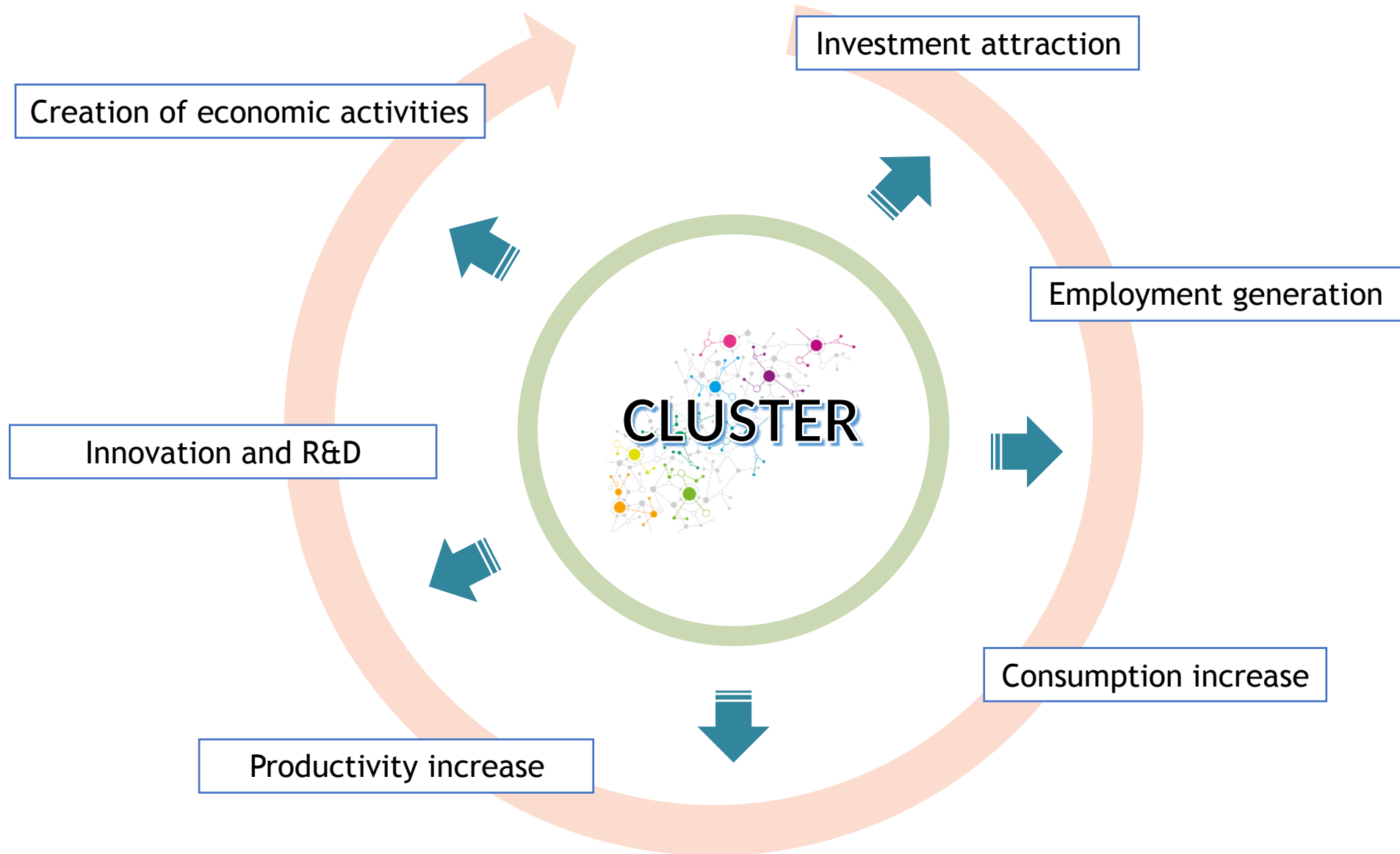

Indicators System to Evaluate Logistic Cluster

Prof. Dr. Cristiano Farias Almeida

Liège

- 27th November 2019 -

1. Background - Cluster as a tool of economic development



What is a successful cluster

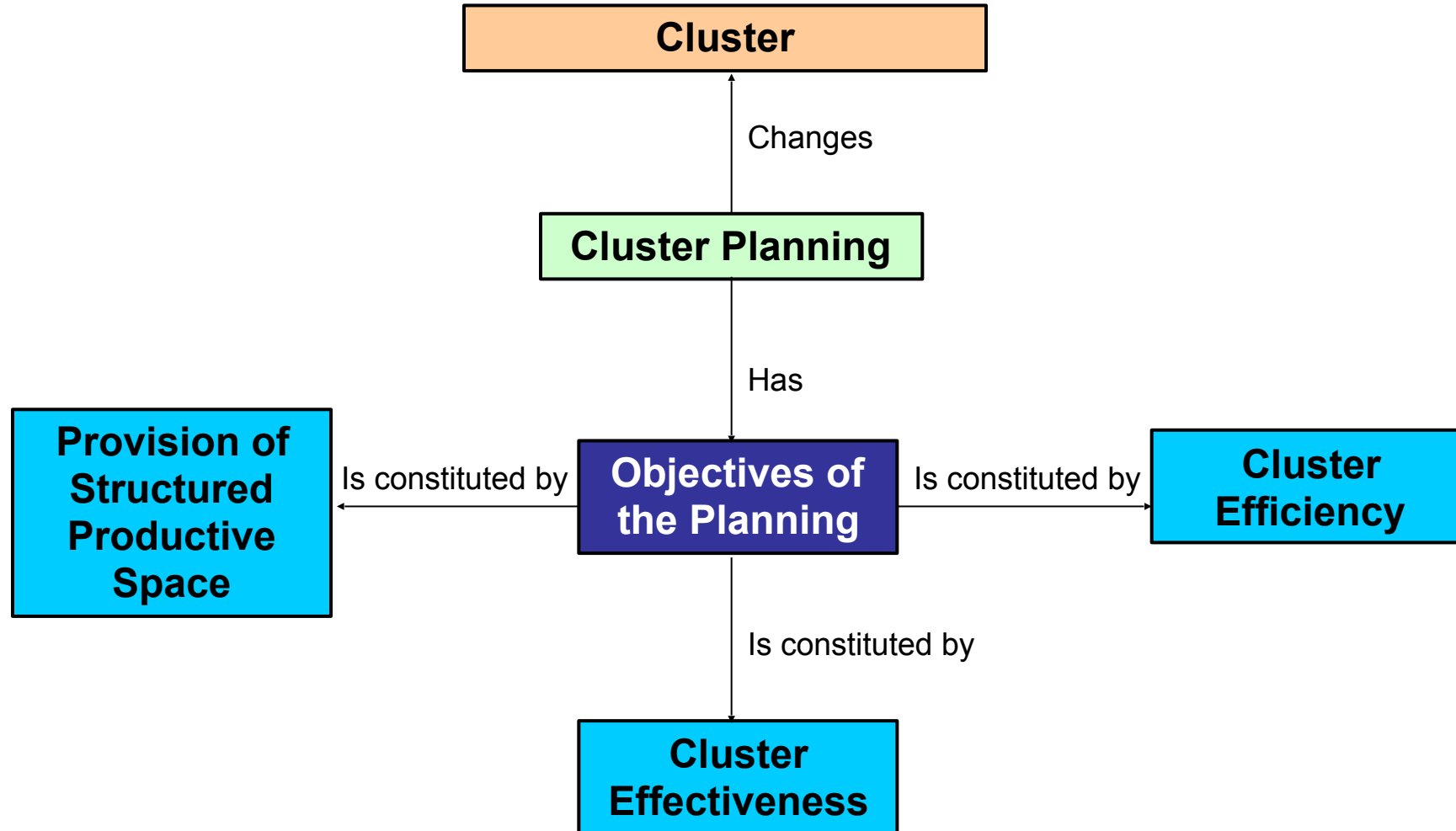


What is a successful cluster

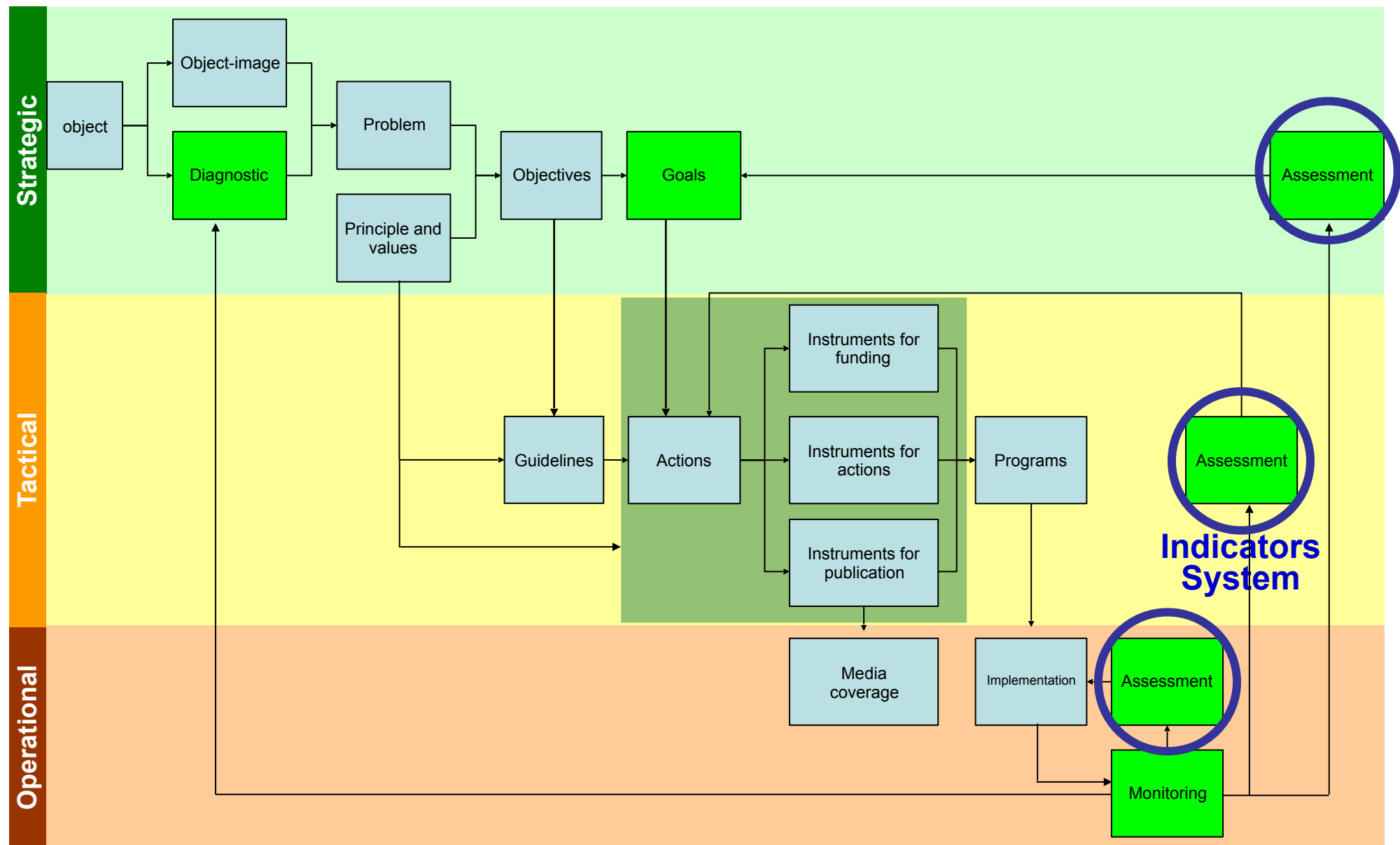
Cluster Planning



3. Cluster Planning Objective Framework



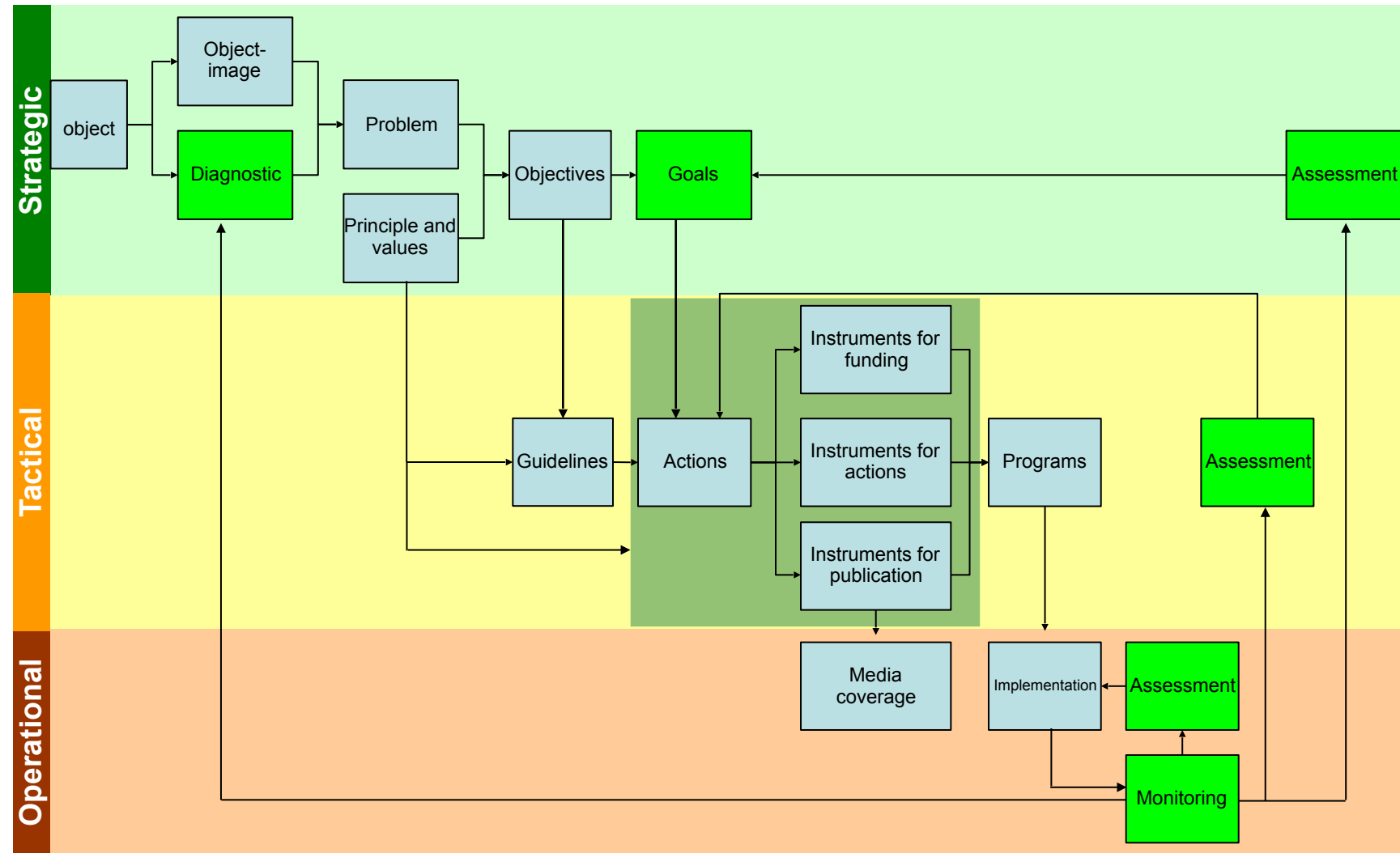
4. Integrated Planning Process and Indicators System



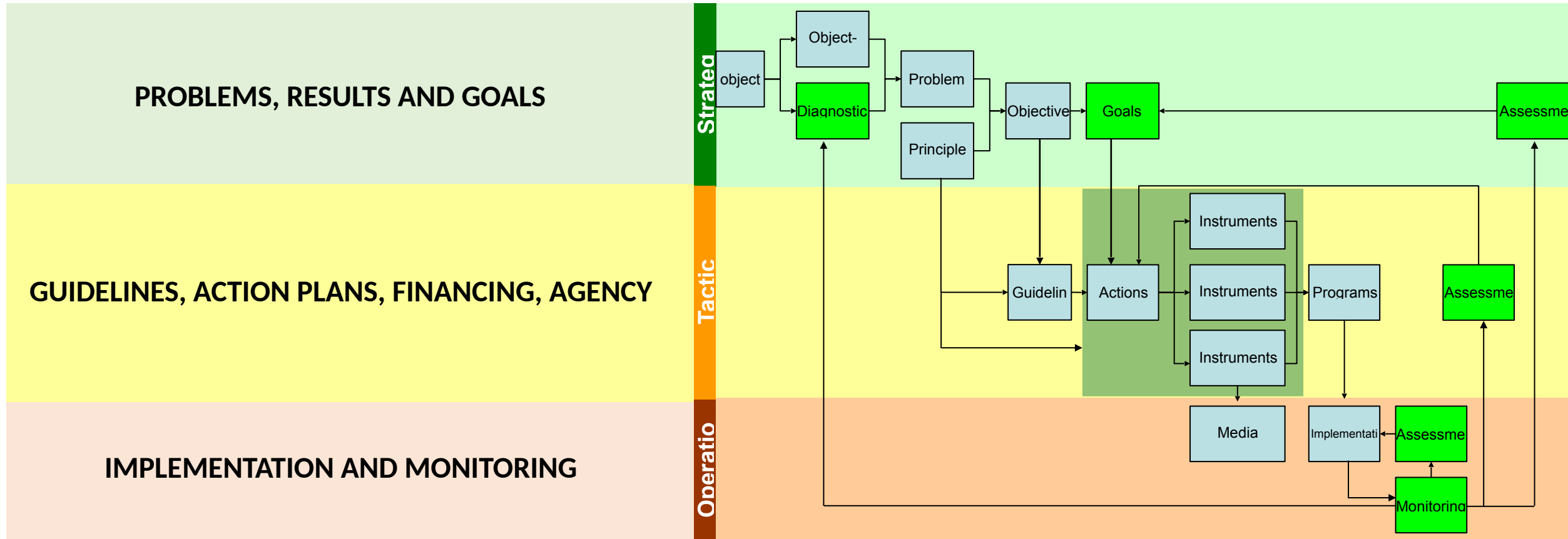
Source: Adapted from Yamashita et. al (2009).

5. Results-Driven Integrated Planning - Monitoring and Assessment

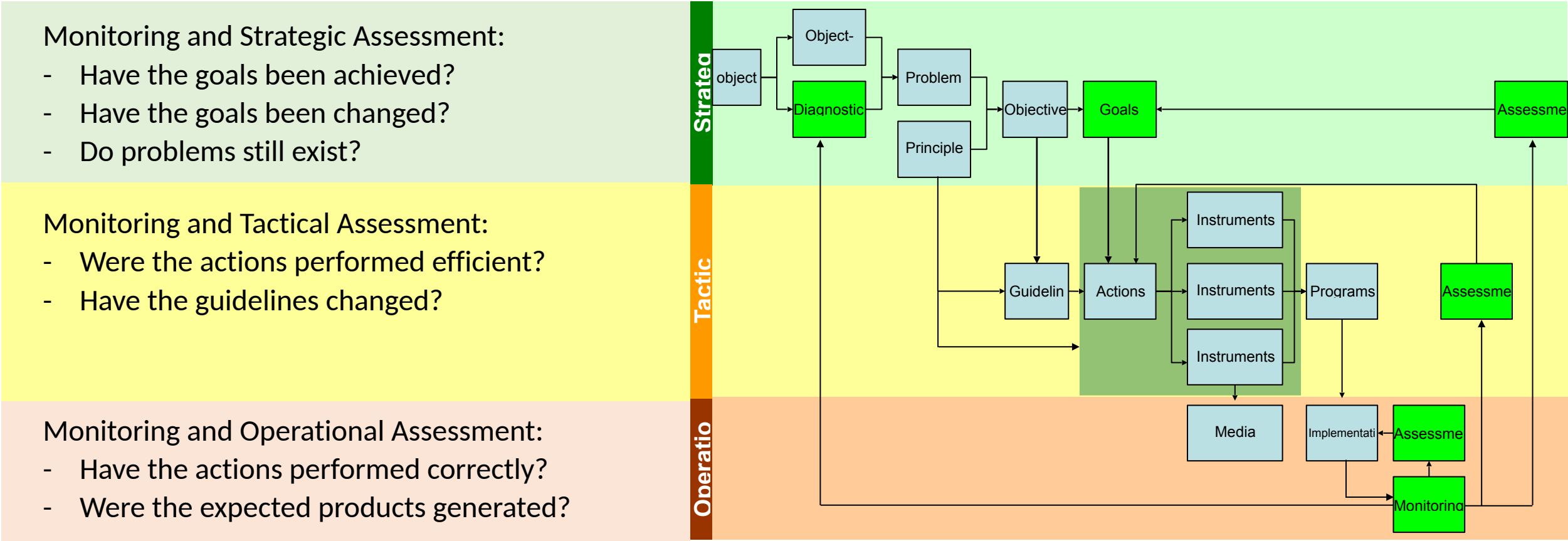
- a. Flow inversion:
 - From the desired outcomes for action.
- b. Well-defined steps
- c. Relevant, constant and low cost monitoring
- d. Process evaluation flow



5. Results-Driven Integrated Planning - Monitoring and Assessment

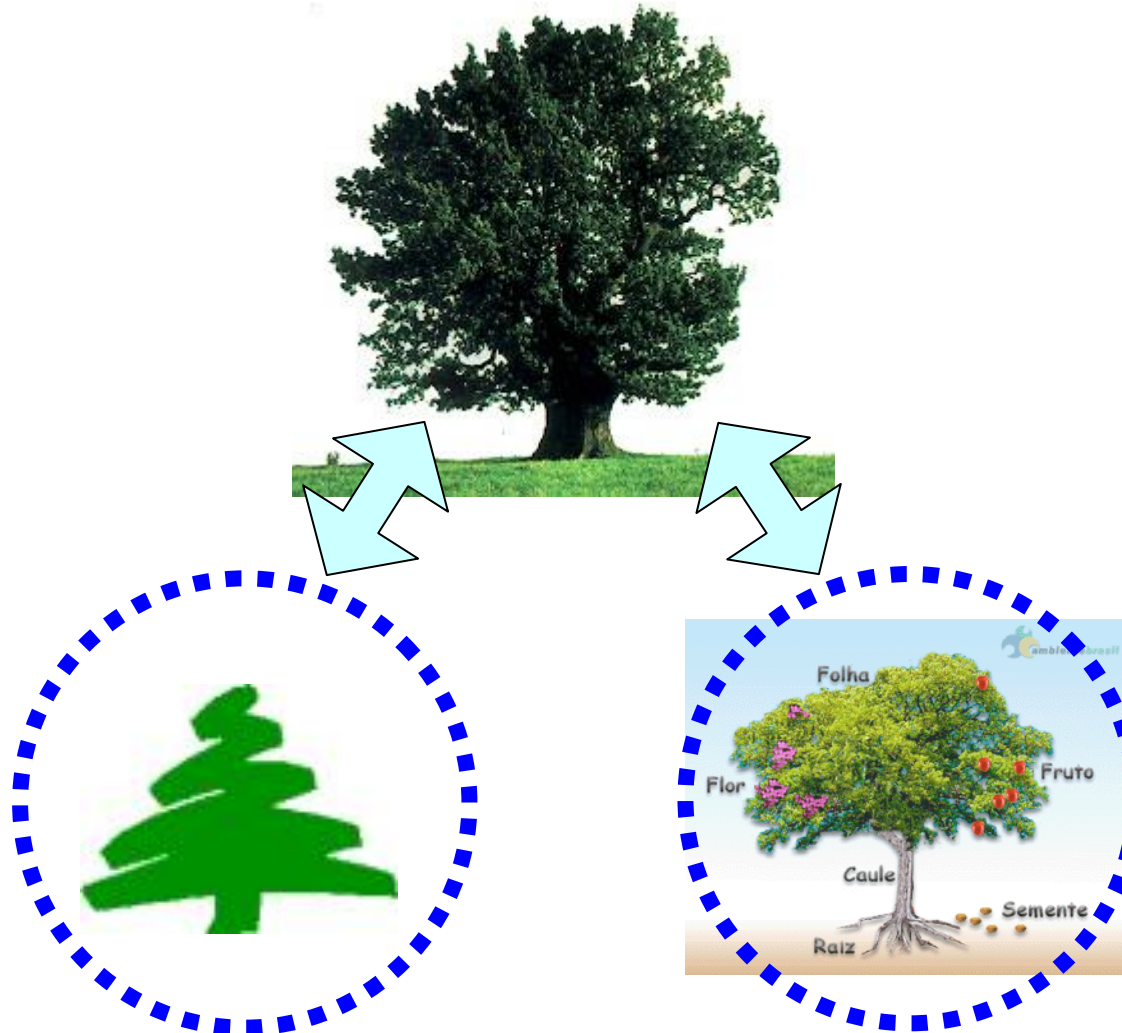


5. Results-Driven Integrated Planning - Monitoring and Assessment



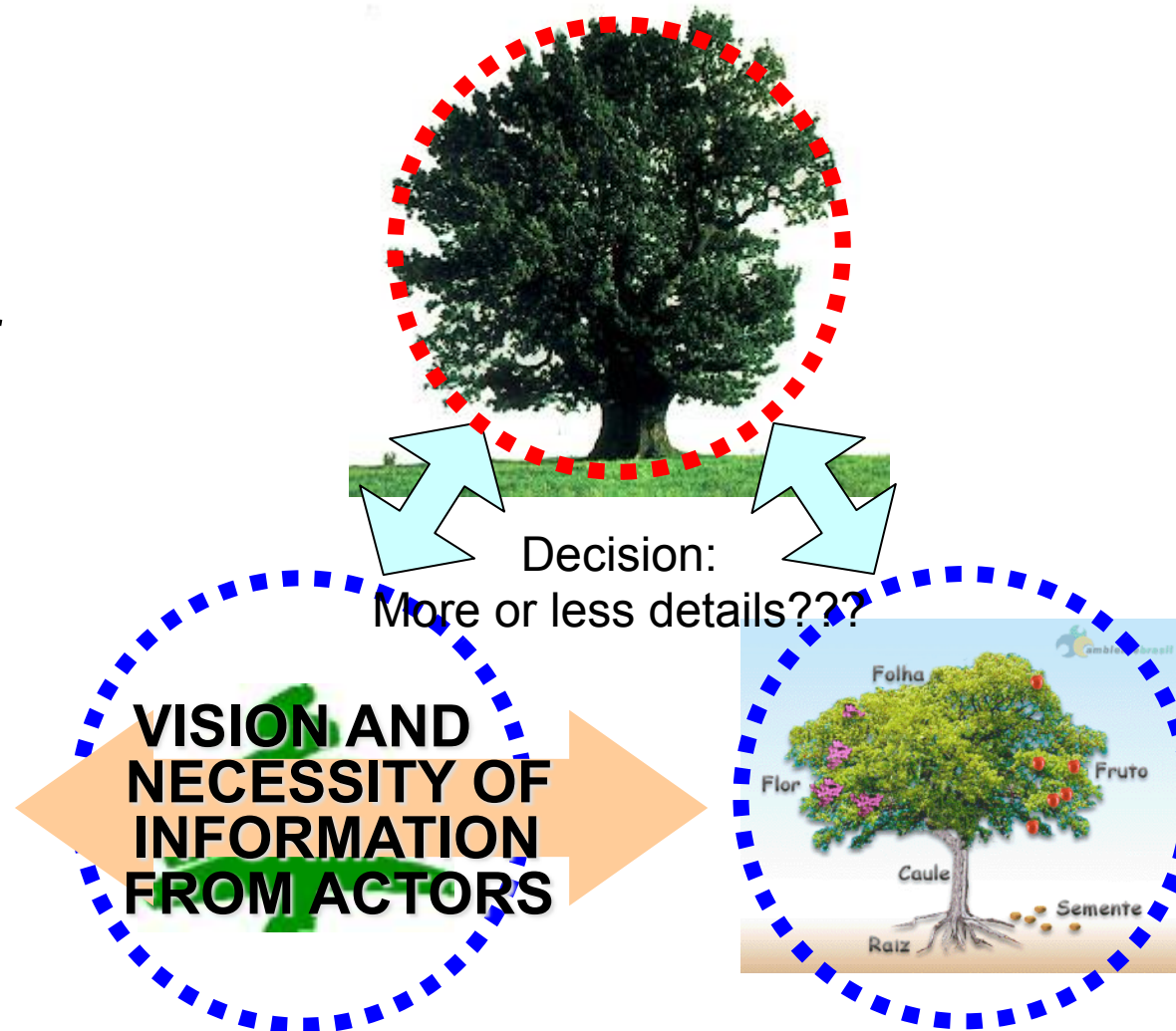
6. Methodological Approach

- Indicator System
 - Elements to be represented
 - Way how representations should be made
 - Rules of interpretation



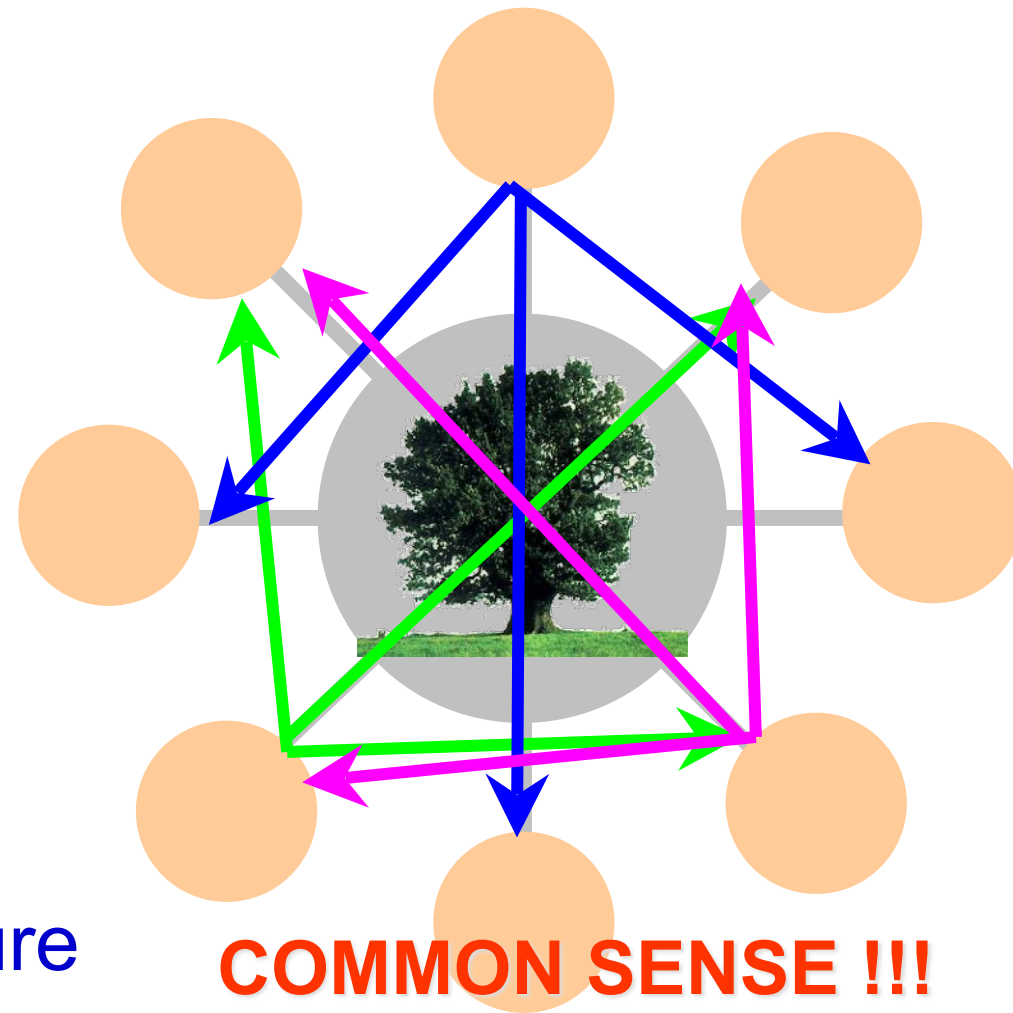
6. Methodological Approach

- Cost
 - Relation between level of detail and information needs
 - The more detail the higher the cost

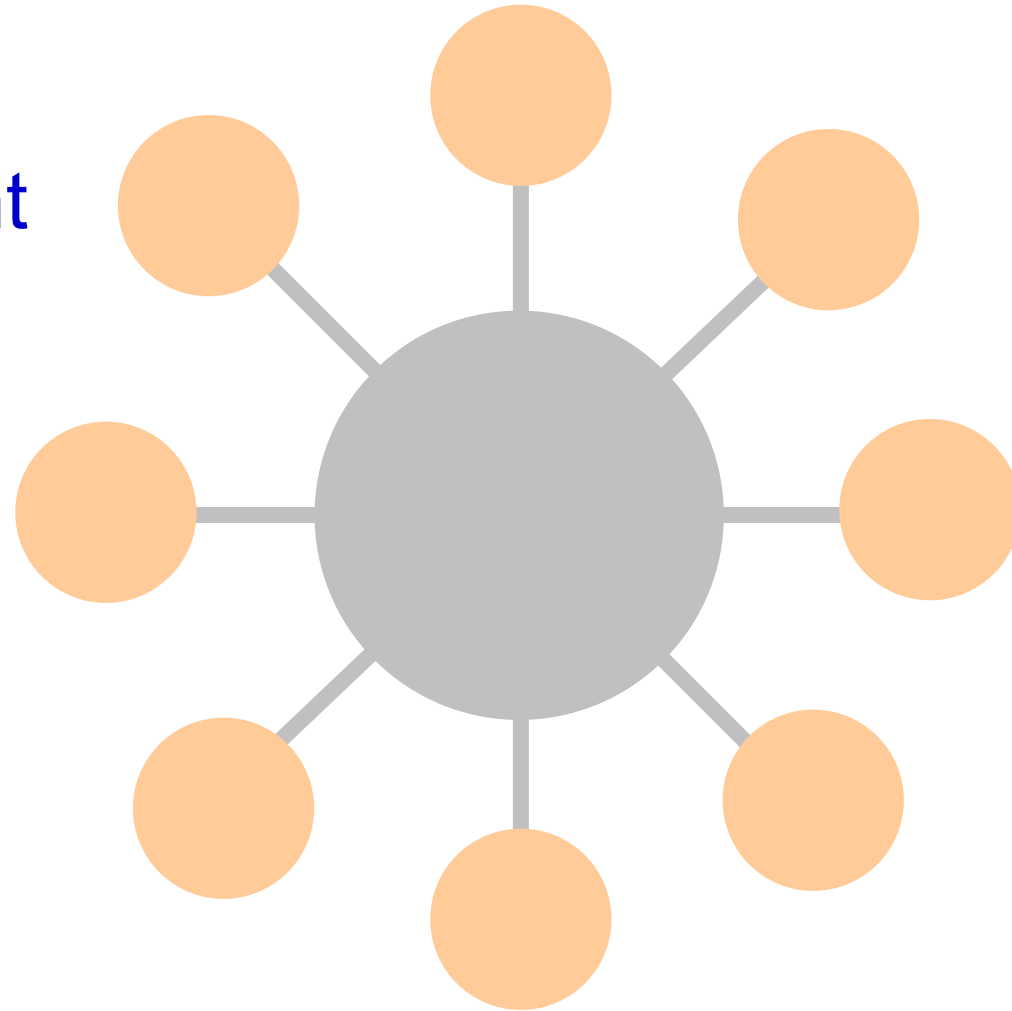


6. Methodological Approach

- Why the need of consensus?
 - Same object
 - Different actors and different views
 - Necessity of communication and relationship
- Necessity of nomenclature and a rule of common interpretation

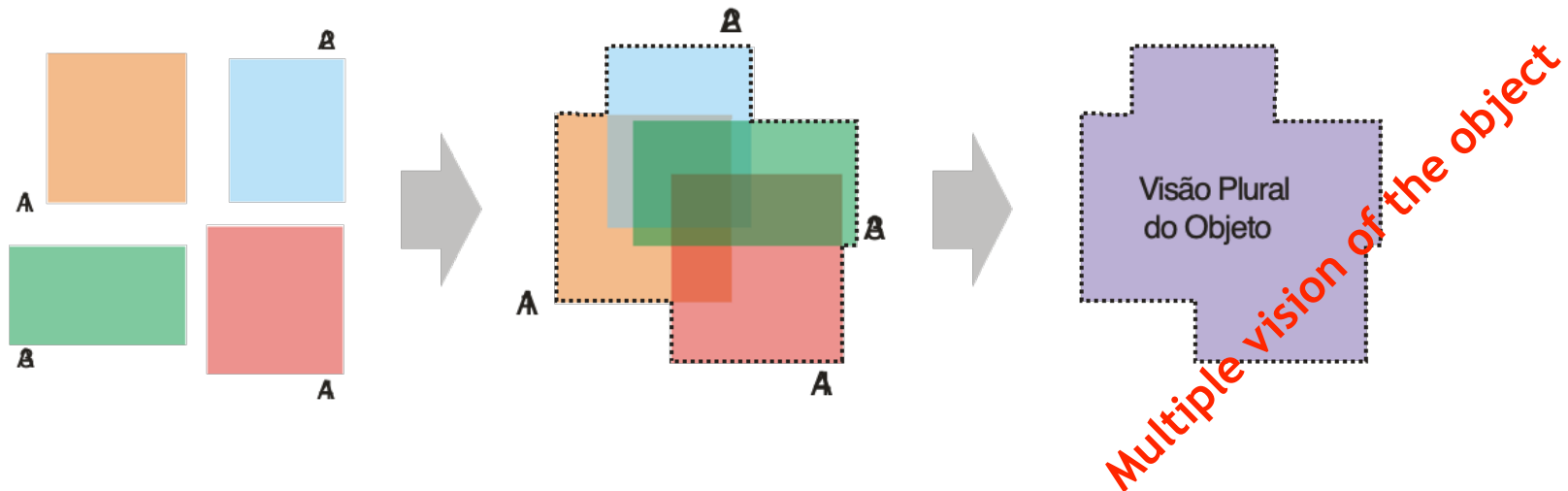


- Stakeholder engagement
 - Seminars
 - Workshops
 - Surveys
 - Validation sessions



How should it be developed?

- Because every actor has a vision...
- A defined interest...
- See only part of the context...



Indicator Types by Function

Tipo de Indicador	Descrição
Descritivo	Descrevem, caracterizam um determinado tópico. Refletem como está a situação, sem referência de como deveria ser. São os indicadores gerados pelo modelo DPSIR
Desempenho ou Eficácia	Comparam as condições atuais com uma série de valores de referência, a exemplo de metas ou resultados esperados.
Eficiência	Possibilitam a avaliação da eficiência das ações, refletindo qual a relação, quantitativa e qualitativa, entre meios empregados e resultados obtidos.
Global	São os mais abstratos e sintéticos dos indicadores. São, em geral, índices, agregações de diversos indicadores transmitindo uma visão geral sobre o tópico tratado.

6. Indicators

- Set of descriptive indicators to represent the current condition of the cluster

Set of descriptive indicators

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49

=

**Current
Condition of
the Cluster**

The synthesis of this set
represents the development
of the cluster

The indicators should have the same pattern regarding:

- **Way of data collection**
- **Metric**
- **Periodicity collection**

Indicator **Terminal Capacity**

Unity: passengers or ton/day

Description: represents the maximum number of passengers or cargo per unit of time in the terminal.

Aggregations:

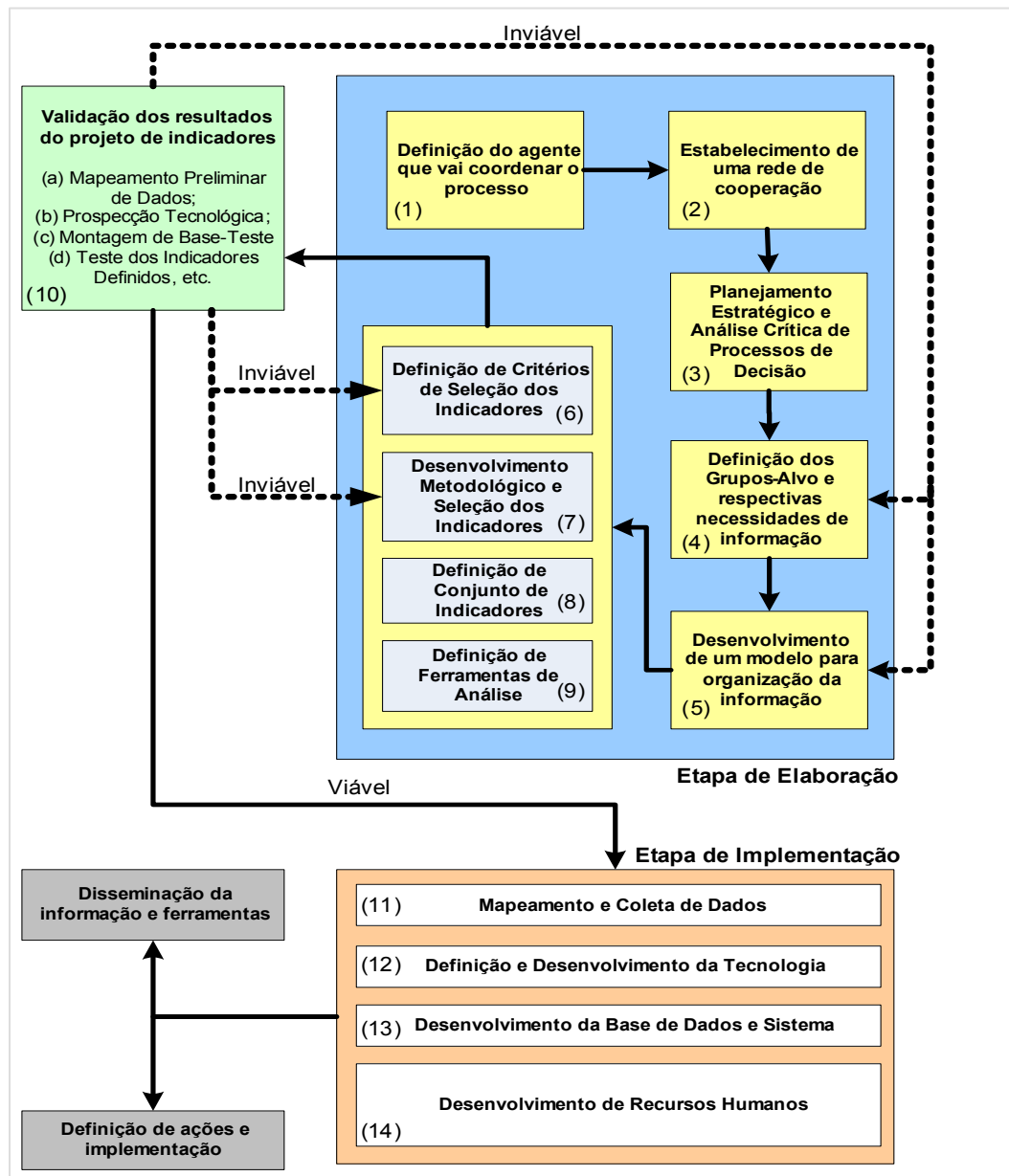
1. Mode (road, rail, waterway and air)
2. Type of the transported object (passenger or cargo):
 - a. Cargo type.
3. Temporality:
 - a. Year.

Metric:

$$CT = \frac{VST}{TOV} \cdot TFDT \cdot \overline{CV}$$

CT = Capacidade do terminal;
 VST = Veículos simultâneos no terminal (em posição de embarque/desembarque ou carregamento/descarregamento);
 TOV = Tempo de ocupação médio de cada “vaga”;
 $TFDT$ = Tempo de funcionamento diário do terminal;
 CV = Capacidade média ponderada do veículo.

7. Methodology - The evaluation of the transport programs of the Ministry of Transport of Brazil



Main Steps:

Step 1: Definition of Basic Concepts

Step 2: Definition of the Key Groups

Step 3: Identification of the Information Needs

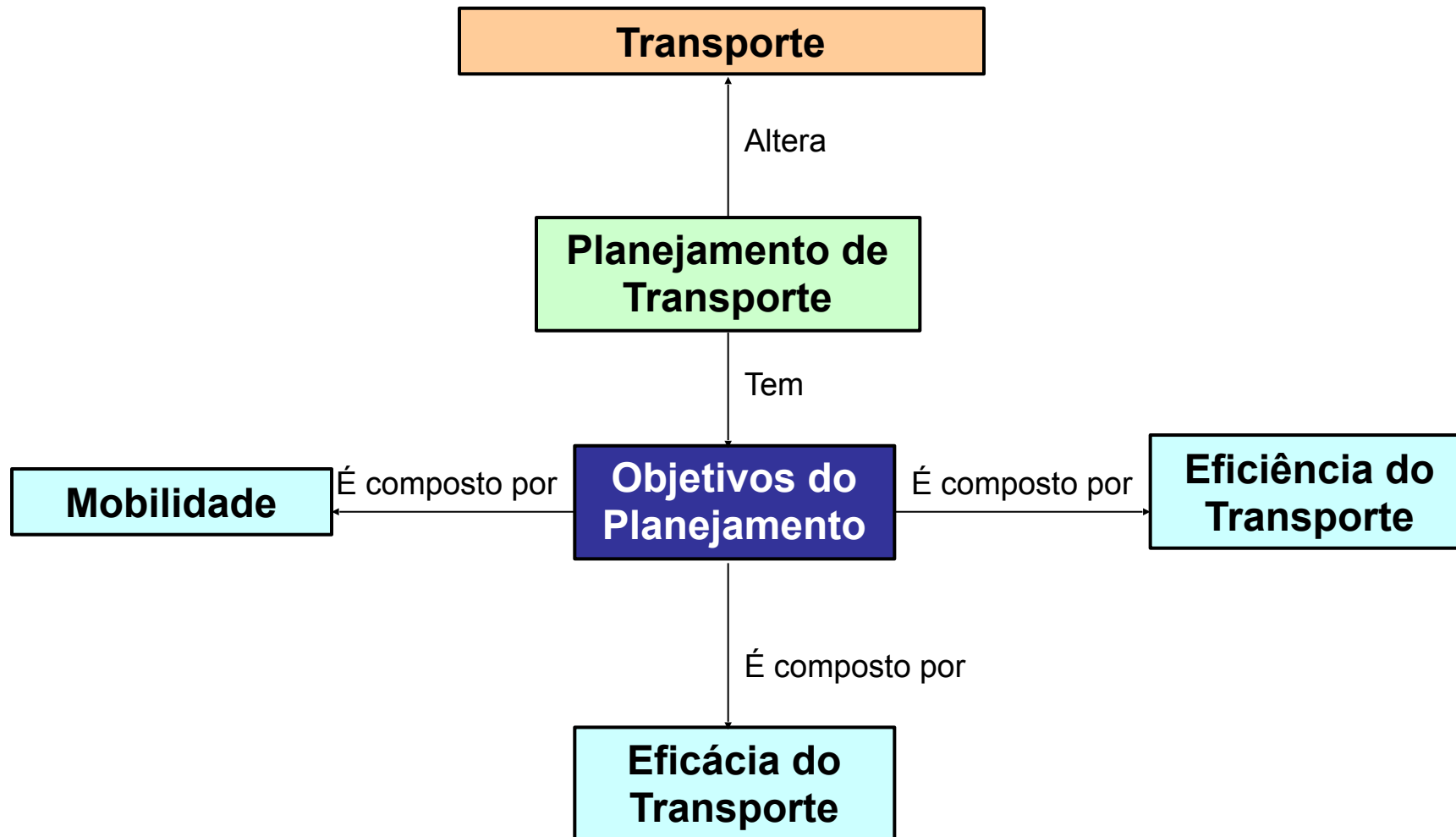
Step 4: Definition of Indicator Selection Criteria

Step 5: Development of Indicators

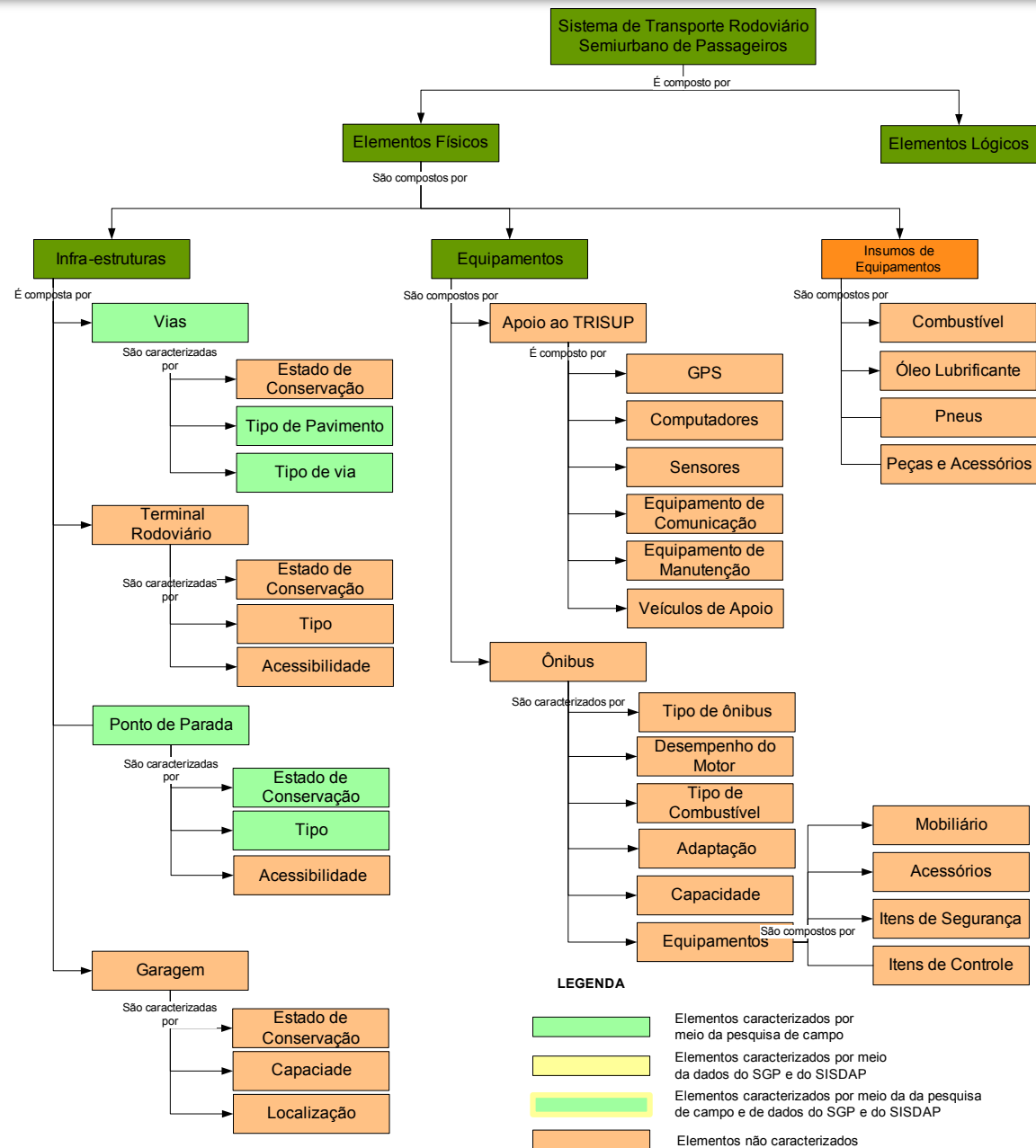
Step 6: Indicator collection, measurement and analysis system

8. The Semantic Network and the Indicators System - The Basic Structure

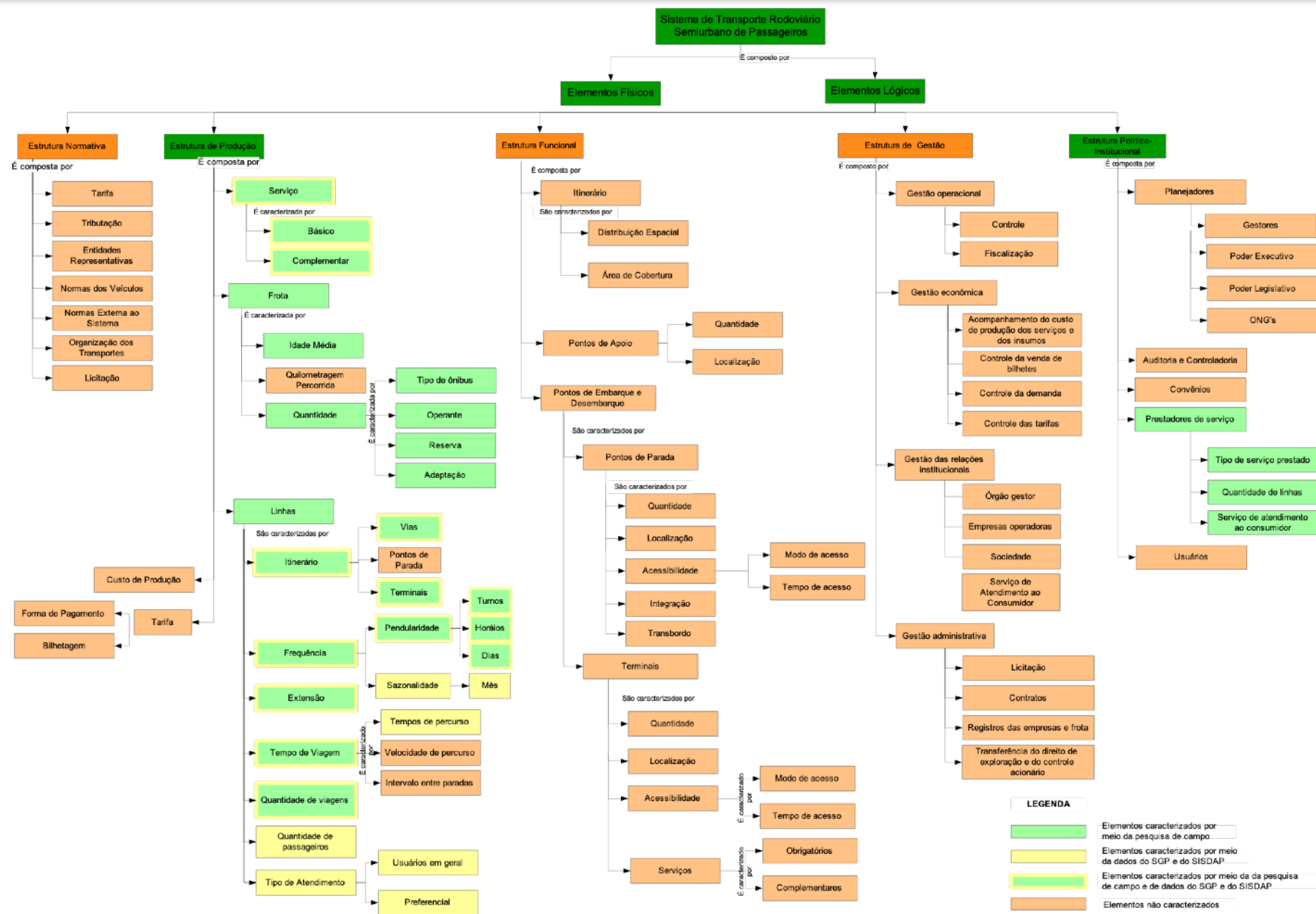
The Evaluation of the transport programs of the Ministry of Transport of Brazil



8. The Semantic Network and the Indicators System - The Basic Structure



8. The Semantic Network and the Indicators System - The Basic Structure



What is a successful cluster



Merci!

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