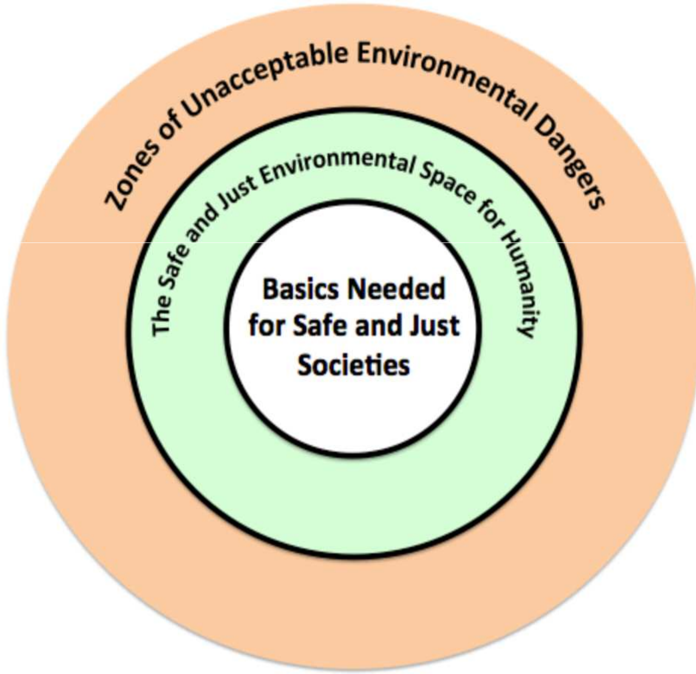
- Most important Social impacts requirements for sustainability?
  - Equitable distribution of benefits
  - Public participation
  - Sharing of ownership
  - Donations
  - Complaints management
  - Communications


Return to the environment
Disposal
Society's need for minerals and metals
Re-use
Consumption/ use
Recycling
Exploration
Re-manufacture
Incorporation into products
Mine site development
Semi-fabrication and fabrication
Extraction mining
Mine site closure and rehabilitation
Smelting and refining
Milling, washing, grading, concentrating
Ore extracted
Land reclamation initiated
Mine closed
Land available for other uses
Emissions
Wastes
Some industrial minerals sold directly (such as salt and sand)

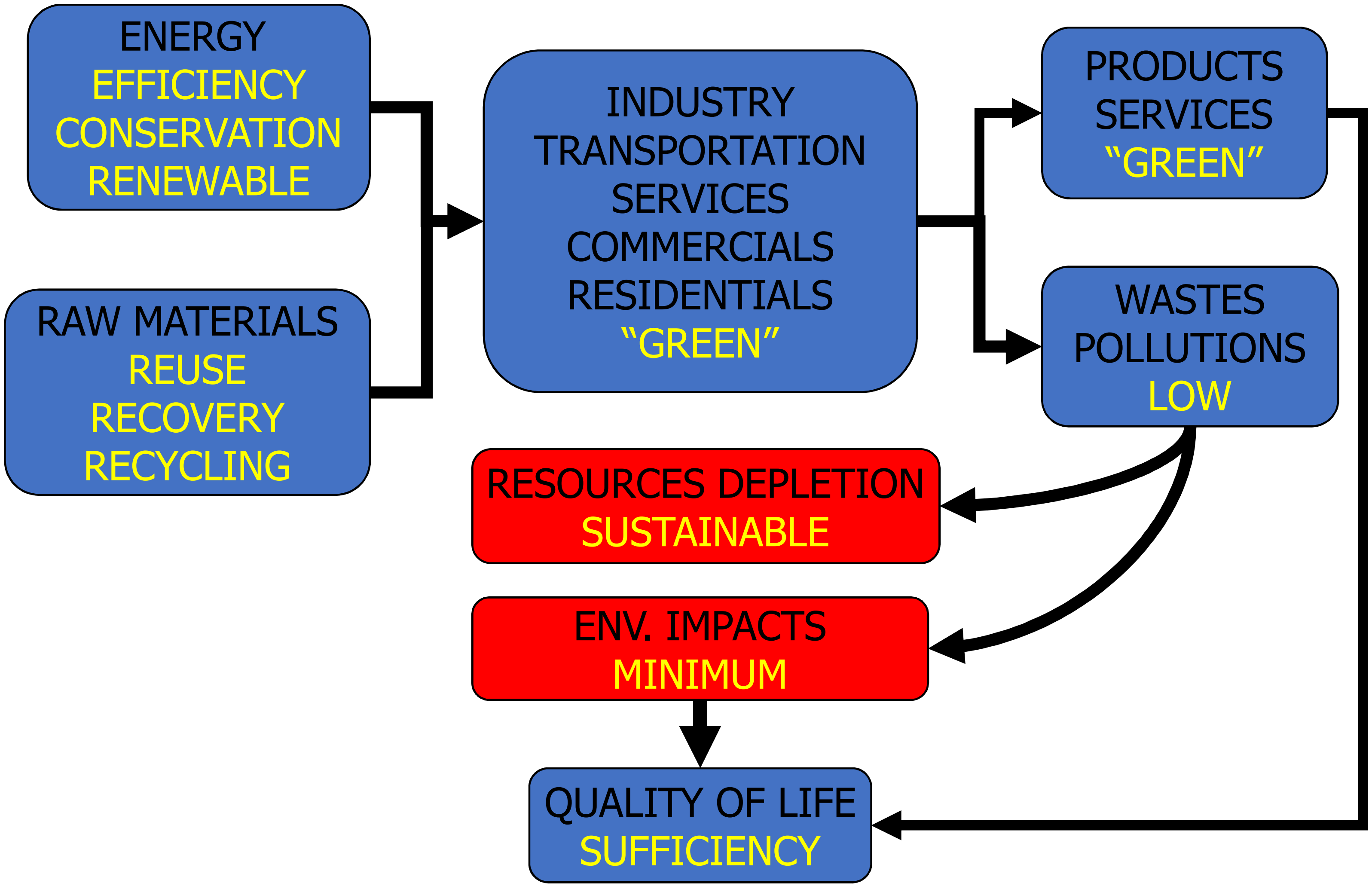
Circular Economy

Doughnut Economy





GREEN ECONOMY
RESOURCES CONSUMPTION



3. Development Planning

- the systematic management of resources to achieve definite targets or objectives within specific period of time.

- influence in the major socio-economic variables like GDP, consumption, savings, investment, prices and employment etc, of a country for a specific period of time to achieve its desired objectives.

A Plan

- Instrument to define a country's future direction/scenarios
- Long term plan vision /goal to achieve in a time period 15 to 20 years.
- Medium term plan vision of the country 3 to 7 years
- Immediate/annual plan implementation activities with budgetary estimates and responsible agencies.
- Notice: Planning is more direction-oriented in command economy and more indicative in liberalized economy.

What is Planning ?

- Three basic questions in planning:

  1. ***How is the current situation and position?*** – The present socio-economic status of the country, current demand and supply of water resource in the river basin, energy consumption, production and importation, identification of problems etc.

  (Analysis of the country's social and economic situation, available resources and constraints of the area etc. based on reliable data and information.)

What is Planning ? (Contd..)

2. What are expected to achieve in the future?

Goals and objectives of the government based on the long term vision of the country.

3. How to achieve the expected goals/objectives?

Analysis of the options available to achieve goals and objectives and choosing the most appropriate and efficient option.

Formulation of programs that best suits to carry out the strategy.

Contents of Development Plan

- Statement of Vision
- Statement of Goals
- Statement of Objectives.
- Macro-economic Framework

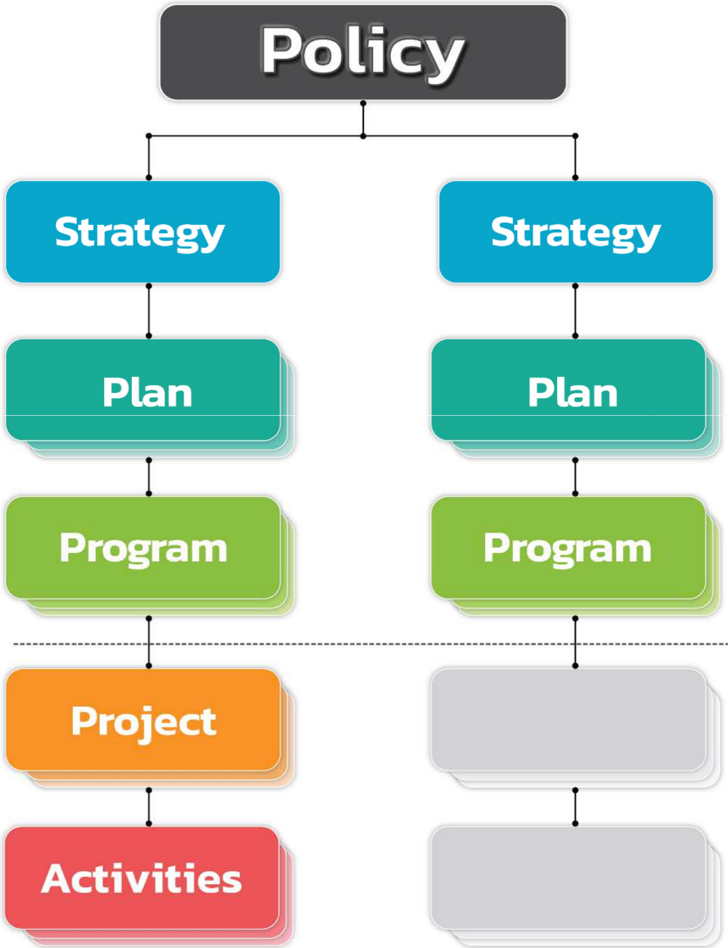
  (Targeted growth rates of various economic sectors, Investment requirements and source of funds to achieve the targeted growth rates.
- Strategies
- Priorities

Contents of Development Plan

- Quantitative Targets
- Sectoral objectives, strategies
- Programs/Projects of various sectors
- Allocation of resources.
- Implementation Mechanisms
- Monitoring and Evaluation Mechanism, and
- Expected Output/Outcomes.

4. Policy/Plan/Program

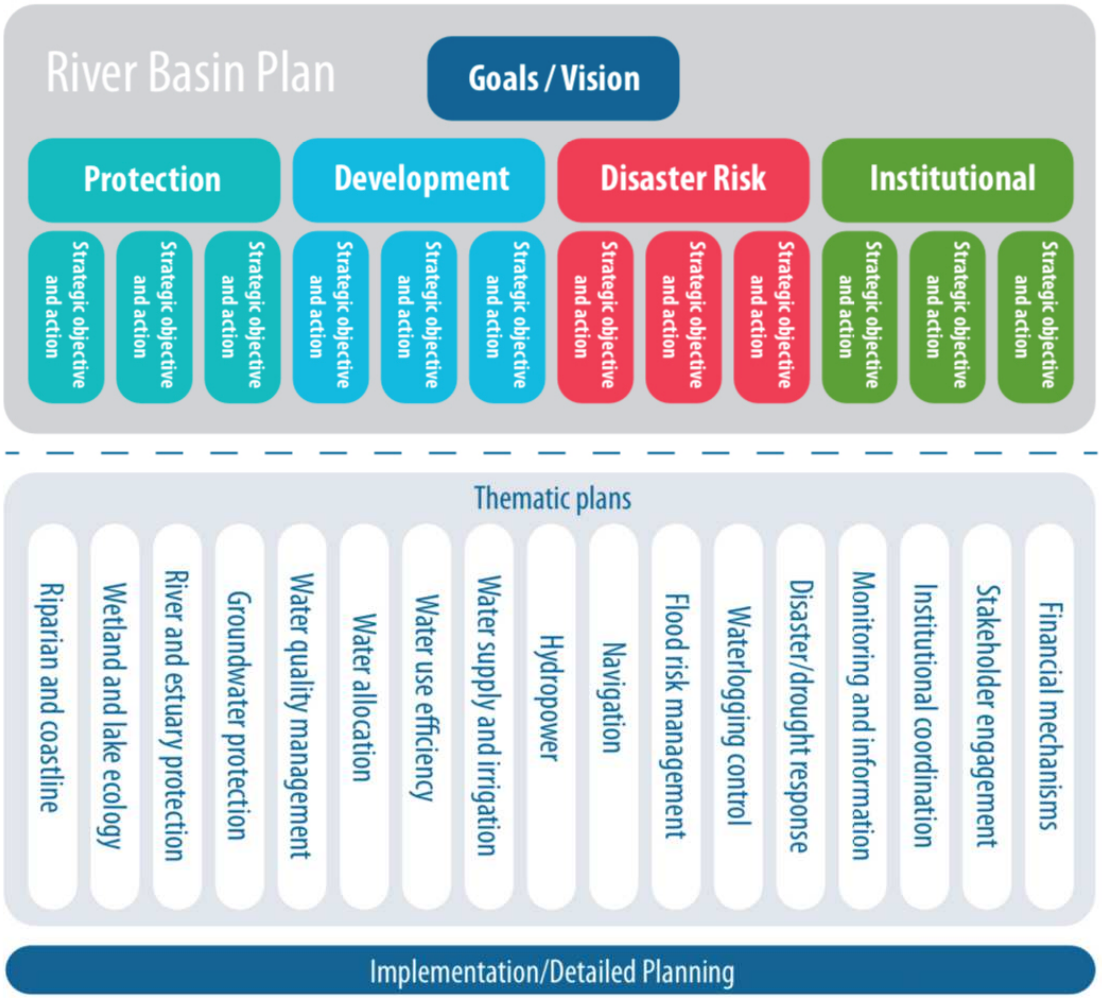
Policy
Plans
Programs
Projects
Activities



- Public Policy Study
- Scenario Analysis
- Strategic Environmental Assessment (SEA)
- Feasibility Study
- Masterplan Study

- Engineering Design
- Environmental Impact Assessment
- Environmental And Health Impact Assessment

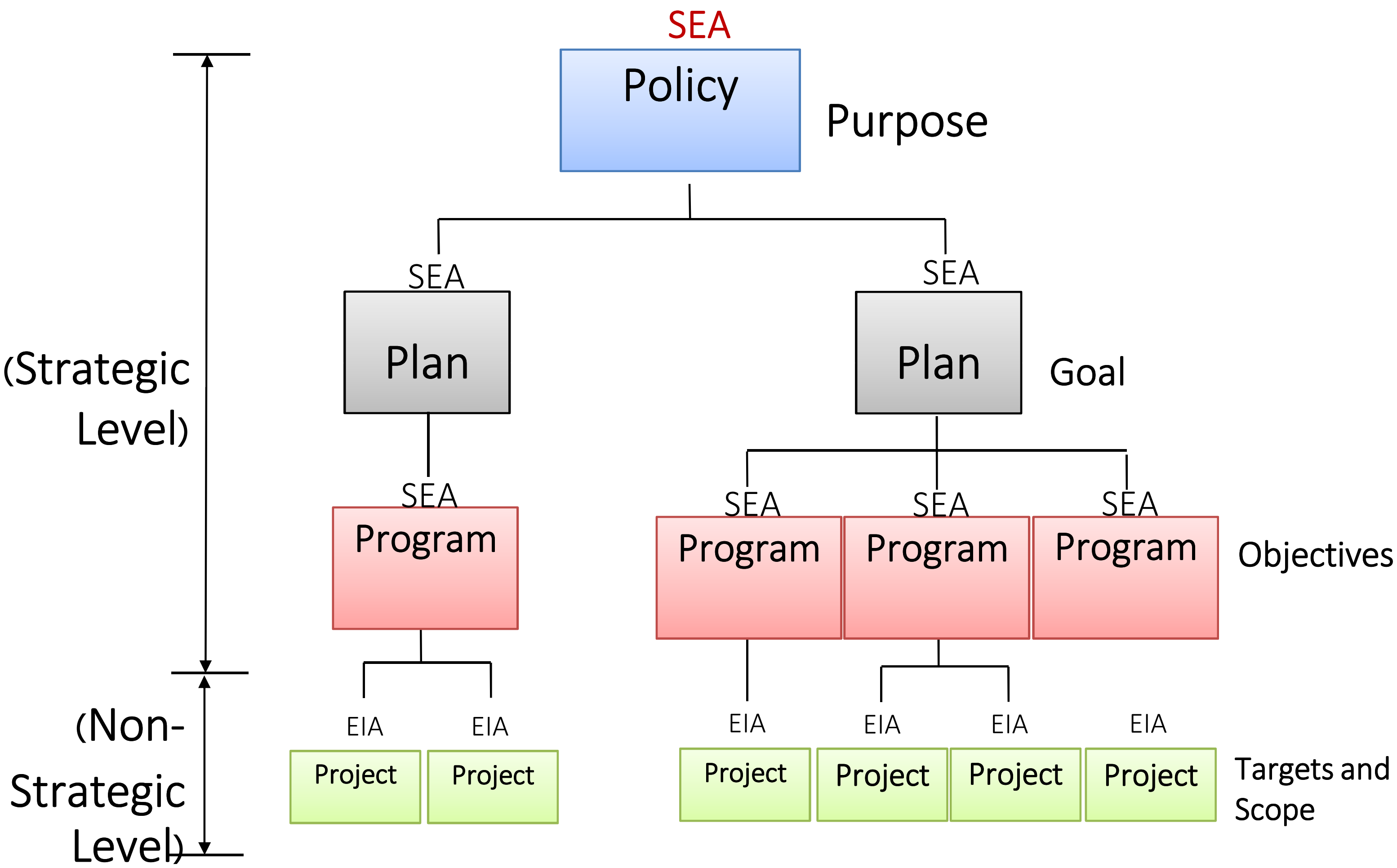
Figure 1: Interface between the elements of the basin plan and supporting thematic plans



Connection of Policy/Program/Project with SEA, EIA and Public Participation

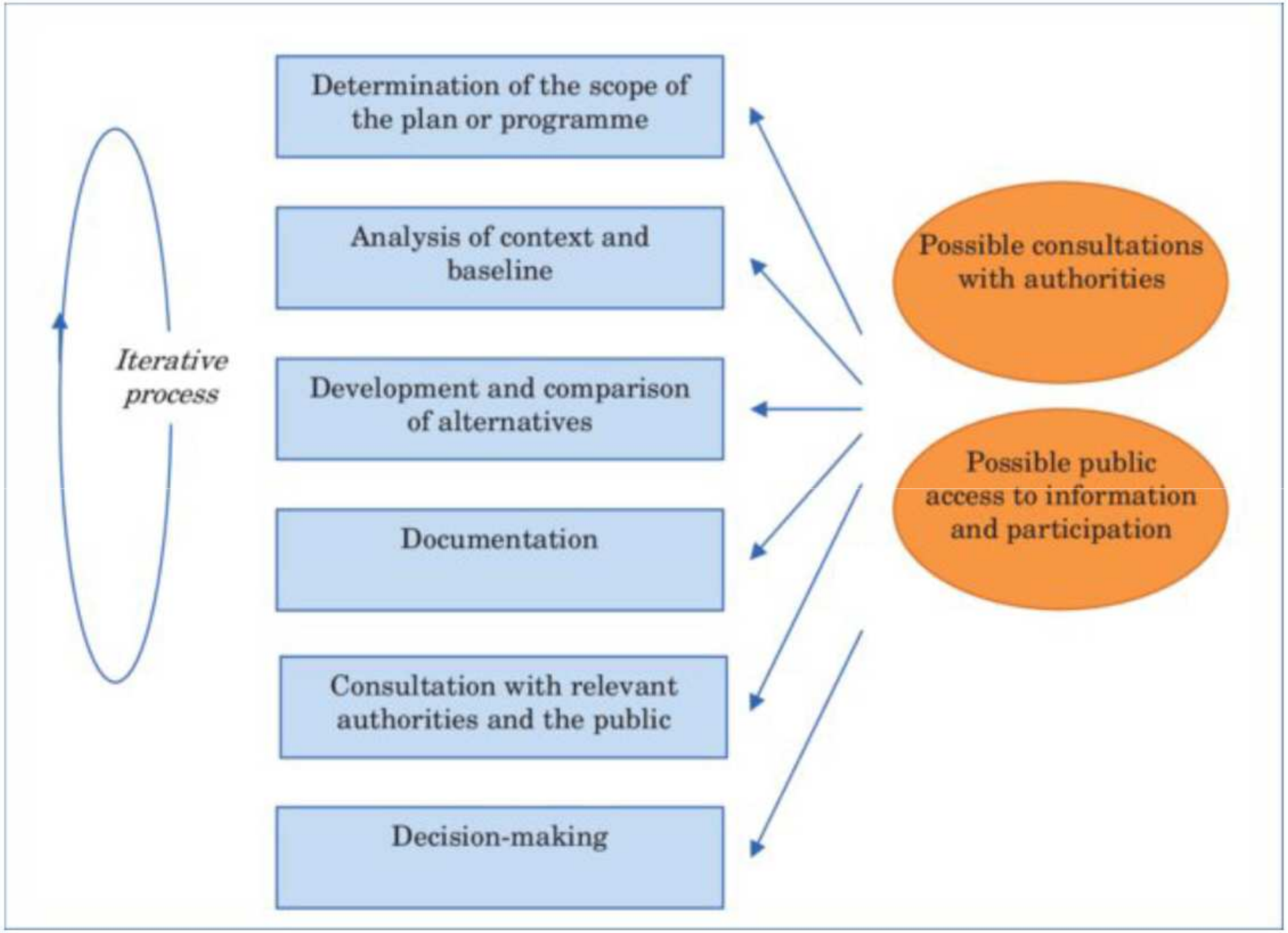
Sustainable Development

Policy, Plan and Program with SEA and EIA



5. Plan and program making tasks

- **Scope of the plan or program** : Visions, Goals, Objectives, Main issues
- **Analysis of the context and baseline** : Review of current development trends, constraints and opportunities for future development, other specific issues in the plan/program
- **Development and comparison of alternatives** : consideration of optional objectives, optional priorities proposed, options for activities proposed to implement these objectives or options for implementation arrangements.
- **Documentation :** Roles and responsibilities for implementation of the plan or program and designing monitoring arrangements.
- **Consultation with relevant authorities and the public.**
- **Decision making**
- **General monitoring of implementation.**


Determination of the scope of the plan or programme
Analysis of context and baseline
Development and comparison of alternatives
Documentation
Consultation with relevant authorities and the public
Decision-making
Iterative process
Possible consultations with authorities
Possible public access to information and participation

Planning approaches

- Conventional approach :
  - More top down requirements
  - involvement of stakeholders is limited

- Participatory approach :
  - More bottom up,
  - Consultations of communities, local, provincial and national level
  - More inclusive participations of various groups and NGOs

Scope of The Plan/Program

The scope of the plan or program is normally clarified during initiation, when the expected nature of the plan or program, its broad objectives and the issues to be addressed are determined

- **Scope of Development Plan**
- Assessment of current issues, prospects, priorities and proposals for development and matters
- Implementation strategies, agency-wise (including private sector) schemes/projects, development promotion rules, and resource mobilization plan
- Financial and resources requirements
- efficient system of monitoring and evaluation

Analysis of the Baseline

- Usually includes the review of the existing environmental and socio-economic conditions, current development trends, constraints and opportunities for future development, and other specific issues that should be taken into account and addressed in the plan or program.

Development of Alternatives

- The formulation and comparison of alternatives of the plan or program often takes place through consideration of optional objectives of the plan or program, optional priorities proposed in the plan or program, options for activities proposed to implement these objectives or options for implementation arrangements.

Development Alternatives

Goal: Sustainable Development

- **Satisfied Environment Quality:** mitigable & controllable and rehabilitable impacts
- **Satisfied Life Quality:** Equitable distribution among communities, region and country
- **Satisfied Economy:** Sharing growth among communities, region and country
- **Satisfied Social:** Public participation and acceptance
- **Satisfied Management and Technology:** Best appropriate available technology and good governance
- **Satisfied Resource Use:** Reduce resource use, minimize, recover and recycle of waste

Development of Alternatives

Policy/Plan/Program

Appropriate Development Alternatives:

- Follow SD principles
- Negative impacts can be compensated and/or reversible
- Positive impacts can be enhanced
  - Improve options of objectives
  - Different economic growth priorities and/or scenarios
  - Reduction of capacity/scale of operation
  - Relocating activities or changing of technology
  - Rescheduling of implementation
  - Etc.

Development Alternatives: Southern Coastal Areas of Thailand

ทางเลือกที่ 1

Basic Growth: no new significant economic activities created, Business as usual growth rate

ทางเลือกที่ 2

Develop fully based on potentials of the area: Tourism and agricultural industry are considered having potentials. New economic activities will be created

ทางเลือกที่ 3

Develop fully to accelerate economic growth: Creating new fast growing economic activities to supplement high growth rate target

Documentation/Reporting

- Preparation of a planning report together with an environmental or SEA report
- Assignment of the roles and responsibilities for implementation
- Providing monitoring and evaluation term of references.

Consultation

- Consultation with the relevant authorities and public (including transboundary consultations for plan or program that may have trans-boundary effects)
- Through conferences, seminars, focus groups and micro groups consultation, informal exchanges and direct interviews etc.
- The draft plan or program is then finalized

Decision making

- The plan or program is then finalized for decision-making.
- Approved to implement and budget allocated
- Assign responsible agencies

M&E

- Monitoring and evaluation of implementation.
- Correct and revise to improve plan and program

Thailand Transportation Development Master Plan

Vision : Towards Sustainable Transport

Goals :

- A hub for connectivity,
- Efficient transport system,
- Improve and increase safety,
- Promote energy savings and environmentally friendly transport,
- Upgrading the accessibility and increase the use of public transport,
- Increase mobility

Strategies & Main Issues

(1) modal shift from road transport to alternative modes which provide lower transport cost per unit,
(2) connectivity of neighbouring countries,
(3) mobility of people and commodity throughout the country, and
(4) enhancement of laws and regulations relating transport and logistics services.

These lead to several mega-projects which can be categorised into five groups; including:
(1) intercity rail infrastructure,
(2) mass transit system in Bangkok,
(3) road infrastructure,
(4) water transport infrastructure, and
(5) air transport infrastructure.

Thailand Transportation Development Master Plan

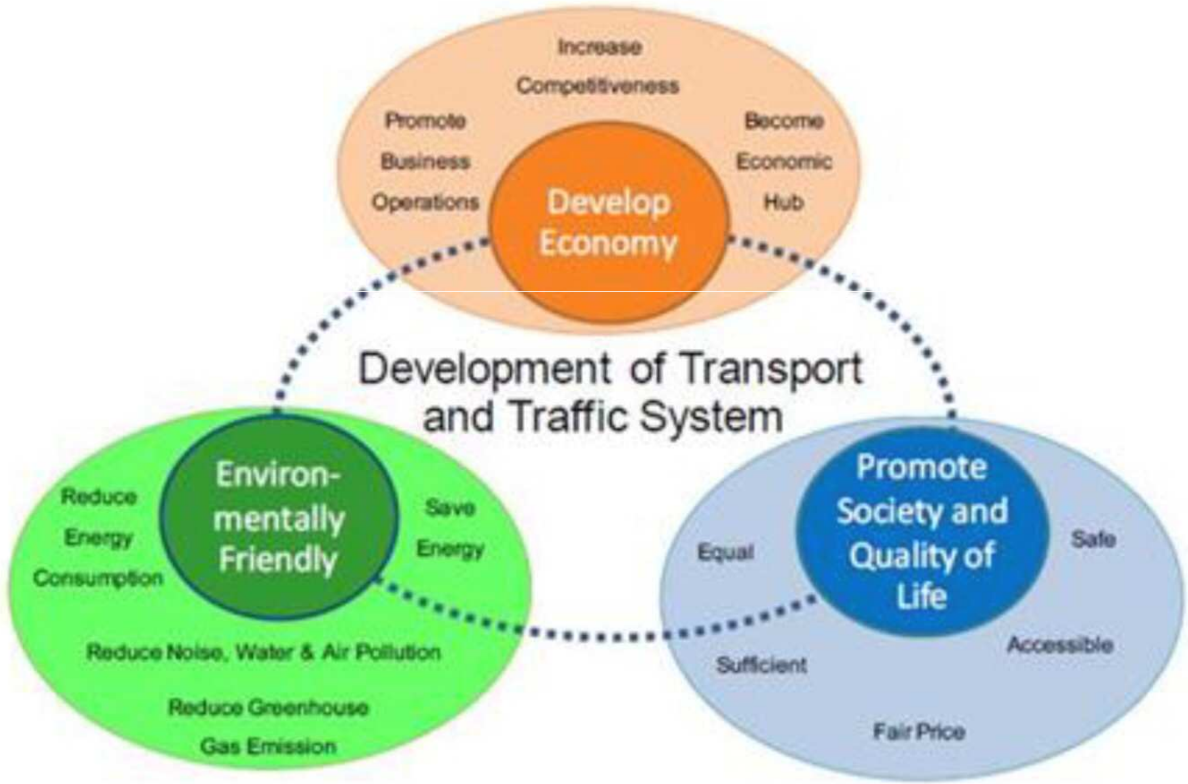


Table 1 Expected outcomes and impacts of strategies

Goals	Strategies	Outcomes	Impacts
G1) to make Thailand a hub for connectivity	1.1) Development and improvement to increase network capacity to become international transport hub 1.2) Strengthening of competition of Thai entrepreneurs	• Increased volume of transport via Thailand • Increased volume of goods transport via Thailand	• Increased GDP • Expansion of international trade • Increased economic role in the region
G2) to provide efficient transport system, good level of service and accessibility to economic zones and communities	2.1) Development and improvement of transport system efficiency to promote the expansion of development area to the region	• More convenient, fast and reliable transport on main routes linking economic zones • Increased level of satisfaction of transport users	• Fast and sustainable growth of economy in the region • Increased opportunities in business operations
G3) to improve and increase safety in passenger travel and freight transport	3.1) Improvement of infrastructure, vehicle standards and environment to provide qualified and safe transport 3.2) Adjustment of behavior of concerned people to have knowledge, understanding, consciousness and skills on transport safety	• Decreased number of accidents from transport • Decreased number of deaths from transport accidents	• Improved standard of living • Decreased economic and social loss from accidents
G4) to promote energy savings and environmentally friendly transport	4.1) Encouragement and support to shift mode of transport to rail and water transport 4.2) Promotion and development of technology to provide a use of clean and environmentally friendly energy and vehicles	• Decreased ratio and volume of energy consumption in the transport sector • Decreased pollution from the transport sector	• Reduced impacts to global warming • Reduced fuel import dependence • Increased competitive capacity

G5) to upgrade the accessibility and increase the use of public transport	5.1) Development of infrastructure and equal accessibility to public transport	• Increased number of passengers using public transport	• Increased social equality • Improved standard of living • Better community of living
G6) to increase mobility in passenger travel and freight transport	6.1) Improvement and development of infrastructure to reduce bottleneck and traffic problems 6.2) Increased in efficiency of traffic management	• Better average speed in travel and freight transport	• Alleviated traffic congestion • Decreased economic loss from transport and traffic problems

Plans under Thailand's Transport Infrastructure Development Strategies 2015-2022

Plan 1: Intercity Rail Networks Development
- 1.1 Tracking & Facilities Improvement
- 1.2 Dual Track Development

Plan 2: Improving Public Transport Networks & Services
- 2.1 Implementation of 10 Metro Lines
- 2.2 Construction of Roads & Bridges
- 2.3 Procurement of 3,183 NGV Buses and Depots

Plan 3: Enhancing Connectivity between Key Domestic Production Bases & Neighboring Countries
- 3.1 Accessibility to Agricultural & Tourist Areas
- 3.2 Connectivity between Hub & Key Production Bases
- 3.3 Connectivity between Gateways
- 3.4 Promoting Seamless Multi-Modal Transport

Plan 4: Increasing Water Transport Network
- 4.1 Inland Port Development
- 4.2 Coastal Port Development

Plan 5: Enhancing Air Transport Capability
- 5.1 Airport Capacity Expansion
- 5.2 Enhancement in Air Traffic Management Capability
- 5.3 Increased Fleet Utilization
- 5.4 Air Transport Industrial Park
- 5.5 Human Resource Development

Energy: Thailand Integrated Energy Blueprint (2015 - 2036)

5 Objectives:

1. Supply security
2. Cost competitiveness
3. Environment
4. Sustainability of Policy
5. Socioeconomic support for the needed

5 Plans:

Power Development Plan (PDP)
- 15-20% REs
- 20-25% Coal
- 30-40% Gas

Gas Plan
- Curb demand
- LNG structure

Alternative Energy Development Plan (AEDP)
- Zoning
- Competitive bidding

Oil Plan
- 20% biofuels
- Subsidy change

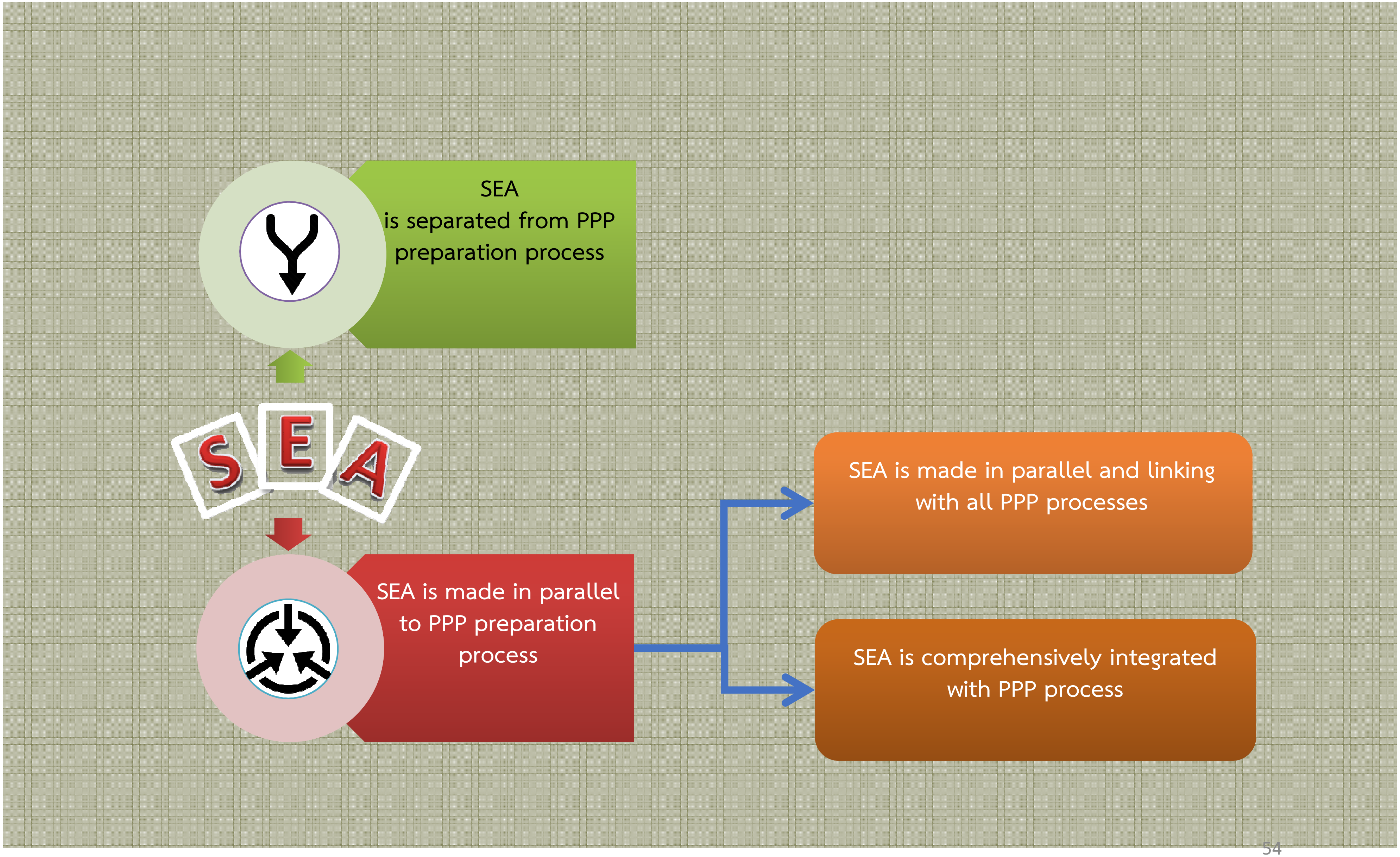
Energy Efficiency Plan (EEP)
- 30% energy intensity reduction

Source: MOE

6. Links between plan/program making and SEA

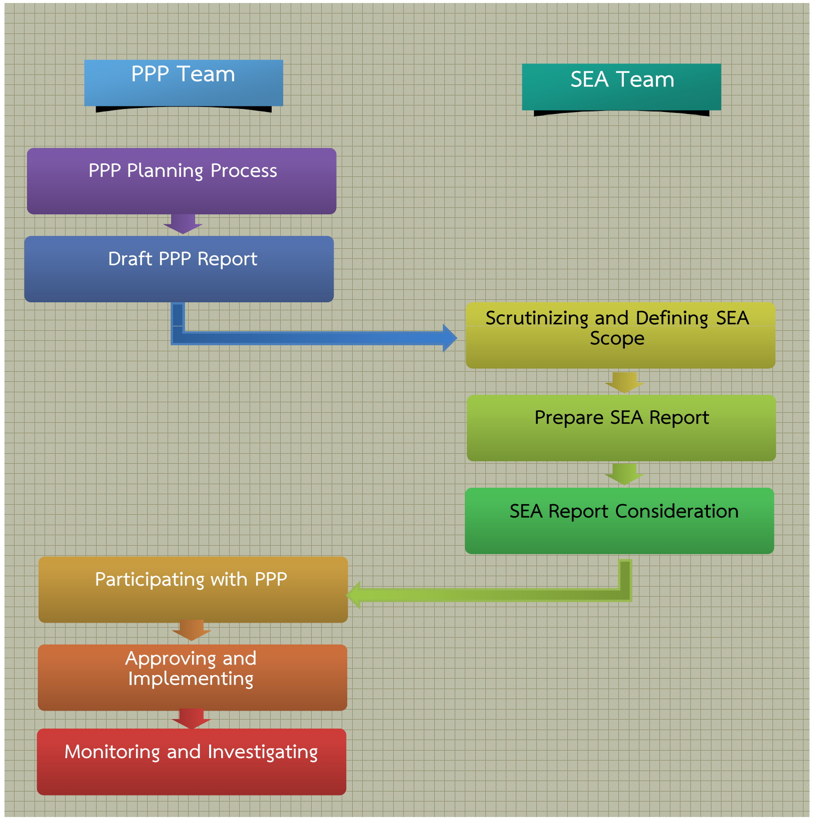
Plan/Program and SEA

Source: European Commission, Directorate-General for Energy and Transport, 2005


SEA
is separated from PPP
preparation process
SEA
SEA is made in parallel
to PPP preparation
process
SEA is made in parallel and linking
with all PPP processes
SEA is comprehensively integrated
with PPP process

PPP and SEA Report Preparation Procedure

1) SEA is separated from PPP preparation processes



Benefits

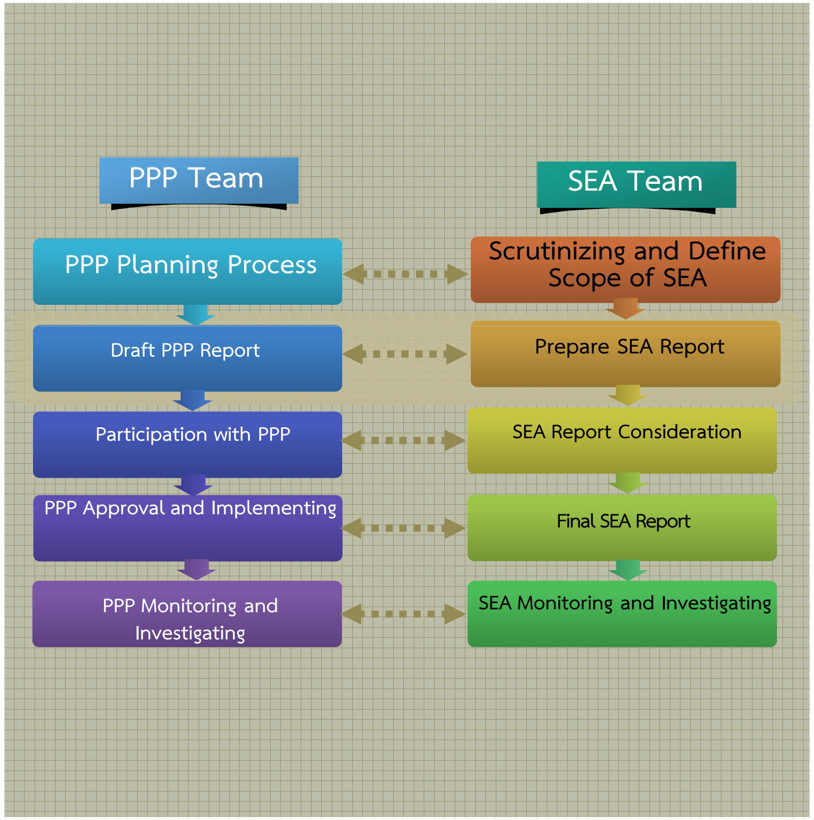
- It is easy and not complicate to implement

Limitations

- The option developed by SEA team may be disagreed by PPP team;
- Planning process will be delayed of the SEA team in awaiting to completion of the draft PPP report;
- Duplication has occurred on the determination and comparison of alternate options, data/information collection, hearing to opinion from relevant authorities and people and internal evaluation.

PPP and SEA Report Preparation Procedure

2) SEA is made in parallel and linking with all PPP processes



Benefits

- Delay will be significantly reduced;
- Time and cost saving including reduction on work redundancy;
- It is an opportunity to bring in ideas and different perspectives into consideration at the beginning and reduce the chance of "late surprises" and "conflicts" of both teams;
- Discussion between both teams help to define scope of works and crucial issues that should bring into consideration in different steps as well.

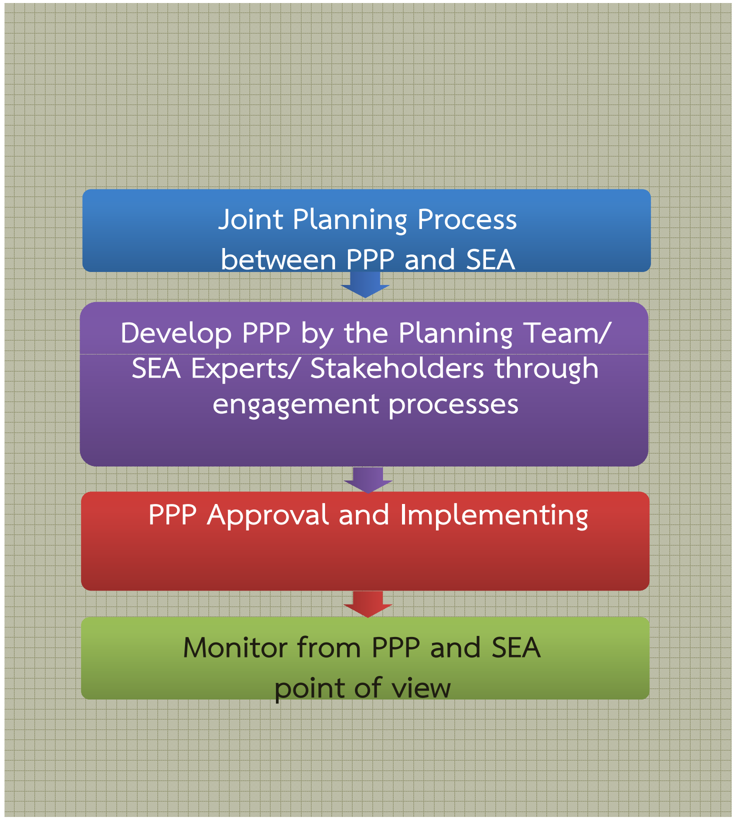
Limitations

This kind of SEA preparation will be possible and having good results if:

- SEA experts and PPP experts are willing to work together;
- Having good management, efficiency, and transparency.

PPP and SEA Report Preparation Procedure

3) SEA is comprehensively integrated with PPP process



Benefits

- Relevant disciplines will receive same set of data at the same time, knowledge, interest, expertise can be exchanged to determine and analyze the options and create a good cooperation in the preparation of draft PPP;
- Delay and cost will be reduced, create proper cooperation atmosphere between various groups which are usually having different attitudes and value of life.

Limitations

- Difficult to manage and with risk on transparency and confidence of stakeholders of the SEA preparation in obtaining defined conclusions.

7. Introduction to SEA

”SEA is a process directed at providing the authority responsible for policy development and the decision-maker with a holistic understanding of the environment, social and economic implications of the policy proposal” (Brown & Therivel 2000)

“SEA is a tool to help policy makers integrate the environmental, social and economic dimensions of sustainability into decision making” (ADB 2015)

Key point: SEA is a process of evidence-based analysis of social and environmental issues within the context of strategic planning

Basic Concepts

- Balanced analysis to build consensus, including recognising trade-offs and linking sector goals to national development
- Essential that all interested and affected stakeholders participate in key stages of the SEA
- The professionals executing the SEA must be seen to be unbiased and objective, with no pre-conceptions over what are desirable outcomes
- Legal Status: now a legal requirement in many countries, including across the GMS, to undertake an SEA for particular types of plans
- SEA must be fully integrated into, not separate from, the strategic planning process

Why SEA is needed?

- The emergence of SEA in planning reflected the restricted scope of traditional approaches to the treatment of social and environmental issues **and** the limitations of EIAs
- Experience shows us that decisions taken in isolation can often result in diseconomies, inefficiencies, unintended negative impacts
- Also traditional approaches are too technocratic with insufficient stakeholder involvement and little consideration of costs other than direct financial costs
- Changes to overall national development approaches – sustainable development, green growth, etc – had to be reflected in sectoral planning, which meant new tools were needed

SEA Aims and Objectives

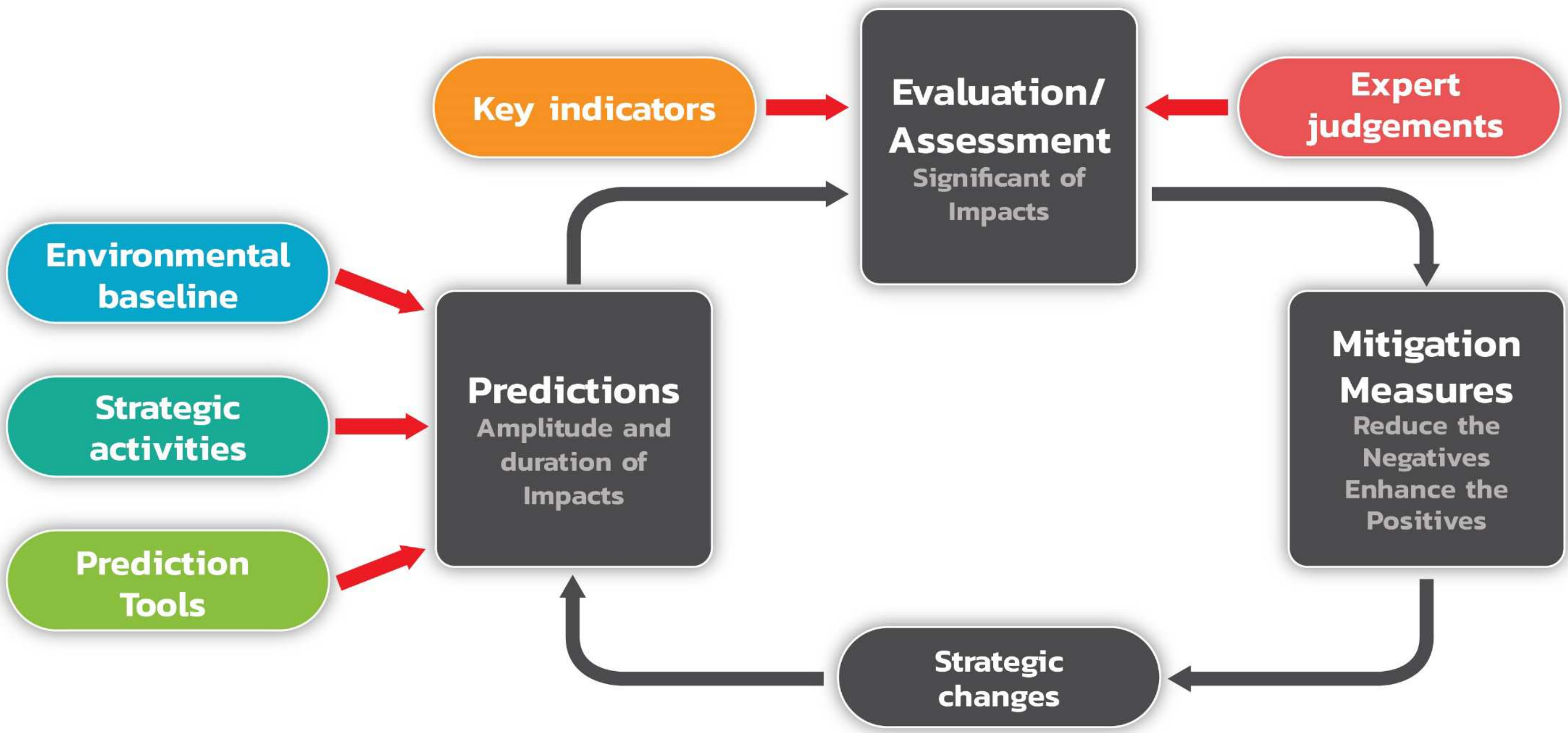
- **Helps achieve environmental protection and sustainable development by:**
  - Consideration of social & environmental effects of proposed strategic actions
  - Identification of the best practicable environmental option
  - Early warning of cumulative effects and large-scale changes

- **Strengthens and streamlines project EIA by:**
  - Prior identification of scope of potential impacts and information needs
  - Clearance of strategic issues and concerns related to justification of proposals
  - Reducing the time and effort necessary to conduct individual reviews

- **Integrates the environment into sector-specific decision-making by:**
  - Promoting environmentally sound and sustainable proposals
  - Changing the way decisions are made

SEA Basic characteristics

- Decision-oriented: not just about identifying problems, but also about agreeing solutions
- A successful SEA can be seen as a balance between technical analysis and structured consultations
- Strategic: assessment of potential impacts risks and of mitigation actions/costs
- Evidence: includes quantitative analysis of social and environmental impacts in the plan, with economic valuation where possible
- Alternatives: SEAs contain scenarios that consider feasible alternative development options for achieving the desired planning outcomes
- Integrate social and environmental factors that have traditionally been treated as externalities
- Costs and benefits of social and environmental impacts internalized into overall economic assessment of the development plans



Basic of Linkage for Strategic Environmental Assessment

The Overall Methodology for a successful SEA

There are many different approaches to SEA: the details will vary but all good SEAs have some shared fundamental characteristics:

- Clear relationship to the strategic planning process it is a part of
- Balanced, objective and evidence-based
- Structured process of consultations and intended to build a consensus among stakeholders
- Analysis of alternatives to the main plan, usually through the construction of scenarios
- Should provide evidence base for key parts of an SEA: Prediction, Evaluation and Mitigation

	SEA ⟵ ⟶ EIA ⟵ 'Higher tiers' / 'Lower tiers' ⟶			
Descision making level	Policy	Plan	Programme	Project
Nature of action	Strategic, visionary, conceptual			Immediate, operational
Ouputs	General			Detailed
Scale of impacts	Macroscopic, cumulative, unclear			Microscopic, localised
Time scale	Long to medium term			Medium to short-term
Key data sources	Sustainable development strategies, state of the environment reports, visions			Field work, sample analysis
Type of data	More qualitative			More quantitative
Alternatives	Area wide, political, regulative, technological, fiscal, economic			Specific locations, design, construction, operation
Rigor of analysis	More uncertainty			More rigor
Assessment benchmarks	Sustainability benchmarks (criteria and objectives)			Legal restrictions and best practice
Role of practitioner	Mediator for negotiations			Advocator of values and norms Technician, using stakeholder values
Public perception	More vague, distant			More reactivate (NIMBY)

Figure 4: The changing focus of SEA from lower to higher tiers

8. Introduction to Integrated Resource Planning (IRP)

- a planning approach that has the potential to take a society-wide perspective,
- incorporate public participation in meaningful ways, and
- has a strong track record in creating plans that are low-cost, low risk, and with outcomes that minimize environmental and social impacts

- IRP has close associations with energy efficiency:

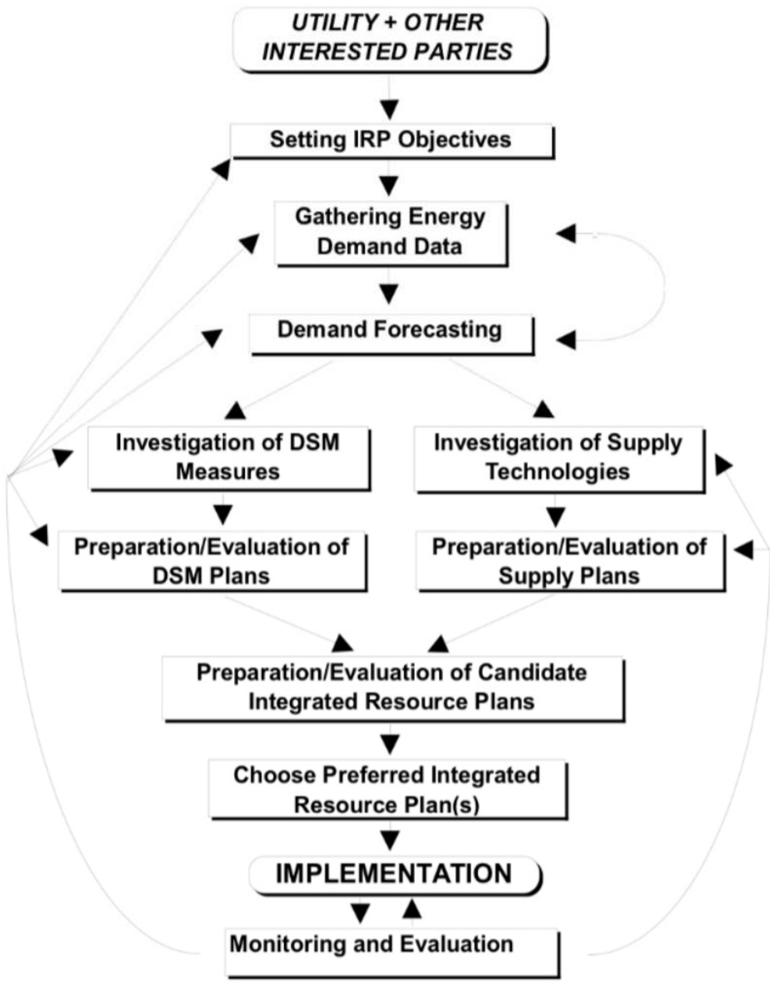
8. Introduction to Integrated Resource Planning (IRP)

- A public planning process and framework within which the costs and benefits of both demand and supply side resources are evaluated to develop the least total cost mix of utilities resource options. Considering environmental damages caused by electricity supply/transmission and identifying cost effective energy efficiency and renewable energy alternatives

Conventional power sector planning

- Least Cost Planning
- Least Cost Generation Planning from the Utilities's Financial Perspective
- Country's context and regulations
- Power Development Plan (PDP)
  - Load Forecasting
  - Assumptions about investment and operating costs of options (limited)
  - Optimization among options (limited)

Figure 2: The Integrated Resource Planning process. Source: von Hippel and Nichols 2000



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