Module 1. Decision Context

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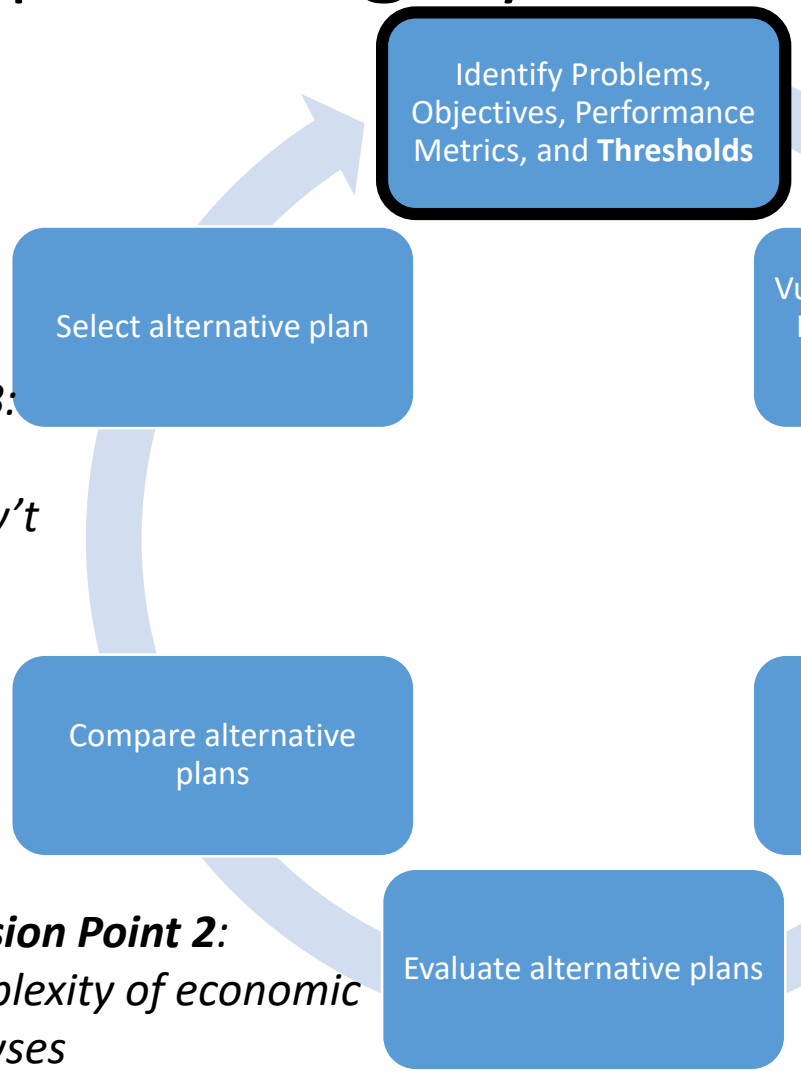
JOINTISZA PROJECT
Strengthening cooperation between river basin management planning and flood risk prevention to enhance the status of waters of the Tisza River Basin

WP6 Activity 6.4 Pilot on climate change induced specific water quantity issues
Shared Vision Planning Pilot Methodology and Stakeholders workshop

26-27 October 2017, Szolnok, Hungary

Where does climate uncertainty fit in a traditional planning cycle?



Stress Test and Analysis

***Decision Point 1**: Key drivers?*
Strategy Direction?

Build bigger? Or Adaptation pathways?

***Decision Point 2**:*
Complexity of economic analyses

***Decision Point 3**:*
Influence of institutional/gov't capacity?

Defining a Problem or Opportunity Statement

PROBLEM/OPPORTUNITY STATEMENT SHOULD….

Be broad enough to include all potential solutions

- *It should not infer solutions*

Consider current and future conditions

- *It is a vision for where to be in the future*

Be reevaluated and modified in later steps

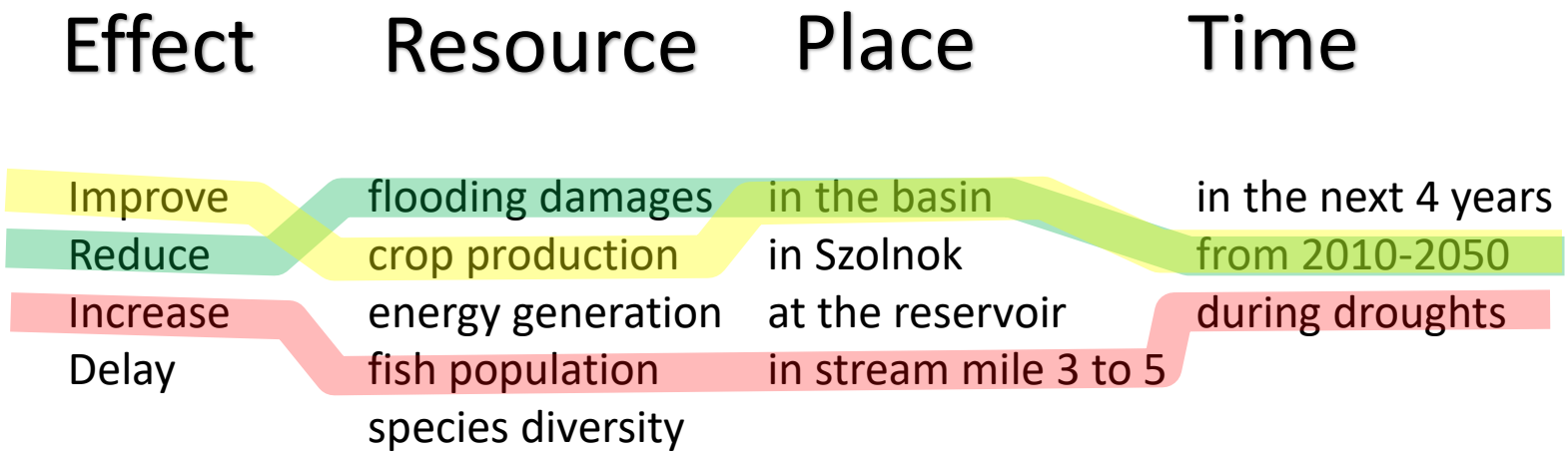
EXAMPLE: WHICH IS A PROBLEM OR OPPORTUNITY?

1. We would like to be a regional economic hub that maintains our cultural identity
2. There is institutional weakness in the management of our region's irrigation
3. We need a dam for more reliable energy
4. We have water shortages in the dry season that result in conflict between users

Planning Objectives

Are related to problem or opportunity statement
Specify the desired result of the planning process
May differ for each stakeholder group.

Example…



Performance Indicators

Allow planners to compare current system performance with proposed system performance

Simplest metrics for alternative plans are hydrologic and hydraulic statistics

- Exceedence frequencies
- Maximum stage
- Safe yield
- Minimum monthly instream flow

Performance Indicators measures are more powerful; they measure progress towards meeting planning objectives.

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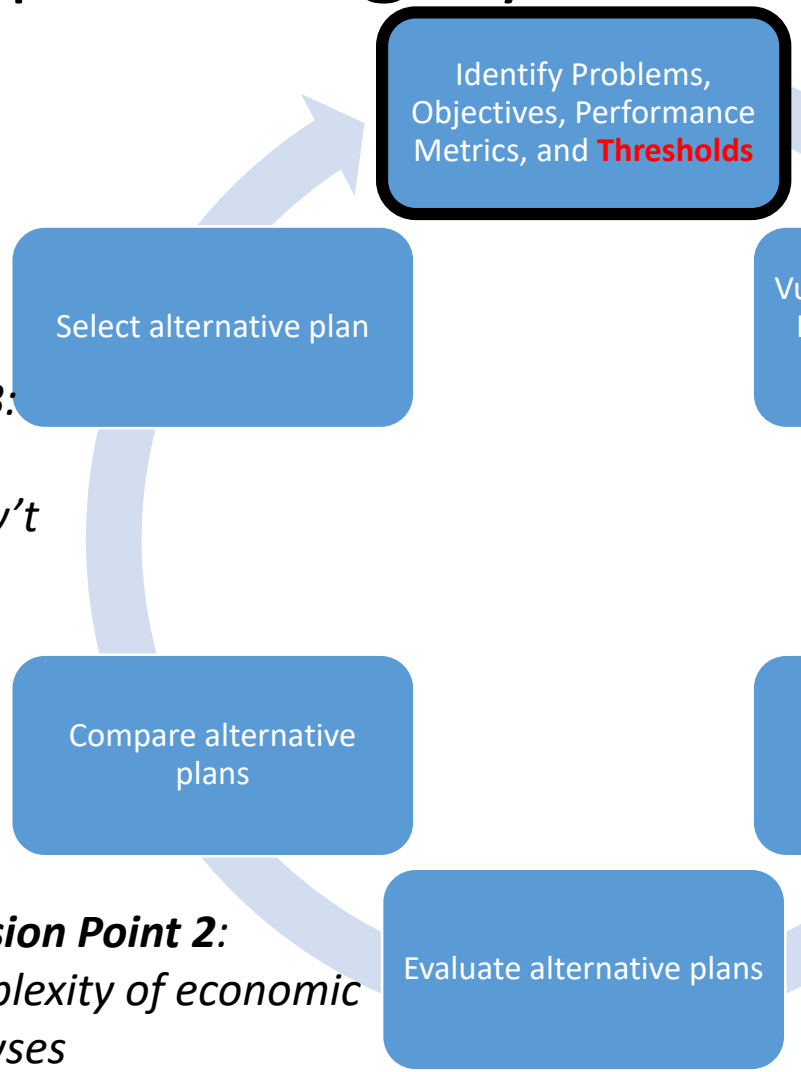

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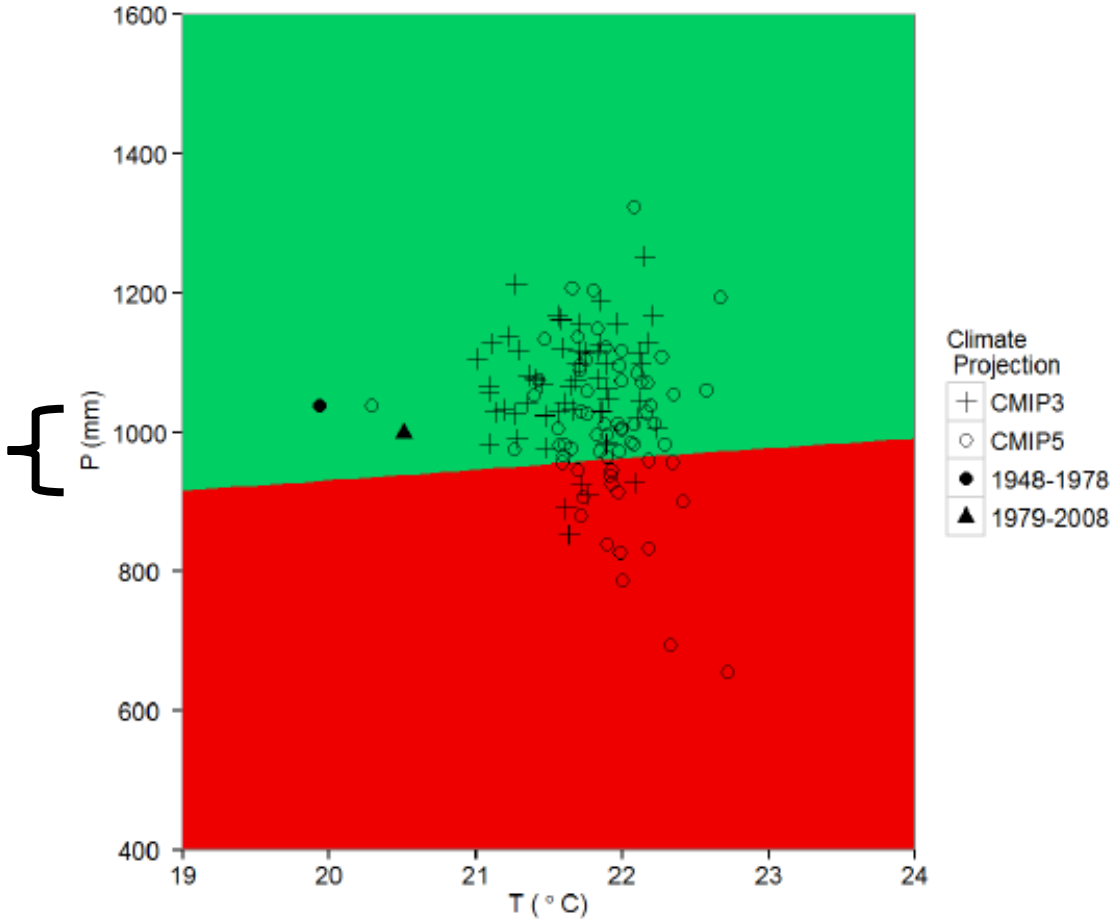
What are thresholds and why do we need them?

- Thresholds quantify **performance metric** levels that are unacceptable to a stakeholder
  - E.g. “Reliability of hydropower during the dry season” or “the current 100-year flood return period”
  - Occasional failed performance might be acceptable, or unavoidable
- Via a stress test, thresholds are used to define how much change the system can manage before performance is no longer acceptable.
- This information is used to define system vulnerability to climate change.



Climate Response Map for a Proposed Run-of-the-River Hydropower Project (Ray and Brown, 2015).

Performance Metric Thresholds Continued

DEFINING THRESHOLDS

Two recommended ways exist

1) Based on formal documents and agreements
   - (i.e., written in public policy regulations)

2) Based on stakeholders' experience
   - discuss tolerance to failure and management-related values associated with failure

EXAMPLES OF THRESHOLDS

The Iolanda Water Treatment Plant: Average daily treated water provision goes below 90,000 m^3 based on stakeholder input

The Waas River Valley: Thresholds were defined for three performance metrics.
   - 1/75 chance for any damage,
   - 1/500 chance for unrecoverable damage, and
   - Expected annual damages < 40 million euros.
     - Based on existing flood management policies

Decision Context

MODULE 1: EXERCISE

Exercise 1 Overview: Problem and Objectives

Participants will break into **3 groups** and each group will focus on a different water sector:

1. **Water Supply**
2. **Flood Risk Management**
3. **Hydropower**

Exercise 1: Define Problem/Opportunity, objectives, and performance metrics

Exercise 2 Overview: Thresholds

Participants will break into **3 groups** and each group will focus on a different water sector:

1. **Water Supply**
2. **Flood Risk Management**
3. **Hydropower**

Exercise 2: Define thresholds for performance metrics