

The Art and Science of Program Evaluation

Mark Tranel

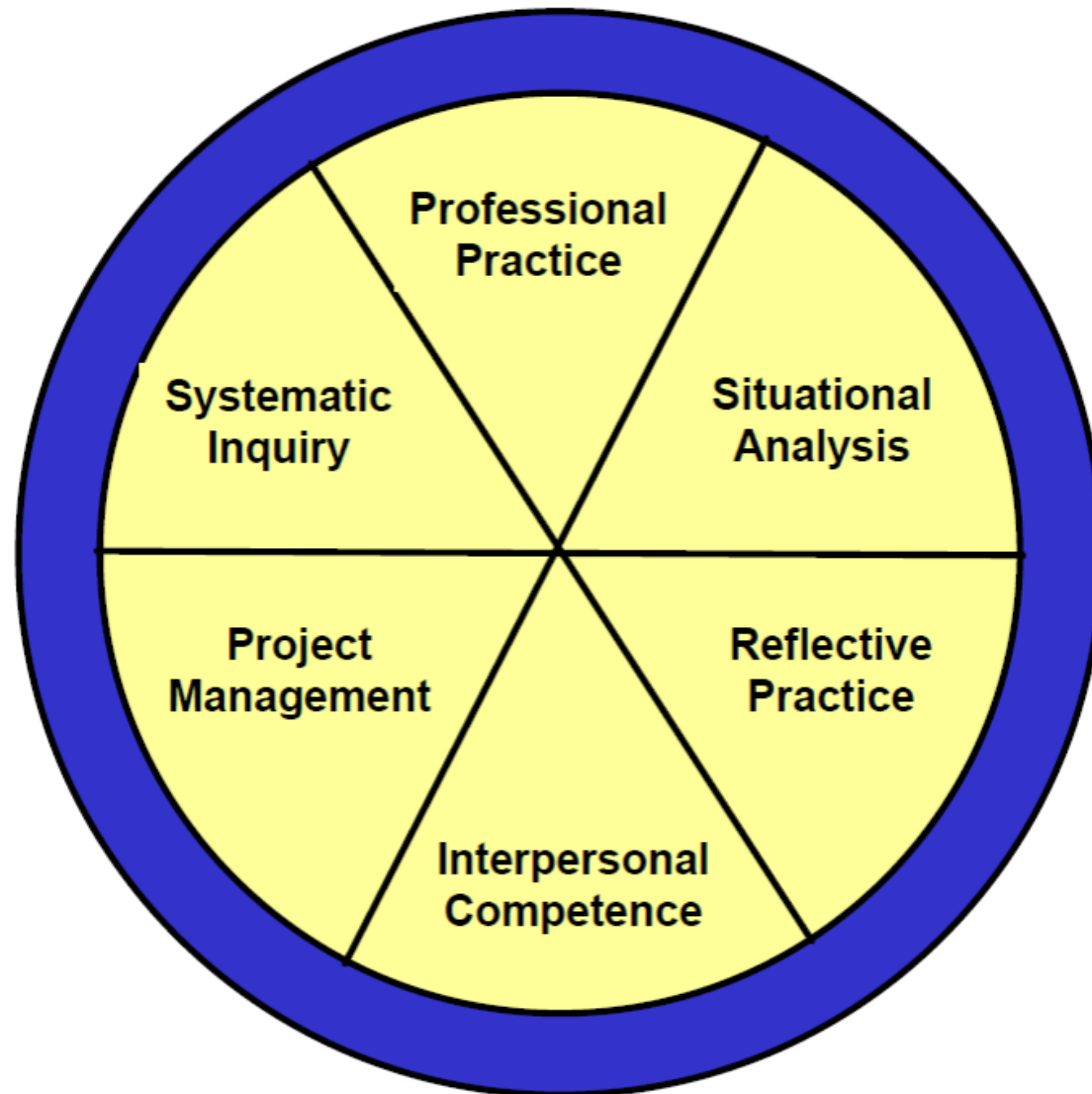
**Research Associate Professor
Public Policy Administration
Program**

Learning Objectives

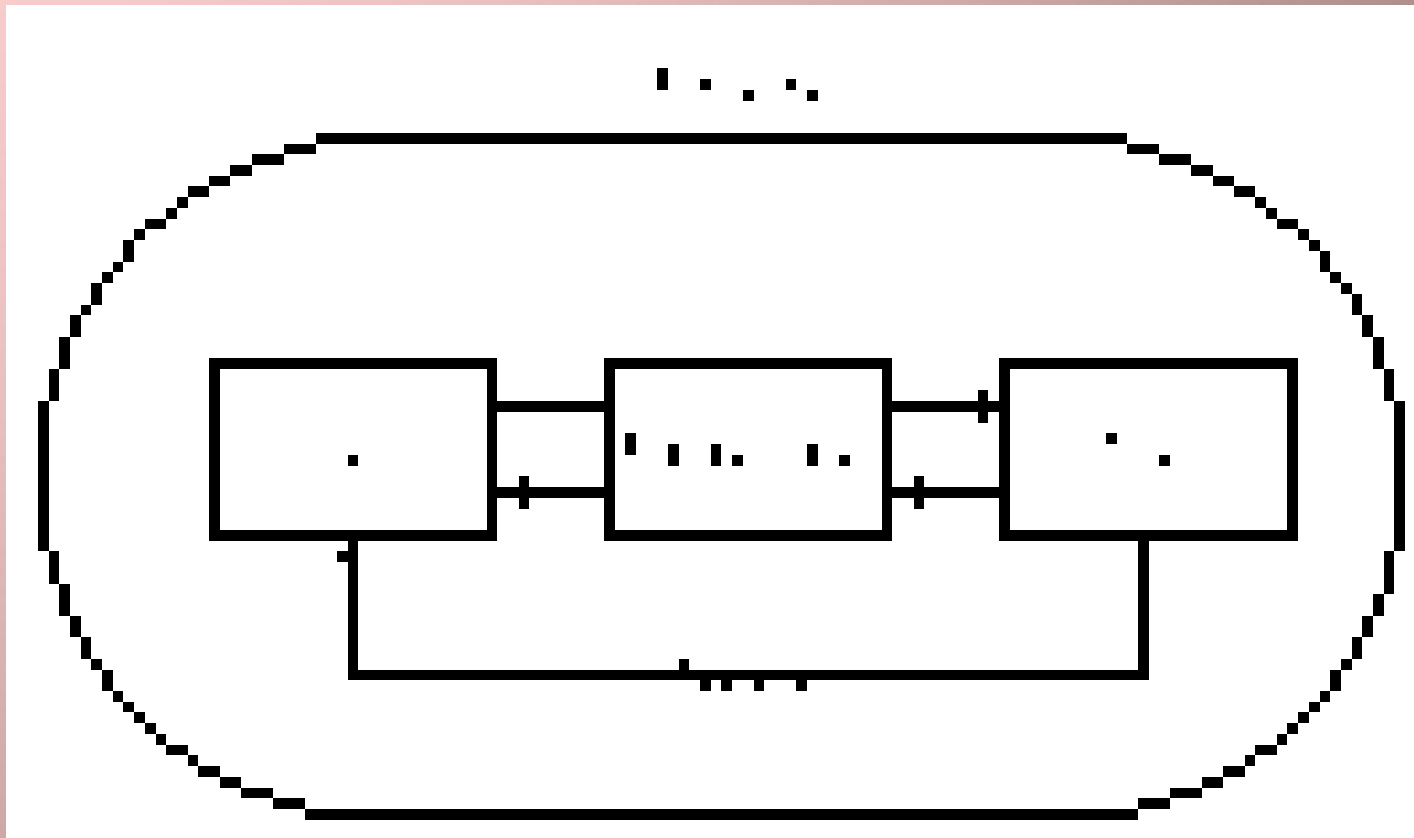
- scope of program evaluation
- importance of the management question
- program improvement vs outcome measurement (formative vs summative)
- measuring Δ (delta)
- output vs outcome vs impact
- theory of change/logic model
- economic evaluation

ART – SCIENCE DUALITY

Essential Competencies for Program Evaluators



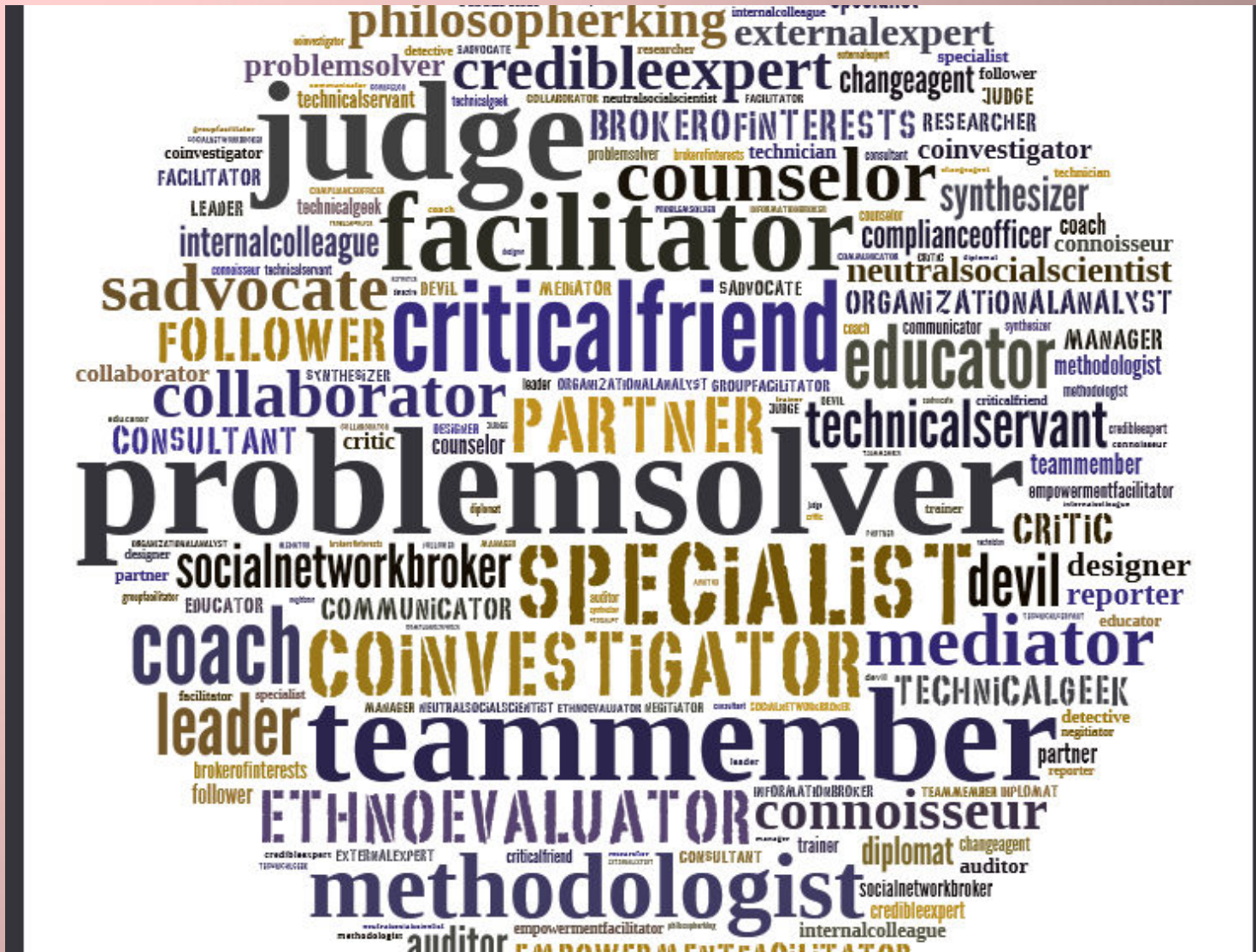
Systems View of a Program



ADDIE MODEL

- ANALYSIS
- DESIGN
- DEVELOPMENT
- IMPLEMENTATION
- EVALUATION

Effective evaluation is not an "event" that occurs at the end of a project, but is an ongoing process which helps decision makers better understand the project; how it is impacting participants, partner agencies and the community; and how it is being influenced/impacted by both internal and external factors.



The many roles of an evaluator

Program-Planning Stage

Constructive Tools

- Needs Assessment
- Formative Research
- Logic Models
- Program Theory

Conclusive Tool

- Commentary or Advisory Meeting

Hybrid Tools

- Assumption Testing
- Pilot-testing

- Bilateral Empowerment Evaluation

Initial Implementation Stage

Constructive Tools

- Formative Evaluation
- Program review/ Development Meeting

- Bilateral Empowerment Evaluation

Mature Implementation Stage

Constructive Tool

- Formative Evaluation

Conclusive Tools

- Process (fidelity) Evaluation
- Process Monitoring

Hybrid Tools

- Theory-driven Process Evaluation

Outcome Stage

Constructive Tools

- SMART objectives
- Evaluability Assessment
- Plausibility Assessment/ Consensus Building

Conclusive Tools

- Outcome Monitoring
- Validity-focused Outcome Evaluation
- Viability Evaluation

Hybrid Tools

- Real-world Outcome Evaluation
- Theory-driven Outcome Evaluation
- Transferability Evaluation

METHOD

- **The original model for the social sciences was the quantitative, experimental methodology of the physical sciences**
- **Campbell and Stanley (1966) *Experimental and Quasi-Experimental Designs for Research***

THE EVALUATION DEBATE

post hoc, ergo propter hoc

- **Experimental Design**

- ✓ Causation
- ✓ Generalization
- ✓ Replication

- **Quasi-experimental Design**

- ✓ Methodological and statistical adjustments to compensate

- **Alternatives**

- ✓ Needs Assessment
- ✓ Implementation
- ✓ Monitoring

Formative Evaluation can ask several different questions:

- *needs assessment*: who needs the program? how great is the need? what might work to meet the need?
- *evaluability assessment*: is an evaluation is feasible and how can stakeholders help shape its usefulness
- *implementation evaluation*: monitors the fidelity of the program or technology delivery
- *process evaluation*: investigates the process of delivering the program or technology, including alternative delivery procedures

Summative Evaluation can also be subdivided:

- *outcome evaluations* investigate whether the program or technology caused demonstrable effects on specifically defined target outcomes
- *impact evaluation* is broader and assesses the overall or net effects -- intended or unintended -- of the program or technology as a whole
- *cost-effectiveness and cost-benefit analysis* address questions of efficiency by standardizing outcomes in terms of their dollar costs and values
- *secondary analysis* reexamines existing data to address new questions or use methods not previously employed
- *meta-analysis* integrates the outcome estimates from multiple studies to arrive at an overall or summary judgment on an evaluation question

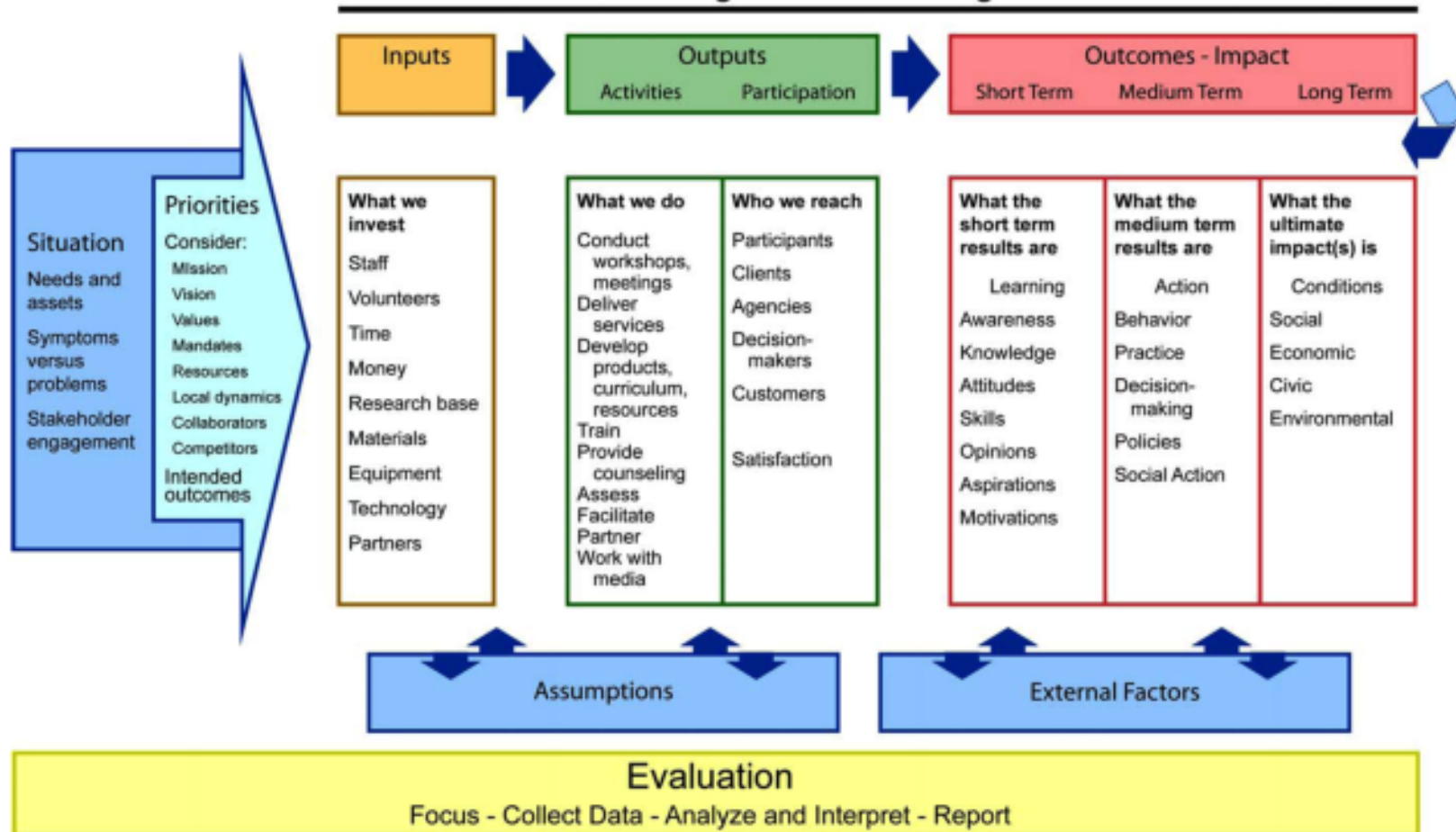
Selecting an Evaluation Plan

- Program evaluations include more than 35 different types of models (e.g., needs assessments, accreditation, cost/benefit analysis, effectiveness, efficiency, goal-based, process, outcomes, etc.)
- Select the type that may address the formative and/or summative needs in the situation.

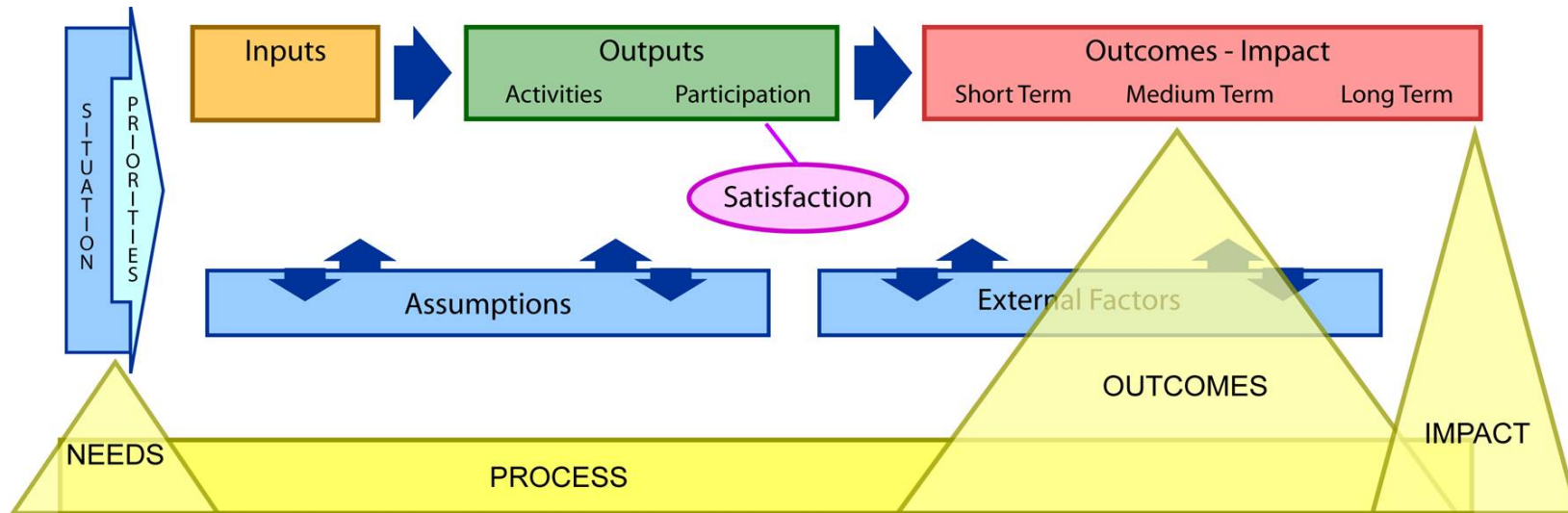
PROGRAM DEVELOPMENT

Planning – Implementation – Evaluation

Program Action - Logic Model



Logic model and common types of evaluation



Types of evaluation

Needs/asset assessment:

What are the characteristics, needs, priorities of target population?

What are potential barriers/facilitators?

What is most appropriate to do?

Process evaluation:

How is program implemented?

Are activities delivered as intended? Fidelity of implementation?

Are participants being reached as intended?

What are participant reactions?

Outcome evaluation:

To what extent are desired changes occurring? Goals met?

Who is benefiting/not benefiting? How?

What seems to work? Not work?

What are unintended outcomes?

Impact evaluation:

To what extent can changes be attributed to the program?

What are the net effects?

What are final consequences?

Is program worth resources it costs?

Chain of Outcomes

SHORT

Seniors increase knowledge of food contamination risks

Participants increase knowledge and skills in financial management

Community increases understanding of childcare needs

Empty inner city parking lot converted to community garden

MEDIUM

Practice safe cooling of food; food preparation guidelines

Establish financial goals, use spending plan

Residents and employers discuss options and implement a plan

Youth and adults learn gardening skills, nutrition, food preparation and mgt.

LONG-TERM

Lowered incidence of food borne illness

Reduced debt and increased savings

Child care needs are met

Money saved, nutrition improved, residents enjoy greater sense of community

Focus of Outcomes

•Individual

- Child, parent, client, resident

•Child is ready to enter school; farmer implements nutrient management practice

•Group

- family, team, community
- group

•Families control spending to maintain family financial stability

•Agency, organization

•Agency institutes policy that encourages physical activity of staff

•System

•Family serving agencies share resources to better meet clientele needs

•Community

•Communities develop and preserve decent safe and affordable housing

Writing Good Outcomes

SMART objectives: Specific, measurable, attainable, results-oriented, timed

<u>Who/what</u>	<u>Change/desired effect</u>	<u>In what</u>	<u>By when</u>
Families participating in the Family Resource Center	increase	their use of community resources and services	within one year of joining
4 school boards	adopt	policies to improve student nutrition and physical activity	by Dec 2005

What is the difference between objectives and outcomes?

Both goals and objectives use the language of outcomes – the characteristic which distinguishes goals from objectives is the level of specificity. Goals express intended outcomes in *general* terms and objectives express outcomes in *specific* terms.

- Objectives are intended results or consequences.
- Outcomes are achieved results or consequences

Perils of Precision

- *Imprecisely stated objective:* Program participants will have a better understanding of math and reading skills enabling them to complete graduation requirements in the future.
- *Precisely stated objective:* Eighty-five percent of program participants will score at least one grade level higher by the end of their first year of participation in the program.

Fidelity of Implementation

- Treatment integrity is often assumed, rather than assessed
- Outcomes cannot be attributed to the intervention unless one measures the extent to which the intervention plan was implemented

Economic Evaluation

Merit/Worth Distinction



Mercedes-AMG S63 / S65



Ford Focus

Key Concepts

- **Costs are resources used, not money spent.**
- **The perspective of the analysis affects the costs considered.**
- **Costs must be adjusted to account for the passage of time.**
- **Costs can be variable or fixed.**
- **Cost analyses should distinguish between marginal and average costs.**

Convert everything to...



Types of Economic Analysis

- **Cost analysis**
- **Cost effectiveness**
- **Efficiency**
- **Cost benefit analysis**

Cost-Effectiveness Analysis

- Estimates costs and outcomes of interventions
- Expresses outcomes in natural units
 - ✓ e.g., cases prevented, lives saved
- Compares results with other interventions affecting the same outcome
- Summary measure: cost-effectiveness ratio
 - ✓ Cost per some outcome achieved
 - ✓ e.g., cost per case prevented, cost per life saved

Effectiveness vs Efficiency

- **Cost Effectiveness** takes the benefits arising from the activities of the program as a given and asks whether these could have been produced at a lower cost compared with alternatives
- **Cost Efficiency** is the extent to which the program has converted or is expected to convert its resources/ inputs (such as funds, expertise, time, etc.) economically into results in order to achieve the maximum possible outputs, outcomes, and impacts with the minimum possible inputs.

Purposes of Program Evaluation

- **Demonstrate program effectiveness to funders**
- **Improve the implementation and effectiveness of programs**
- **Better manage limited resources**
- **Document program accomplishments**
- **Justify current program funding**
- **Support the need for increased levels of funding**
- **Satisfy ethical responsibility to clients to demonstrate positive and negative effects of program participation**
- **Document program development and activities to help ensure successful replication**

Underlying Logic of Evaluation

- *No evaluation is good unless... results are used to make a difference*
- *No results are used unless... a market has been created prior to creating the product*
- *No market is created unless... the evaluation is well-focused, including most relevant and useful questions*