Presentation 3.1a

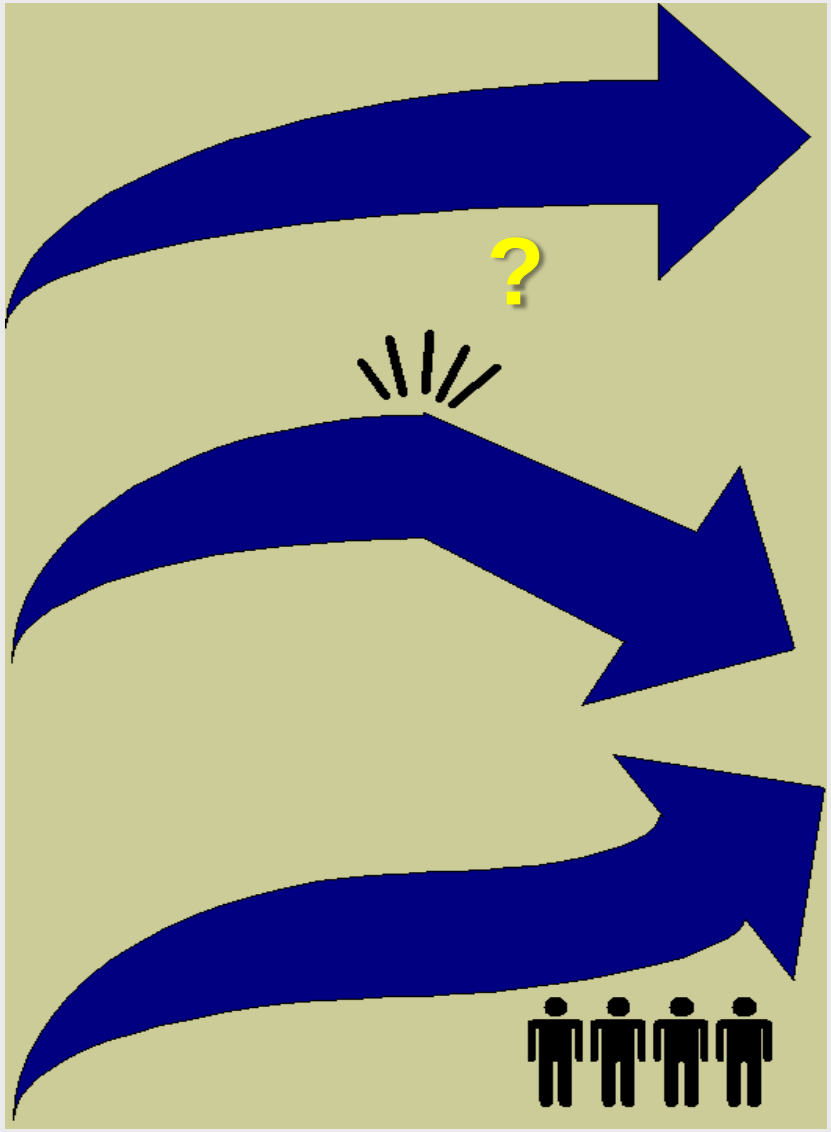
STRATEGIC ENVIRONMENTAL ASSESSMENT:

CONSTRUCTING SCENARIOS

Why Scenarios?

- Stories of the future told to inform current decision-making
- Good scenarios are:
  - Plausible
  - Consistent
  - Engaging
  - Compelling
  - Informative
- An effective way to plan for the future where uncertainties exist

Why the Future is Uncertain



Ignorance

Our understanding is limited

Surprise

Social and environmental systems can evolve in unexpected ways

Volition

Human choice matters

Scenarios for *Persuasion*

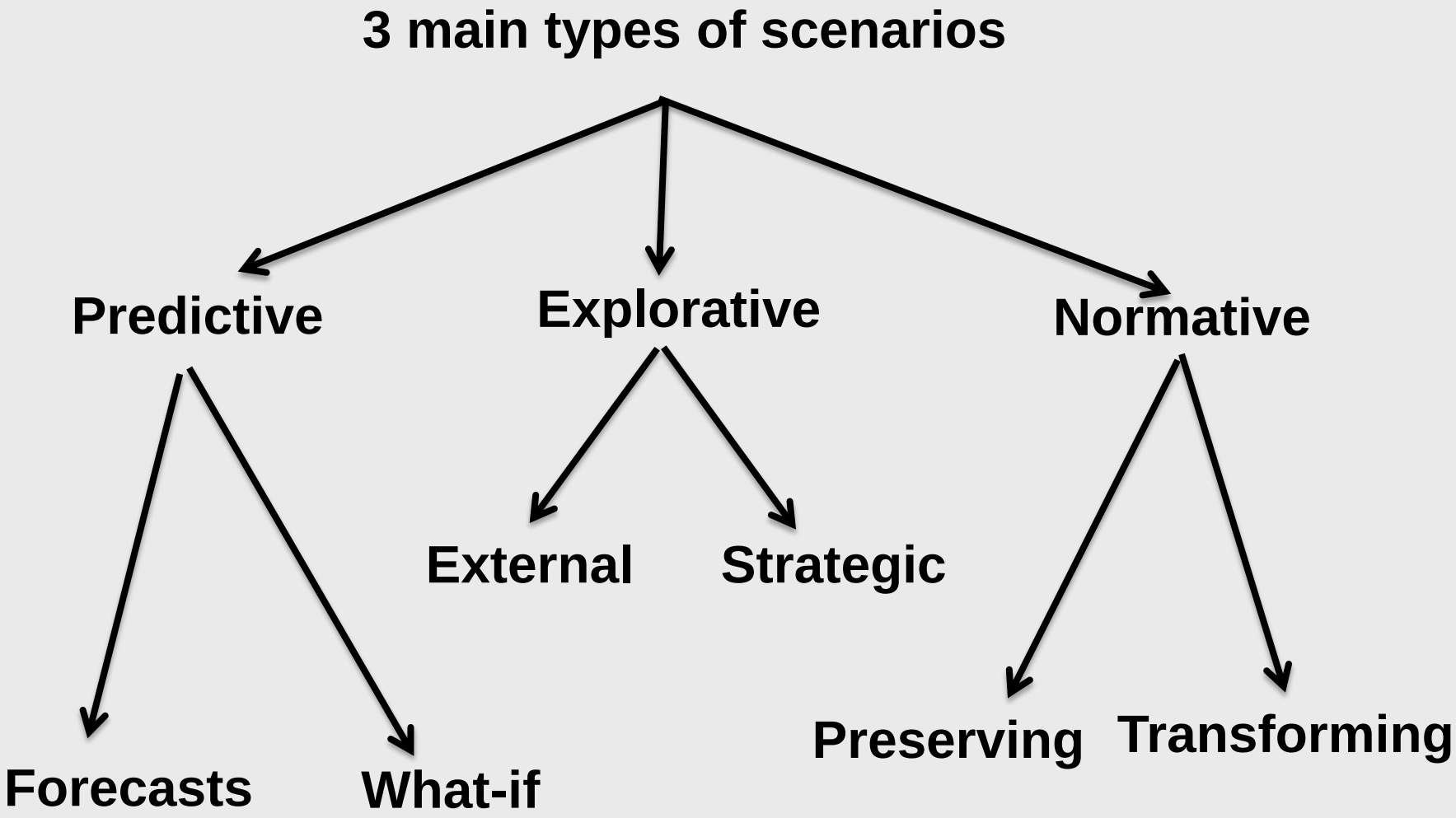
Scenarios can be used to

- Illuminate potential problems, and bring future problems into focus
- Provoke debate
- Expand the range of options under consideration
- Clarify and communicate a technical analysis
- Evaluate policies in the face of an uncertain future

Scenario Choices

- There are different types of scenarios and they can be used for different purposes
- Scenarios are a key part of any SEA process and are also widely used in many planning systems
- Making sure the approach used is the right one for the purpose is essential

Types of Scenarios



Predictive Scenarios

"What will happen?"

- Defined by assumptions about the types & rate of future change
- Forecasts: Most likely development
- Can also be 'high' and 'low' forecasts
- What-if scenarios: what will happen given specific event or events
- e.g. – what will happen if the price of oil is $200 a barrel?

Explorative Scenarios

"What can happen?"

- Explore the future from a variety of perspectives
- Used as a set of scenarios that illustrate a range of potential developments
- Long time horizon & focus on profound change
- External: the impact of variance in external factors beyond your control
- Strategic: the consequences of different strategic decisions over factors you do control

Normative Scenarios

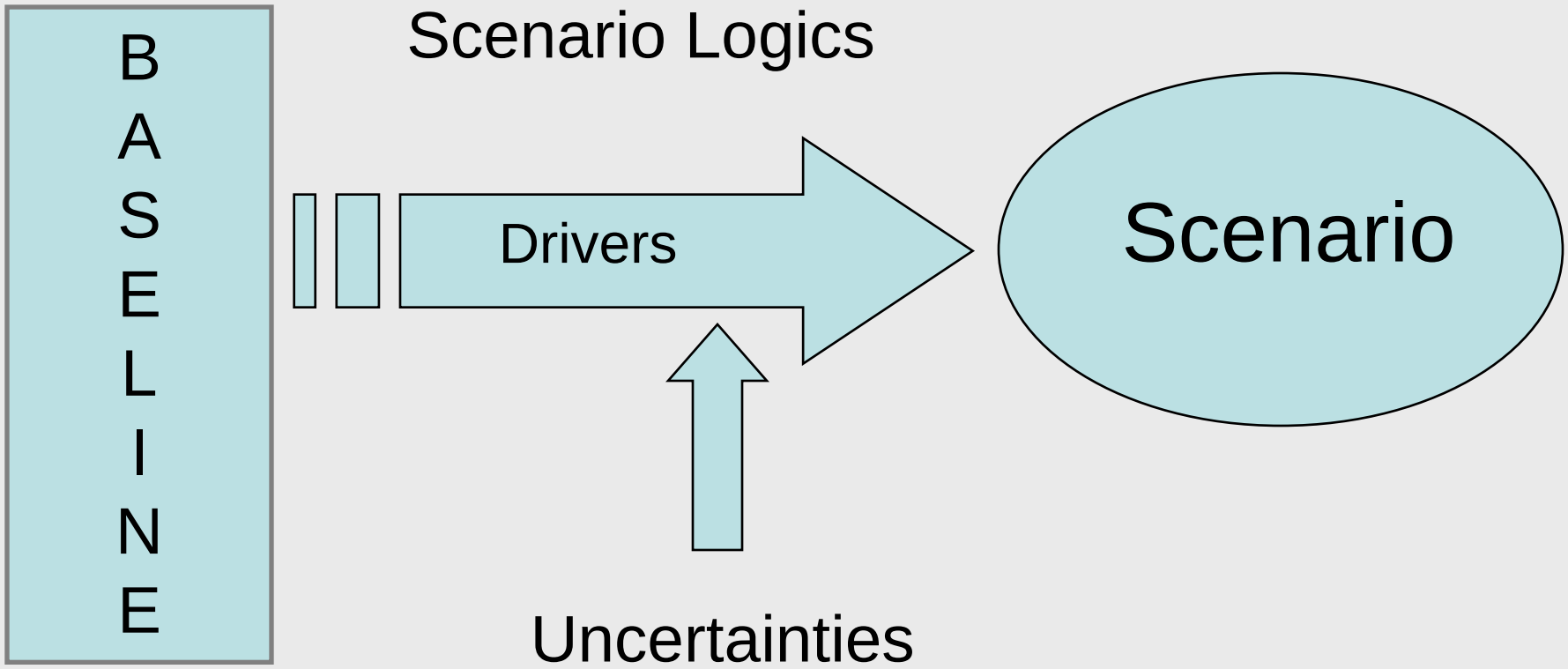
"How can a specific target be reached?"

- Explore the consequences of different approaches to reach a set goal
- Preserving: "how can the target be reached by adjustments to the present system? – often used for short-term targets
- Transforming: "what fundamental changes are needed to achieve the target" – usually used for long-term targets

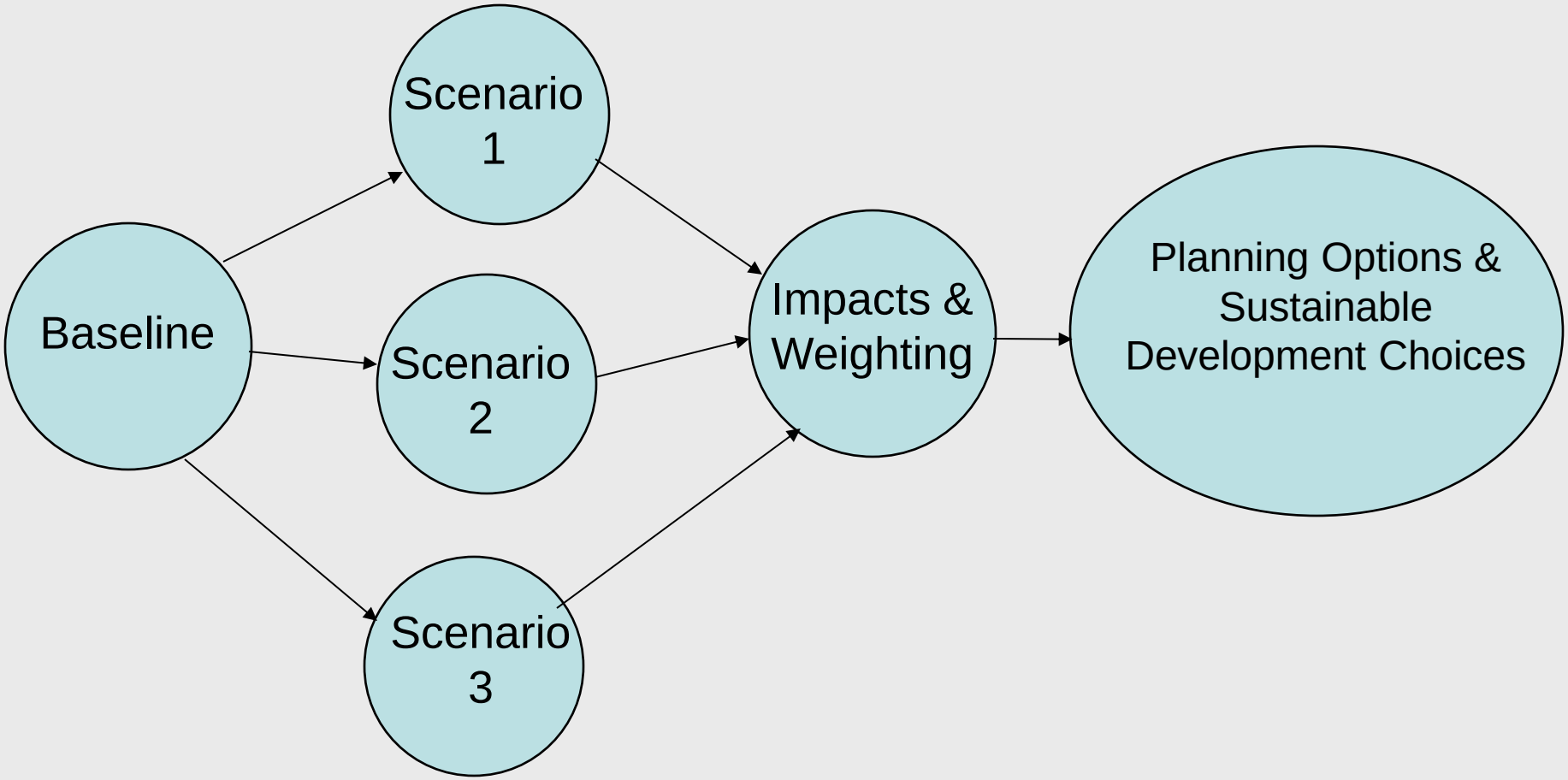
Overview of the Process

1. Set boundaries (time, space, themes)
2. Identify what drives the story of the present
3. Identify issues for the future
4. Identify the type of exercise
5. Construct a scenario framework
6. Begin drafting scenario narratives
7. Decide on the form for the quantitative analysis & begin carrying it out
8. Assess, learn, revise

Construction of Scenarios



Outputs of Scenarios



An Example: PDP VI SEA

- EOC supported the preparation of an SEA of the Hydropower Master Plan in the context of the PDP VI in Viet Nam
- One of the key goals was to understand the full social and environmental implications of hydropower development within the overall selection of power generation choices in the PDP
- The scenarios in the SEA provided the means to generate this understanding

Constructing the Scenarios 1

1. Identify hydropower schemes in PDP VI where decision on building still open to influence: 21 schemes
2. Define 5 scenarios: from base where all built through progressively less hydropower to where none of 21 built
3. Define alternative generating sources to replace lost hydropower capacity
4. Assess total social and environmental risks and impacts for each scenario, both hydropower and alternatives

Constructing the Scenarios 2

5. Define (where possible) economic valuation of social and environmental costs & benefits for each scenario
6. Internalize costs into overall economic assessment of each scheme & for each scenario
7. Assess weighting in relation to key strategic issues
8. Define actions to internalize cost & mitigate impacts

Alternative Energy Scenarios

Scenario	Strategy
Base	According to PDP VI
Alternative 1	Hydropower projects with NTPI < 60 are replaced by thermal power
Alternative 2	Hydropower projects with NTPI < 65 are replaced by thermal power
Alternative 3	Hydropower projects with NTPI < 75 are replaced by thermal power
Alternative 4	All planned hydropower projects are replaced by thermal power
Alternative 5	The planned hydropower projects are not implemented and not replaced by thermal power

The Results

Total Present Value of Cost of Supply and Economic Cost of Emissions

Scenario	Strategy	Present Value of Supply ($Million)	Present Value of Economic Costs of Air Pollution ($Million)	Total Present Value ($Million)	Difference in Total Present Value ($Million)
Base	According to Master Plan VI	5,435.65	19.45	5,455.10	**0.00**
Alternative 1	Hydropower projects with TPI < 60 are replaced by thermal power	5,445.48	679.13	6,124.61	**669.51**
Alternative 2	Hydropower projects with TPI < 65 are replaced by thermal power	5,729.46	1,708.57	7,438.03	**1,982.92**
Alternative 3	Hydropower projects with TPI < 75 are replaced by thermal power	6,268.42	2,845.34	9,113.76	**3,658.66**
Alternative 4	The planned hydropower projects are not implemented at all	7,741.38	4,555.49	12,296.87	**6,841.76**
Alternative 5	The planned hydropower projects are not implemented and not replaced by thermal power	76,937.87	0	76,937.87	**71,482.77**

Conclusions from the SEA

- The use of the scenarios was the vehicle through which the SEA was able to:
  - Bring stakeholders together to understand the full costs of hydropower development
  - Internalize the costs of different power generation options
  - Influence the development of SEA approaches in Viet Nam