Integrating evidence to tell the evaluation story

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Presentation to Canadian Institutes of Health Research
November 8, 9, 2012

Day 1 – Morning
Creating the evaluation plot

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Goals of the workshop

- To present an intermediate and critical review of the main qualitative and quantitative lines of evidence currently used in evaluations
- To align these lines of evidence with the nature of the questions posed
- To review how to draw the lines of evidence into a coherent evaluation “story”

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Outline of the workshop

Day 1 Morning – Creating the evaluation plot

Day 1 Afternoon – Adding characters

Day 2 Morning – Editing, assessing, and interpreting

Day 2 Afternoon –Telling the story

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Goal for Day 1 - Morning

- Review the principles of good logic models
- How to construct an evaluation matrix that supports the story
- Illustrate the main points
  - Evaluation of the 2010 Federal Secretariat support for the 2010 Winter Olympics and Paralympics
  - Evaluation of Sport Canada funding programs

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The evaluation "problem"

To evaluate:

to determine the significance, worth, or condition (value) by careful appraisal and study

This course adopts the perspective of the Treasury Board Evaluation Policy (April 2009) which views evaluation as ….

The assessment of the value for money (public funds)

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Proposition 1: The evaluation story requires a strong plot

The evaluation plot requires:

- A clear theory of change
- Logic models that
  - Explain causal links to support attribution and contribution

Outputs → Outcomes

  - Explain operational processes (link inputs/activities to outputs

Inputs → Outputs

- Evaluation matrices that are focussed and concise

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Theory of Change
Understanding "program" evaluation

- "Programs" consume resources
  - Direct acquisition of inputs (physical and services)
  - Displacement of alternative uses for inputs (opportunity cost)
- Evaluation serves three core goals
  - Identify the relative value (opportunity cost) of resource use
  - Identify improvements in the effectiveness of resource use
  - Identify alternatives for resource use

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Evaluation applies when market transactions are replaced in whole or part by:

1. Public sector interventions

2. Internalization of private transactions within an organization

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Three central ideas for evaluating resource use

1. **Opportunity cost**
   - Value of the foregone alternative:
   - **Explicit opportunity cost …** the value (benefit) of not using resources to acquire alternatives
   - **Implicit opportunity cost** … the value of time given up
     The value of time spent in the course today

2. **Benefit-cost (cost-benefit) or net benefit principle**:
   - Any decision that results in benefits exceeding costs has value
   - We choose the highest valued option

3. **Counterfactual**
   - Value is relative
   - All evaluation has a counterfactual – implicit or explicit

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Why does government exist?

Three main rationales for public sector action:

- Market failure (consumer ignorance of mortgages, pollution)
- Externalities (public goods and bads)
- Distributional unfairness (poverty)

1. **Market failure** typically evokes a regulatory response (e.g., consumer education, fair lending laws, securities regulation)
2. **Public goods** encourage government to supplement private sector provision of a good or service (e.g., subsidization of crop insurance, subsidization of vaccines, public education)
3. **Distributional fairness** can result in regulatory, direct provision of a service, or direct cash transfer
   - Laws regarding usury, anti-discrimination legislation
   - Public housing
   - National child benefit, progressive tax, GST rebate for lower income households

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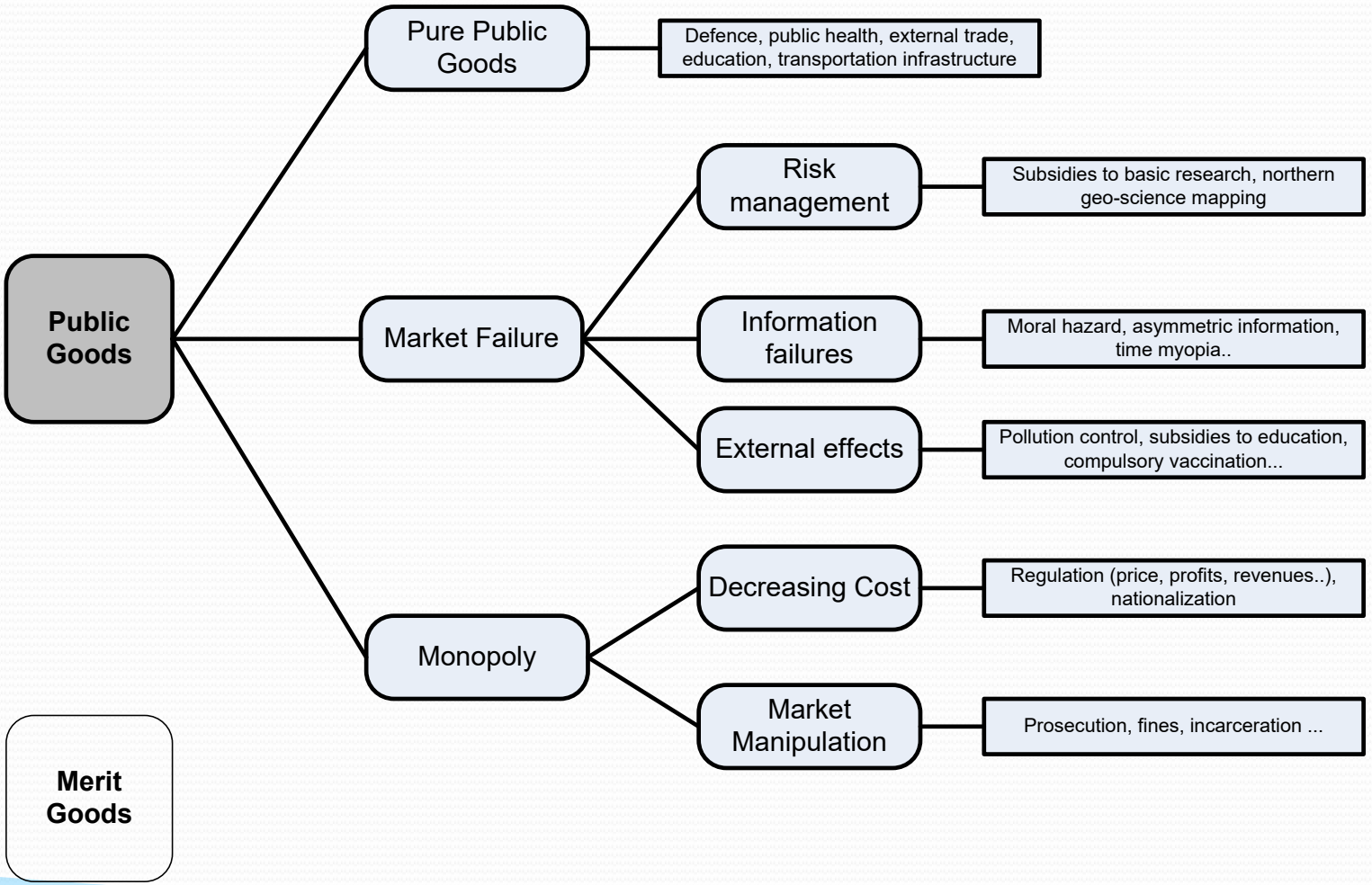
Government provided goods and services



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Definition of government initiatives

- **Social marketing to promote a goal** (articulation of goal or intent; guidance on preferred behaviour)
- **Expenditures on goods and services**
  - *Direct resource commitments* on goods (public housing, vaccination)
  - *Direct resource commitments* on services (consumer information, training)
  - *Tax expenditures* (tax deductions and credits awarded to citizens and businesses to behave, spend, invest, etc.)
  - *Grants/contributions/contracts* to third parties to perform services
- **Legislation** is a general framework for how citizens conduct themselves (smoking bans, criminal code) and requires political assent
- **Regulation** modifies elements of legislation (changes to the speed limit) and can be completed by administrative fiat

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Information failure

- **Moral hazard**
  - Market participants alter their behaviour in response to the divergence of public and private costs
  - Taxes/subsidies cause market participants to purchase/sell less/more than would have occurred with prices equal to the marginal cost
- **Asymmetry of information**
  - Sellers are typically more informed than buyers
  - Prisoner's paradox - information lack produces sub-optimal outcomes
- **Uncertainty** about other players' reactions causes poor decisions
  - Nash equilibrium exists when I account for your probable reaction to my choices. Equilibrium exists when we have all adjusted and readjusted to each other's choices/decisions.

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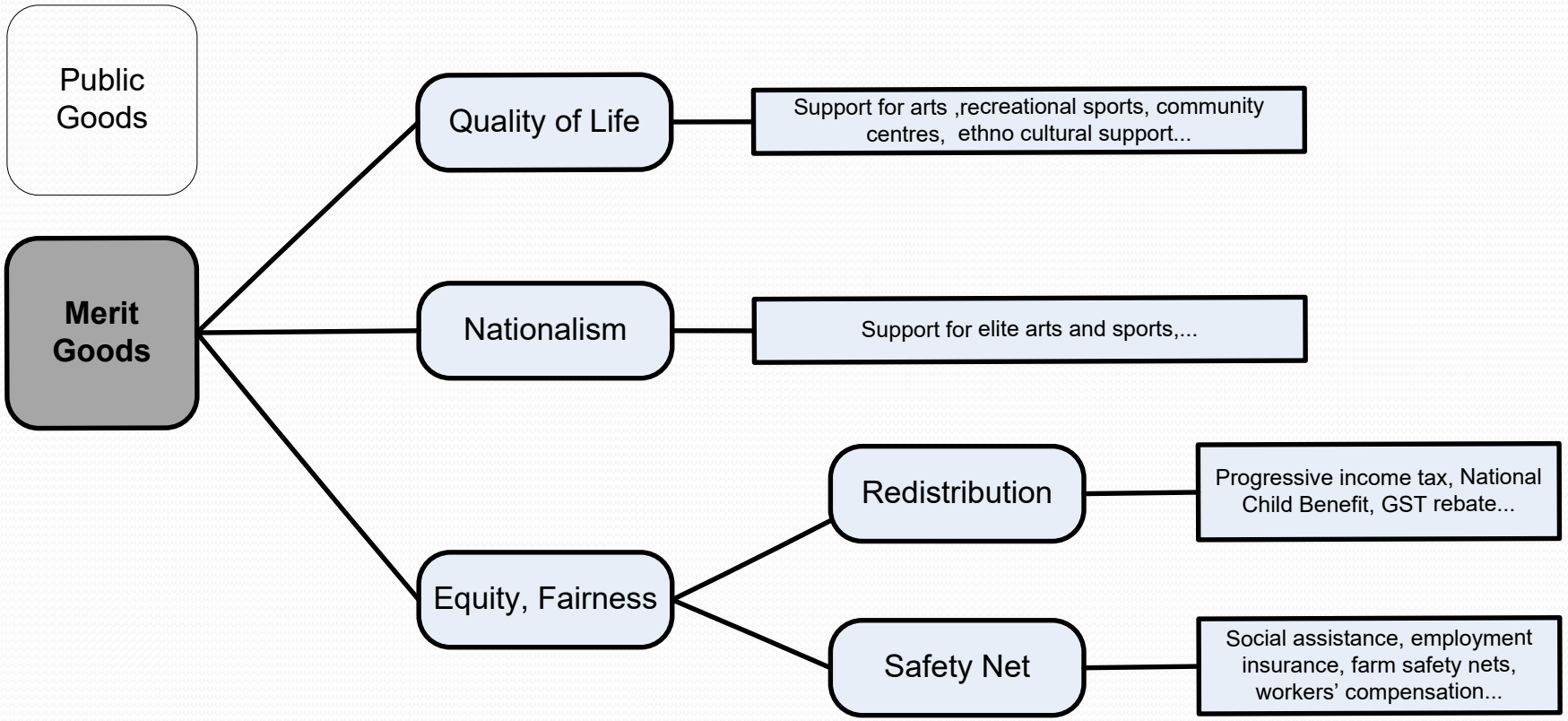
Government provided goods and services



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Distributive justice as a merit good

Recent research shows that ideas of equality and fair distribution become settled for most people by the age of 10. Strong evidence exists that humans develop altruistic instincts early.

Share and share alike, *Nature.* 454(28) Aug 2008

One can judge a society by how it takes care of its weakest.

Daniel Moynihan (US Senate)

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Where does CIHR fit?

CIHR's mandate is to "excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health-care system."

CIHR was created to transform health research in Canada by:

- funding more research on targeted priority areas
- building research capacity in under-developed areas such as population health and health services research
- training the next generation of health researchers
- focusing on knowledge translation so that the results of research are transformed into policies, practices, procedures, products, and services

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Creating the evaluation plot

Logic models and evaluation matrices

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Theory of change …explains the intervention and what outcomes are expected

Goal

- Assess the case for public interventions (against the private counterfactual)
- Assess the case for federal intervention (against the counterfactual of interventions led by other orders of government)
- Create an expectation of outcome based on scope of resources deployed and compared to resource deployment in other jurisdictions (external counterfactuals)
- Explain the social – economic – environmental – scientific basis for the intervention
- Identify confounding factors

Informed by (line of evidence)

- Literature review
- Interviews with program designers/planners
- Document review (TB submission, memos to cabinet, historical assessment to provide context, needs assessments….)

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Logic model – two perspectives

- **Scientific causal logic** explains the intervention
- **Intervention:** resource use and flow

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Causal logic model

- **Verbal** – explains the intervention and how it interacts with external events
- **Graphical** – presents a "picture" of the program
- **Abstract** (mathematical) – formalism that is most useful when quantitative data are available

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Causal logic model
Verbal models

National Child Benefit (NCB)

The NCB Initiative is a joint initiative of federal and provincial/territorial governments intended to help prevent and reduce the depth of child poverty, as well as promote attachment to the workforce by ensuring that families will always be better off as a result of working.

It does this through a cash benefit paid to low income families with children, a social assistance offset, and various supplementary programs provided by provinces and territories.

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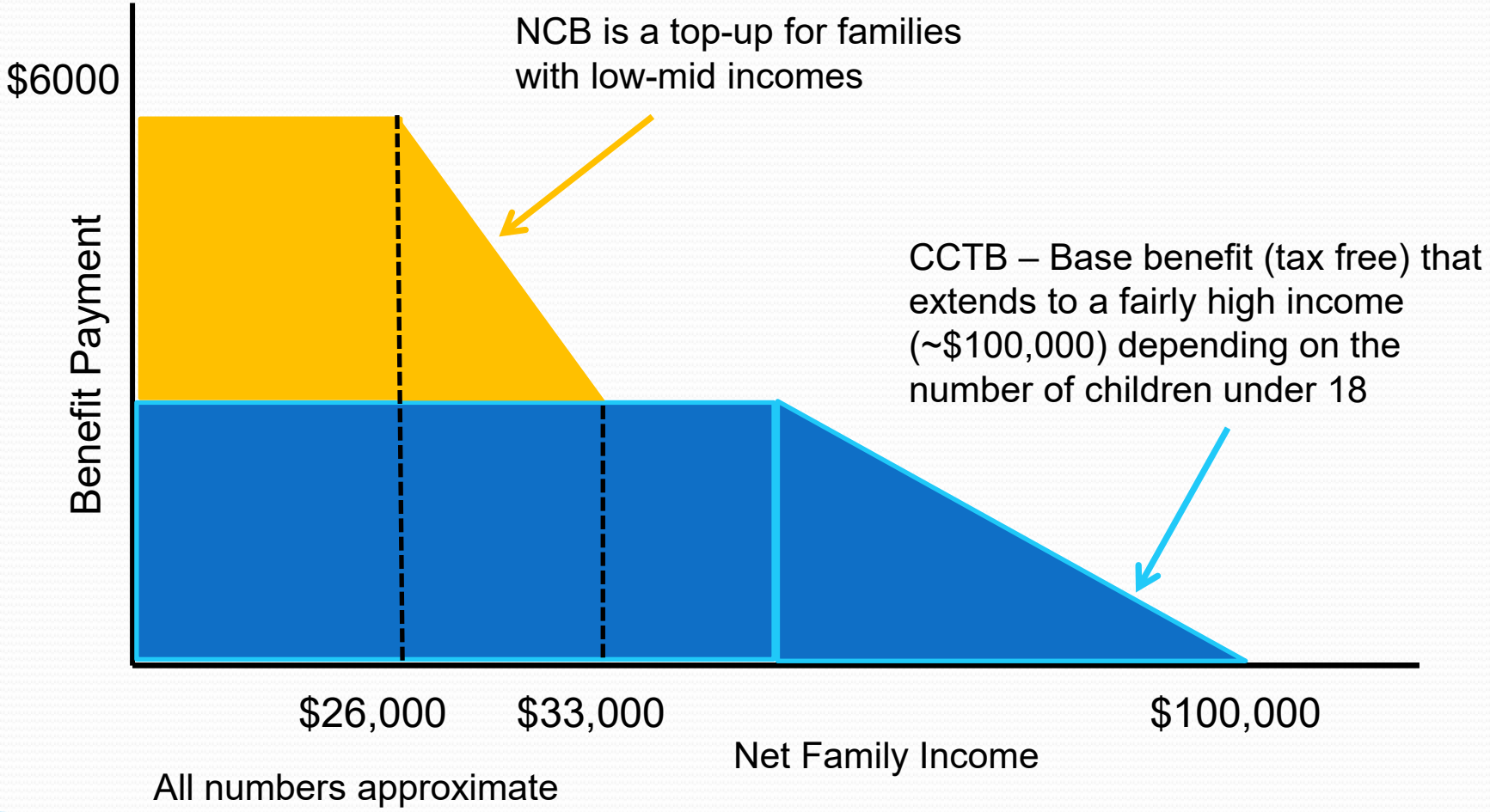
National Child Benefit
(two children < 18)



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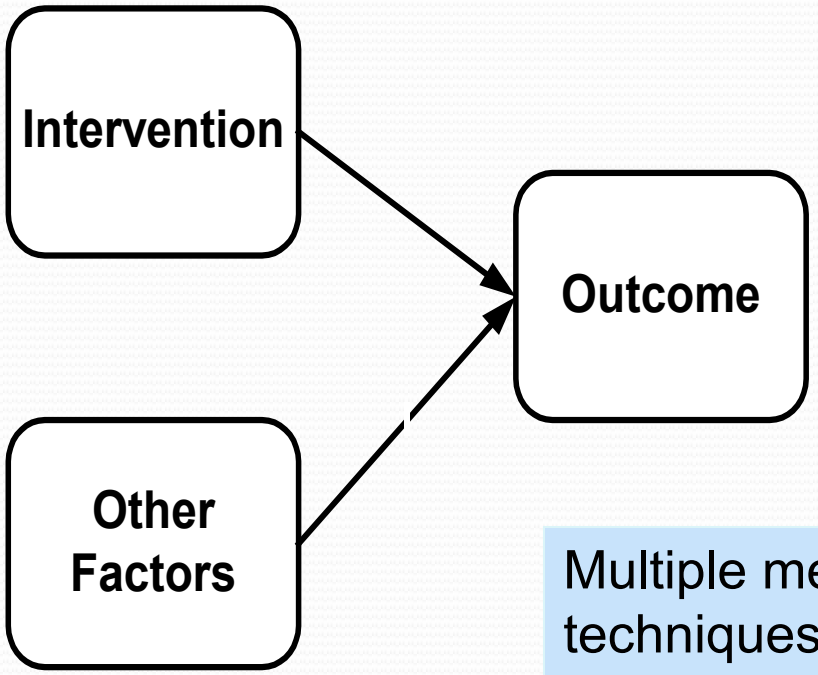
Causal logic model
Graphical models



The causal logic model clarifies the theory of how interventions produce outcomes

Multiple methods and experimental techniques establish the relative importance of causes of changes in outcomes

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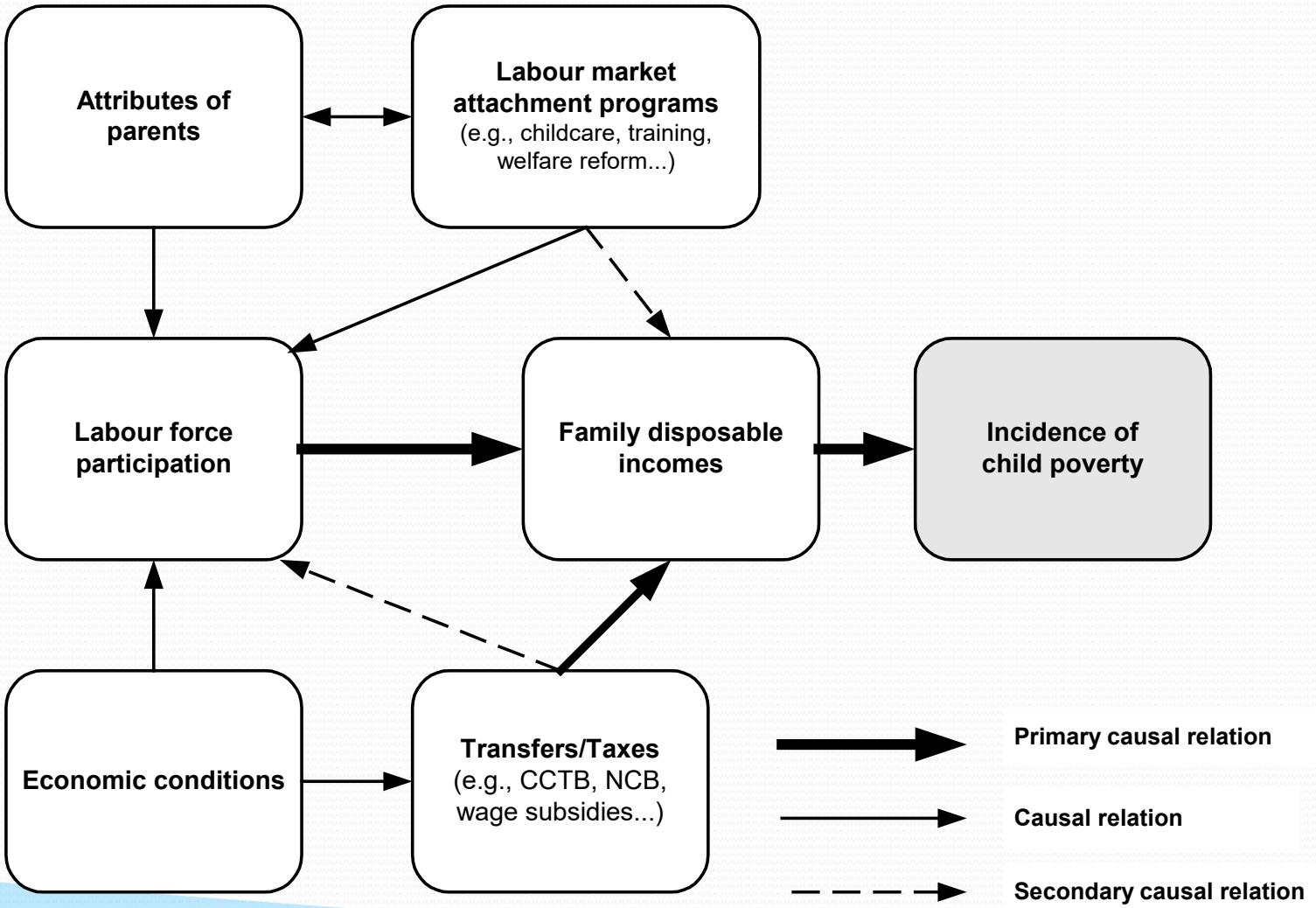
Graphical logic for the National Child Benefit



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Advantages and disadvantages of causal logic models

Advantages

- reveals inter-relationships among program elements
- identifies confounding factors that reduce program outcomes

Disadvantages

- over-complication can impede understanding
- abstract representations can confine communication
- does not reveal resource use/reach or support other "oversight" requirements

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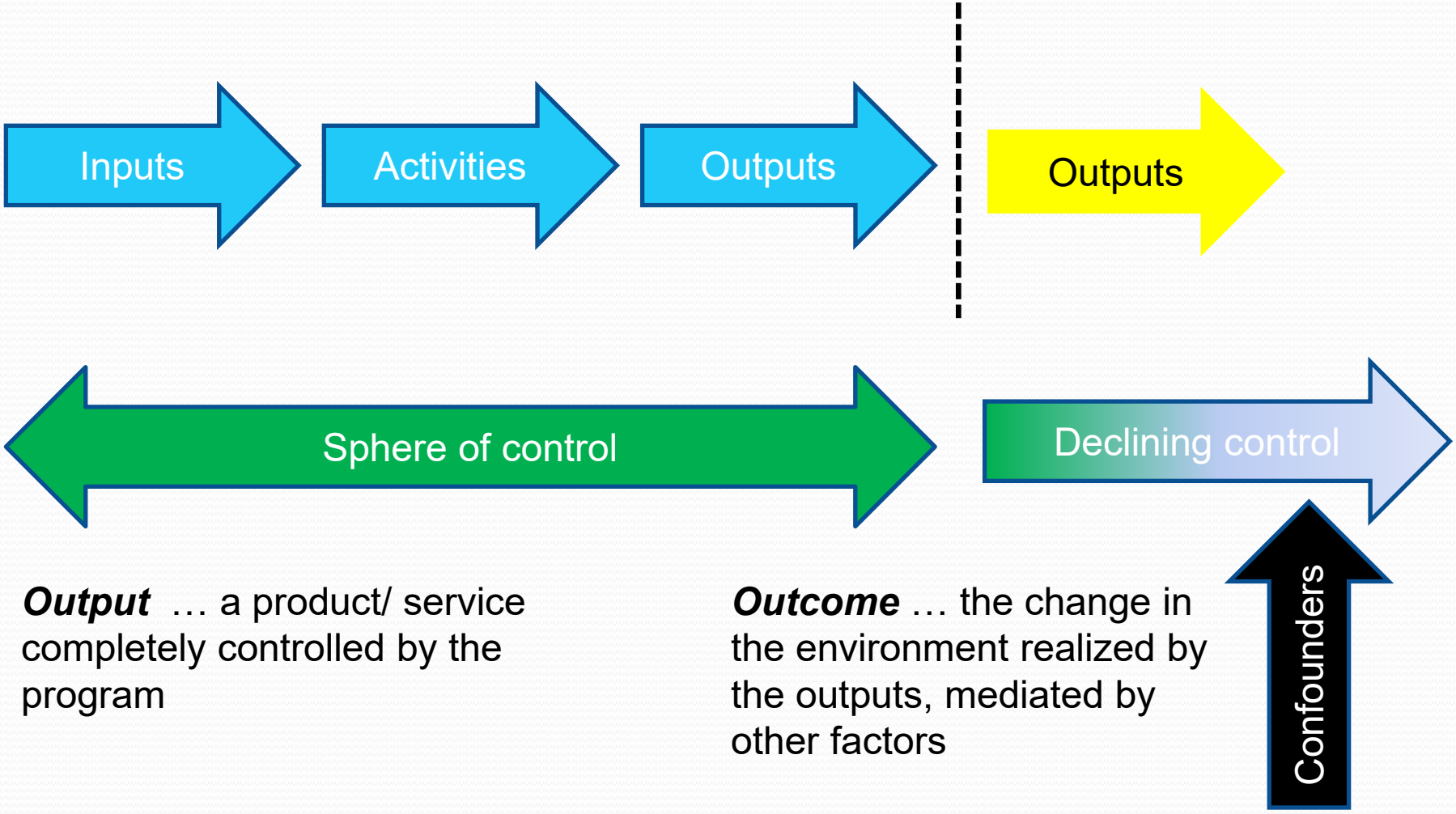
Results chain



Output … a product/ service completely controlled by the program

Outcome … the change in the environment realized by the outputs, mediated by other factors

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Logistics model

- Narrows the perspective of the program/policy to the sponsoring unit
- Creates a program as a series of results chains
  - Service lines or sub-programs that reflect:
    - Different target groups
    - Different services
- Portrays the transformation along the results chain:
  - Resources/inputs
  - Activities
  - Outputs
  - Outcomes
- Immediate, intermediate, and long-term outcomes coalesce based on the theory of change
- Ignores external influences (which are present)

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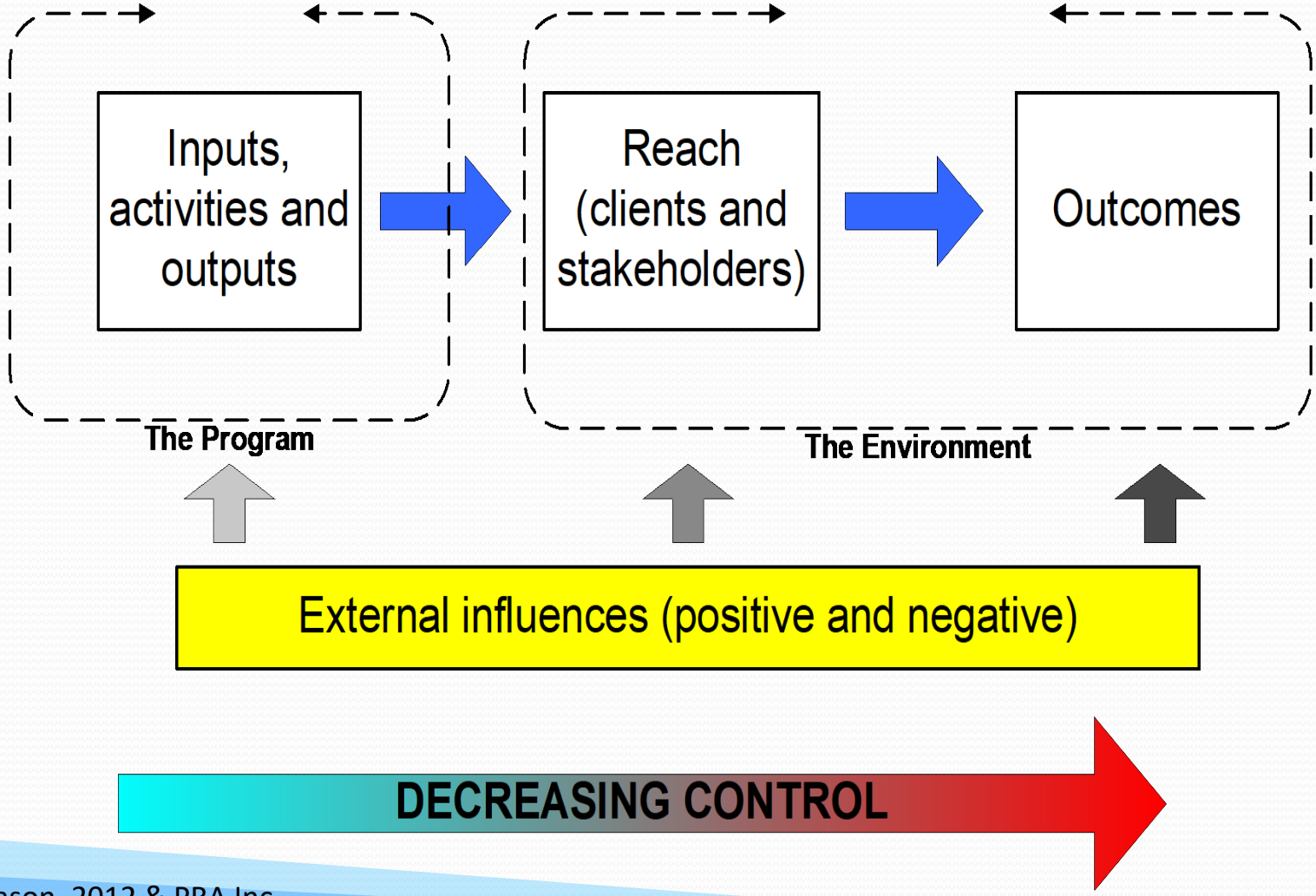
Logistical model

Reach – who are the clients, stakeholders, and delivery agents?



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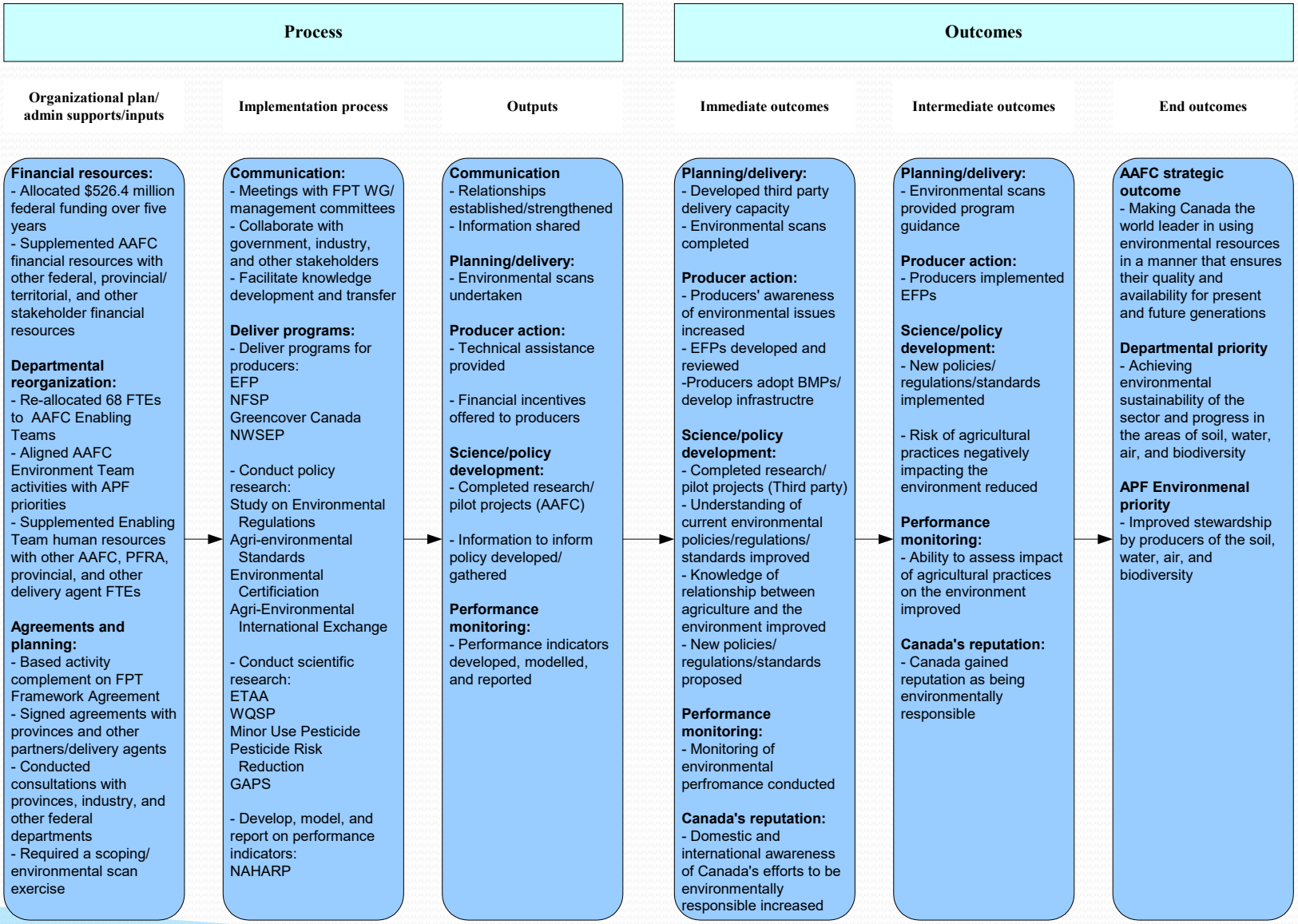
AAFC's APF Environmental Programs



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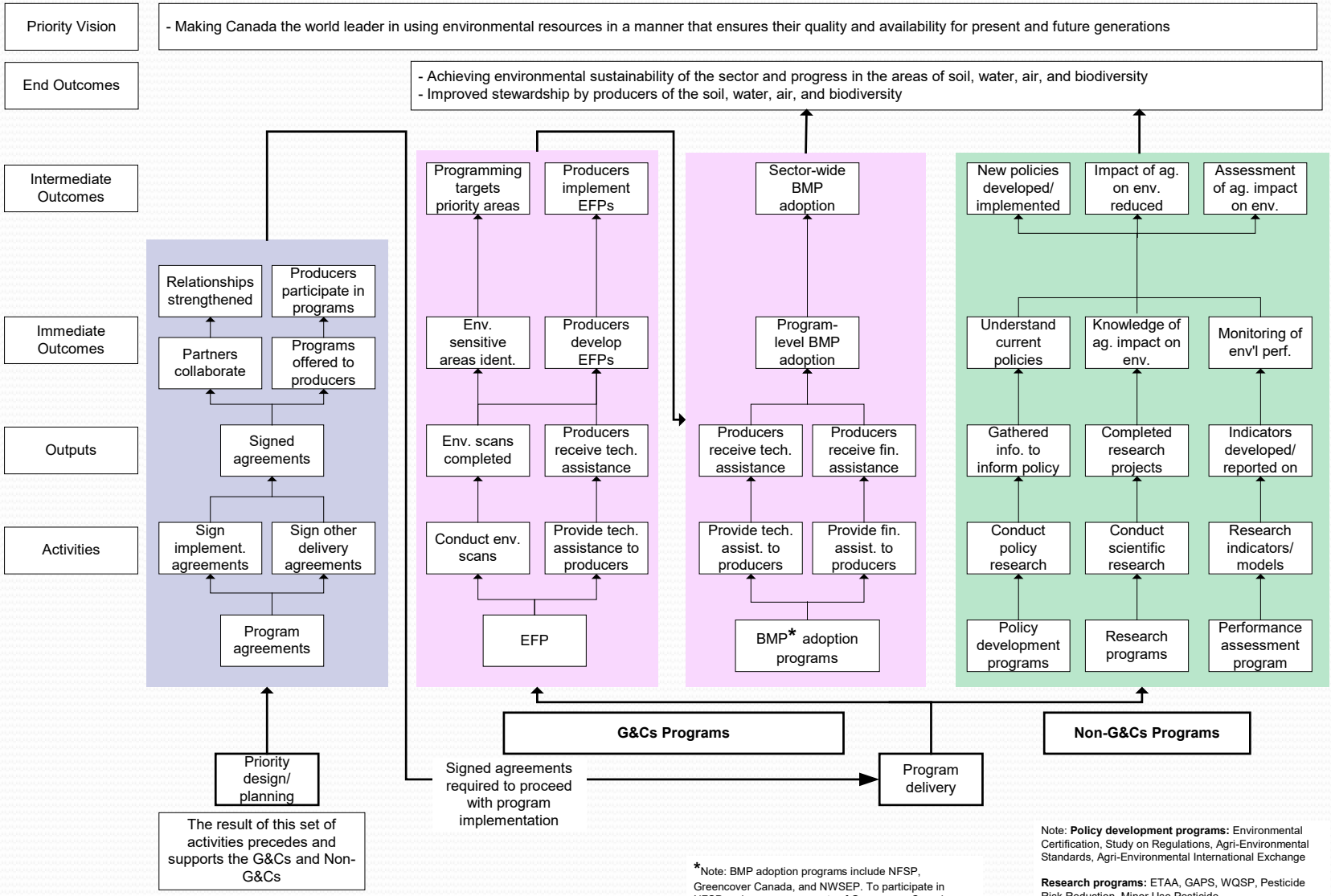
AAFC's APF Environmental Programs
Organizational process and programming



*Note: BMP adoption programs include NFSP, Greencover Canada, and NWSEP. To participate in NFSP and some components of Greencover Canada, producers must have completed an EFP.

Note: **Policy development programs:** Environmental Certification, Study on Regulations, Agri-Environmental Standards, Agri-Environmental International Exchange

Research programs: ETAA, GAPS, WQSP, Pesticide Risk Reduction, Minor Use Pesticide

Performance assessment program: National Agri-Environmental Health Assessment and Reporting Program

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AAFC Environmental Programming Interpretation of the logic model

- A year+ of pre-planning/organization preceded the implementation (left panel)
- Participation in an environmental farm plan (EFP) is a condition for receiving support
- Two main service lines exist:
  - **Technical and financial assistance** to primary producers to adopt Best Management Practices
  - Support for **basic/applied research** to advance the state-of-the-art in sustainable farming
- Immediate/intermediate goal is BMP adoption
- Longer-term goal is increased “environmental sustainability”

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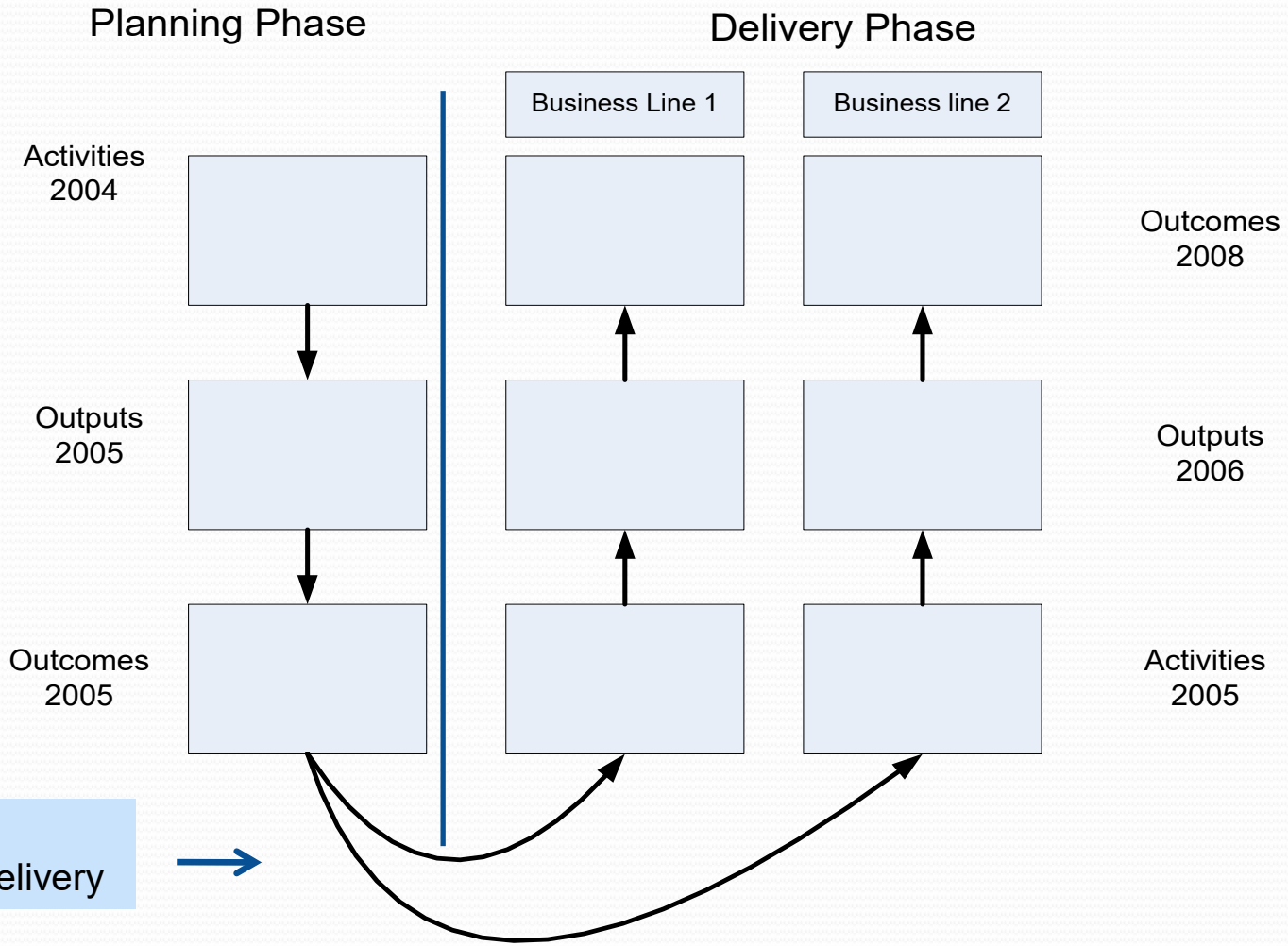
A logic model with time



Planning outcomes become inputs to delivery

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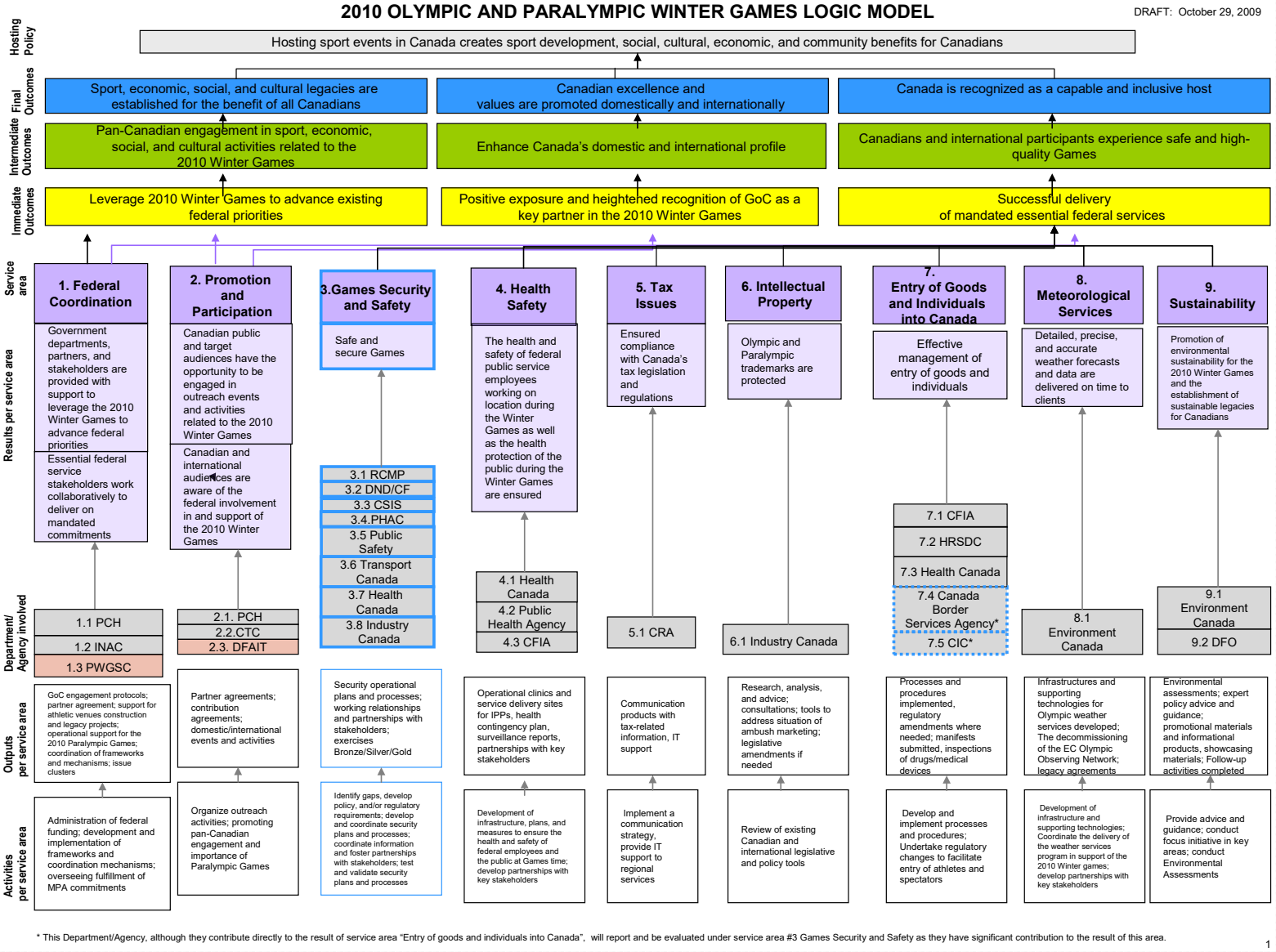

* This Department/Agency, although they contribute directly to the result of service area "Entry of goods and individuals into Canada", will report and be evaluated under service area #3 Games Security and Safety as they have significant contribution to the result of this area.

1

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From logic model to matrix

- The evaluation matrix determines the success of the evaluation
- It shapes the direction and depth of analysis
- Management shapes the purpose of evaluation

IQIDM

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Treasury Board
Policy on Evaluation (April 2009)

Comprises three elements:

- Policy on Evaluation
- Directive on the Evaluation Function
- Standard on Evaluation for the Government of Canada

The Policy is arguably the most important document, but the other two also are important.

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Policy on Evaluation

Goal

1. Defines the obligation for departmental evaluation plans to demonstrate progress toward achieving coverage of direct program spending over five years
2. Plans that do not demonstrate evaluation coverage of all direct program spending need to use a “risk-based” approach to planning coverage

The evaluation plan needs to either show 100% coverage or identify the programs that will be assessed (and not assessed) within the 5-year cycle using a **risk-based criteria**.

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Risk assessment: materiality

- **Proportion of budget**

  Bob Woodward: The story is dry. All we've got are pieces. We can't seem to figure out what the puzzle is supposed to look like. John Mitchell resigns as the head of CREEP, and says that he wants to spend more time with his family. I mean, it sounds like bullshit, we don't exactly believe that...

  Deep Throat: No, heh, but it's touching. Forget the myths the media's created about the White House. The truth is, these are not very bright guys, and things got out of hand.

  Bob Woodward: Hunt's come in from the cold. Supposedly he's got a lawyer with $25,000 in a brown paper bag.

  Deep Throat: Follow the money.

  All the President's Men

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Risk assessment: strategic position

- Programs that are integral to the Department Agency priorities
- Programs that, if they fail:
  - Compromise the delivery of other programs
  - Compromise the priorities of the department
  - Cause social, economic, and political cost disproportionate to their magnitude
- Programs that are constitutionally and legislatively required may be assigned a lower priority since the discretion on spending is limited
  - Note that the Policy identifies these as requiring only an “administrative review”

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Observation

- The Evaluation Policy appears to mandate 100% coverage, but:
  - Evaluation heads and deputy heads can develop a case for a risk-based approach that sets aide/defers some elements.
  - Such a case requires careful planning.
  - The evaluation plan that does not present 100% coverage over the 5 year cycle must present a credible argument that the “omission” or “deferral” does not compromise reporting on results or the Standard on Evaluation.
- This is not necessarily easy or even possible in some cases, but that option does exist and should be explored.
- The case for excluding programs on the grounds of low risk (to the Departmental Mandate and to the Standard on Evaluation) should be done early, and not in response to shortage of evaluation funds later in the five-year cycle (credibility).

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Core issues

- Reduced from
  - Rationale/relevance
  - Design/delivery
  - Success/impacts
  - Cost effectiveness/alternatives
- To
  - Relevance
  - Performance
- This appears to be a retreat, but the two core issues offer all the needed scope.

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Relevance

Core Issues	
Relevance	
Issue #1: Continued Need for program	*Assessment of the extent to which the program continues to address a demonstrable need and is responsive to the needs of Canadians*
Issue #2: Alignment with Government Priorities	*Assessment of the linkages between program objectives and (i) federal government priorities and (ii) departmental strategic outcomes*
Issue #3: Alignment with Federal Roles and Responsibilities	*Assessment of the role and responsibilities for the federal government in delivering the program*

- #1 Implied in the term *demonstrable need* is whether "private sector" opportunities exist (or have been displaced) or whether other orders of government may be better positioned.
- #2 Horizontal initiatives are a complication for an easy response to this otherwise straightforward issue.
- #3 A key issue in roles and responsibilities is federal jurisdiction and constitutional alignment.

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Performance

Performance (effectiveness, efficiency and economy)	
Issue #4: Achievement of Expected Outcomes	*Assessment of progress toward expected outcomes* (incl. immediate, intermediate and ultimate outcomes) *with reference to performance targets and program reach, program design, including the linkage and contribution of outputs to outcomes*
Issue #5: Demonstration of Efficiency and Economy	*Assessment of resource utilization in relation to the production of outputs and progress toward expected outcomes*

- #4 – We see a blurring of the old formative/summative evaluation. Also apparent is the need to show a causal/attribution link (contribution) and a validation of program theory.
- #5 – This is the cost effectiveness issue linked specifically to **economy** (are we acquiring resources/inputs at the lowest cost?) and **efficiency** (are the outputs being produced at the lowest unit cost?). The **cost- effectiveness** question (cost per unit outcome) is implied in the term "progress toward expected outcomes."

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Principles of evaluation matrix design ~ 1 ~

- **Issues** need to align with the mission/goal of the program
  - High-level language is ok for the issues, but concrete and "grounded" plain language specifications are preferred
  - Ensure that the service lines emerge at the issues level
- Do not replicate the TB structure … it is too general (passing the buck)
- Parsimony (a few focused issues) is preferred

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Principles of evaluation matrix design ~ 2 ~

- **Questions** are operational and specific to the program and service lines
  - Use the results chain and logic model to identify key delivery points/times/processes for *outputs*
  - Focus on immediate *outcomes*
- Questions align with indicators and data collection
- Rank questions within an issue (H,M,L)

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Principles of evaluation matrix design
~ 3 ~

- **Indicators** describe the information needed to answer the question
- Detailed descriptions support reliable and valid data collection
- Align indicators with source based on expected information content and quality

Example: What immediate outcomes (first five years) were expected at the program's inception?

– Key informant opinion (poor)
– Management opinion (better)
– Senior federal and provincial manager opinion (even better)

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Principles of evaluation matrix design
~ 4 ~

- **Data sources** align to each indicator
- Detailed descriptions of sources support efficient evaluations

Example: Senior federal and provincial managers' opinion

- Key informant interviews (poor)
- Interview with federal agreement managers (n=3); Interview with ADM(s) (n=2); Interview with Provincial/territorial Agreement managers (n=13) (better)
- Named interviewees (best)

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Principles of evaluation matrix design
~ 5 ~

- Methodology notes add important detail for each data source and indicator

Positive Example: 2010 Olympics
Evaluation Matrix - 2010 Olympics.docx

Negative Example: Sports Funding Program
Evaluation Matrix for Summative Evaluation of the Sport Funding Programs at Canadian Heritage.docx

KISS – Keep it simple and sophisticated

Many evaluation matrices are bloated:
repetitive with redundant questions that fail to direct the collection of strategic data

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Summary of the evaluation plot

- Use **IQIDM**
- Focus the questions on management priorities
- Ask clear and direct questions that identify the indicators needed
- Be detailed in data collection
  - What do we need to know?
  - How will we know?
  - How will we know we know?
- Align the evidence to the questions

Bridge to the afternoon

- Not all evidence is created equal
- One false fact + one true fact = misinformation

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