

Resilient
Rules



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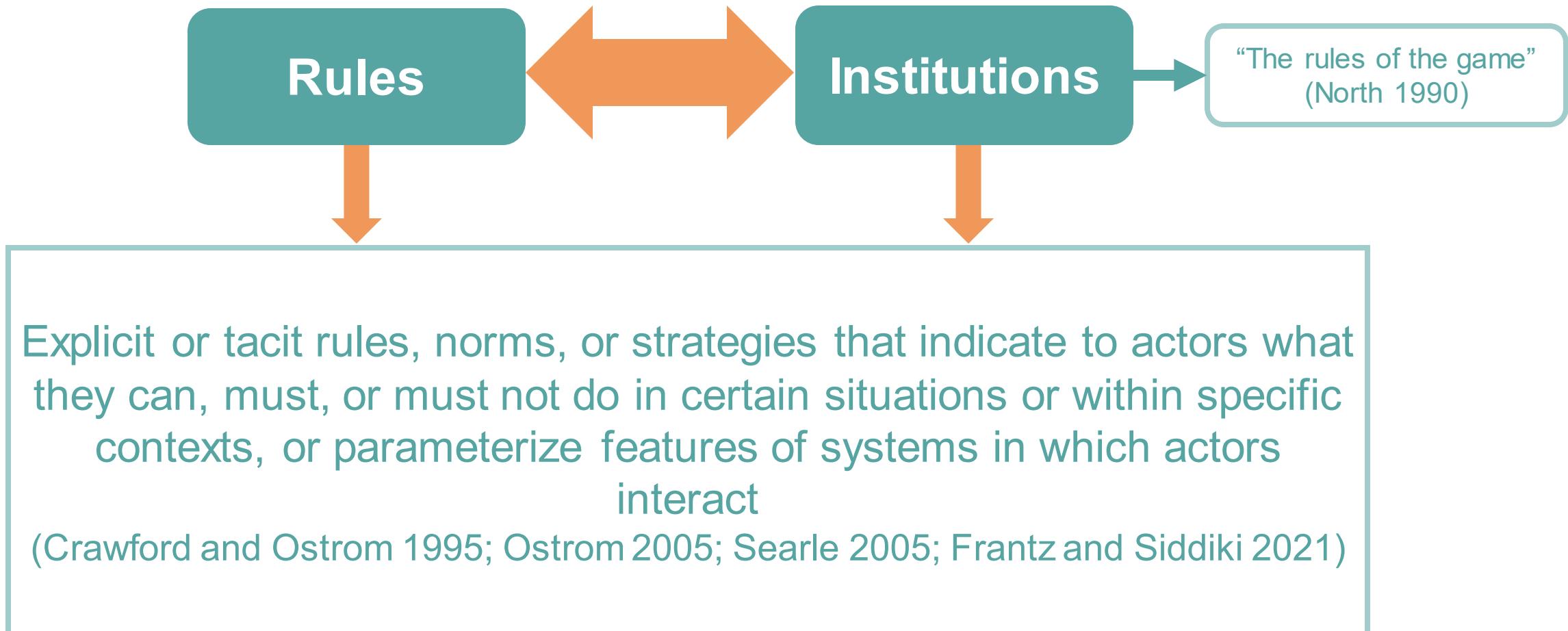
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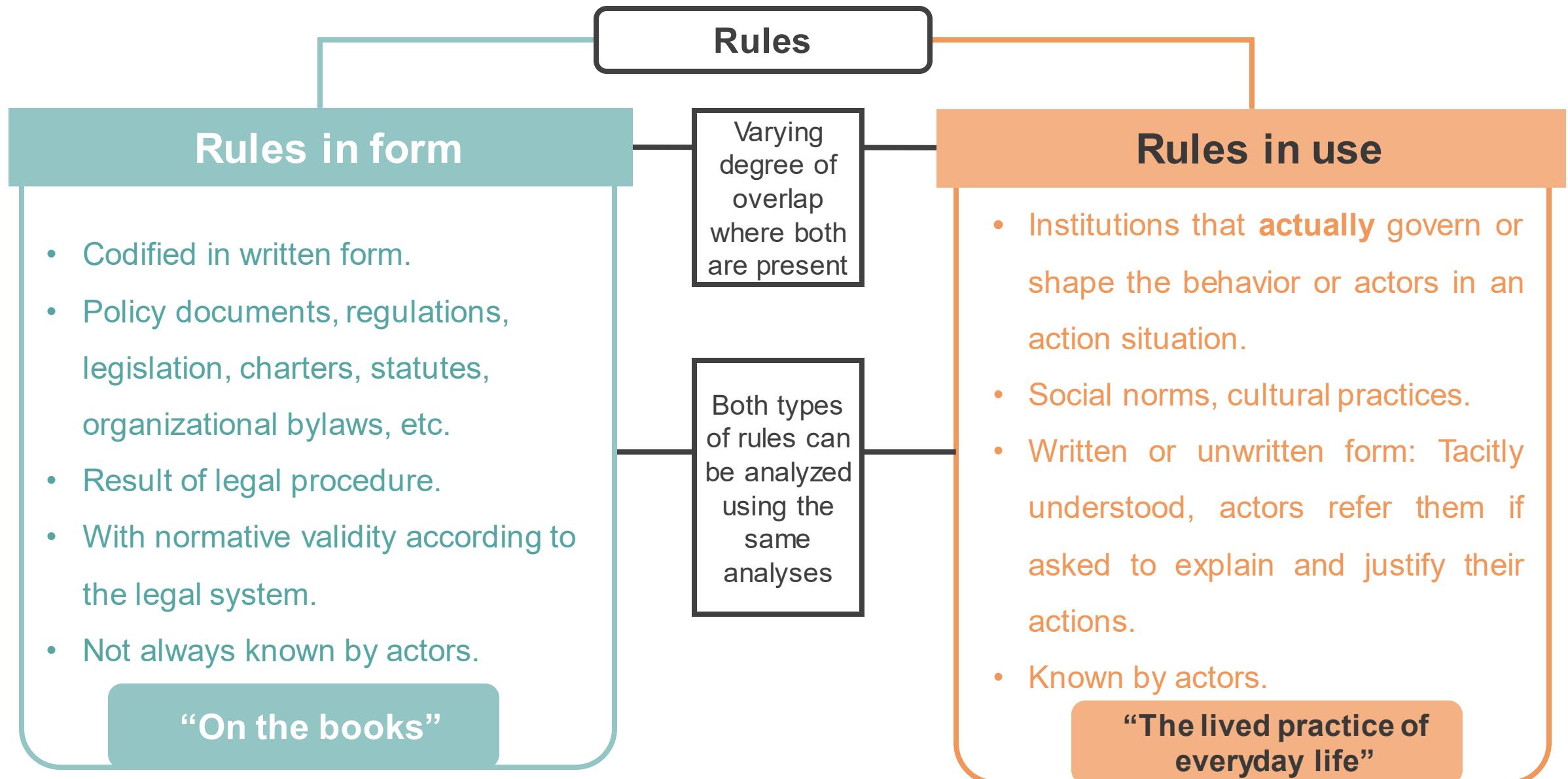
Taxonomy of Rules: An auto-training tool

Authors:

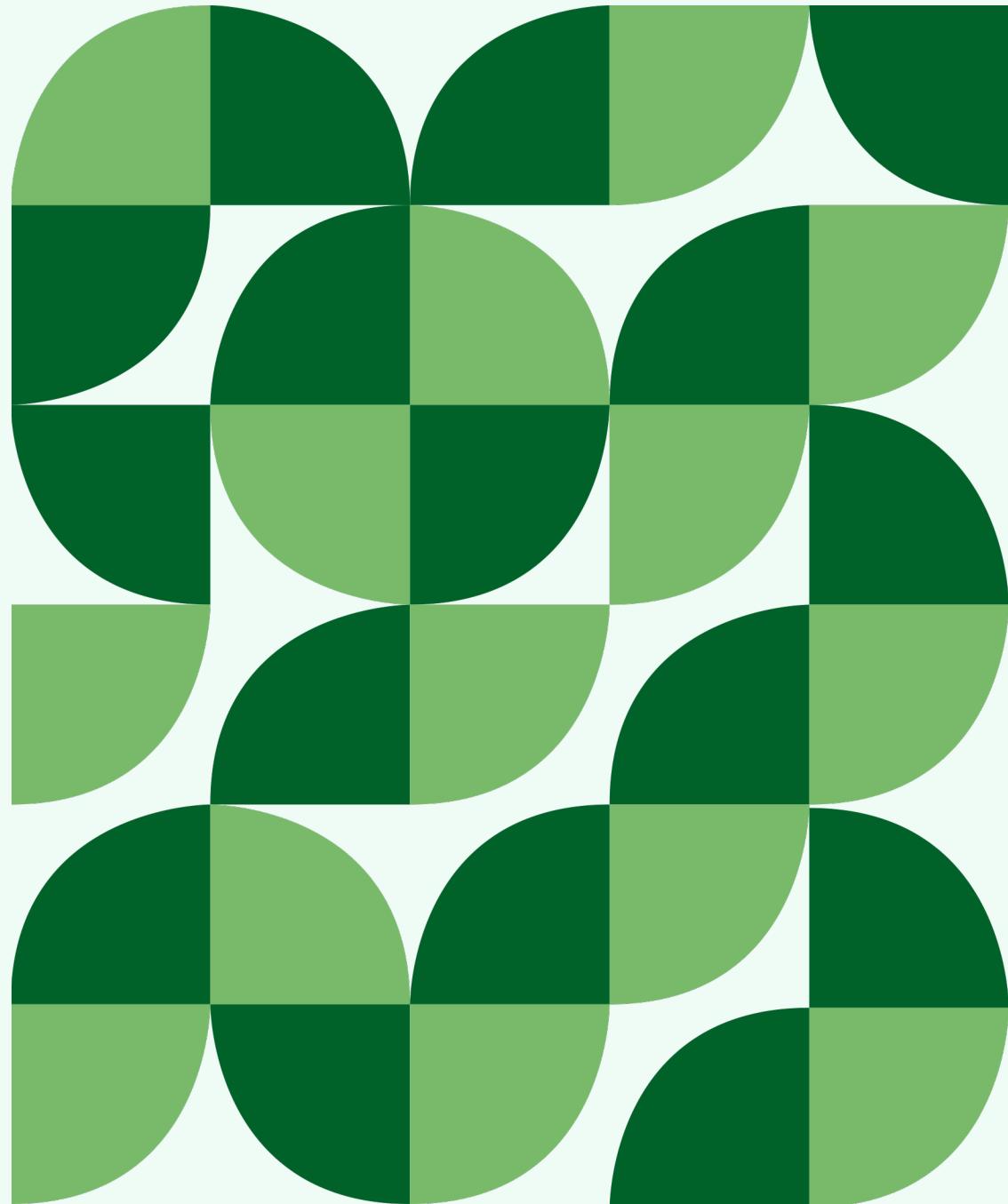
Estévez-Moreno, Laura X.; Tenza-Peral, Alicia; Lacosta García, F. Javier; Lare David, Ismael; Suárez Marín, Andrea; Pérez Ibarra, Irene

Rules and institutions





Source: Siddiki et al. 2022, Heldeweg and Lammers 2019, Ianah et al. 2020.

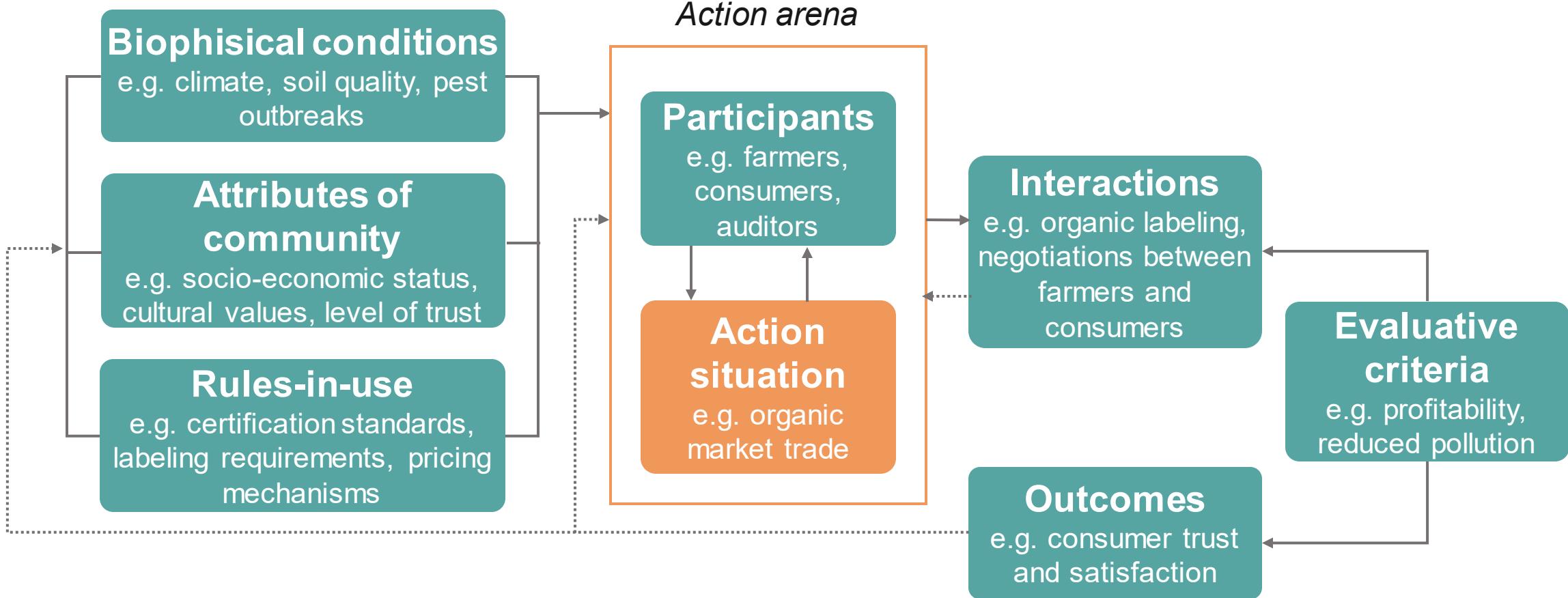


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Typology of rules

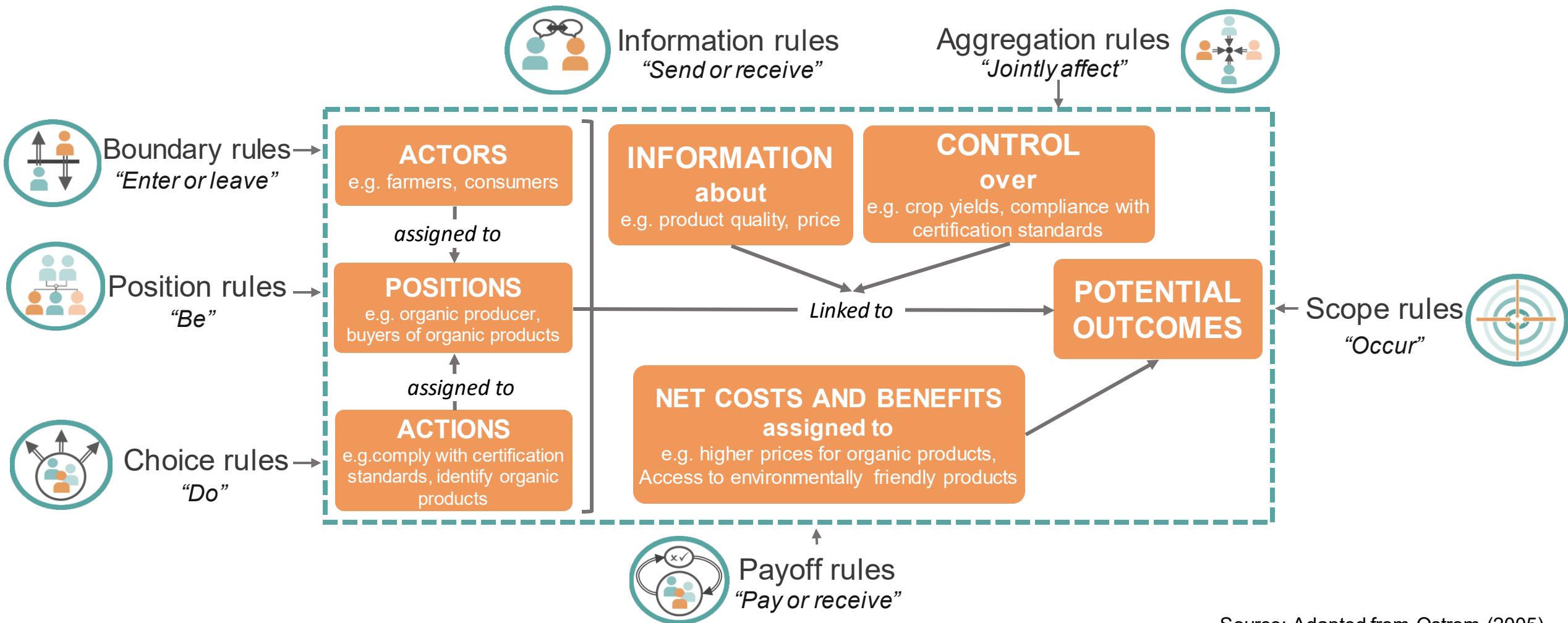
IAD framework

Exogenous variables



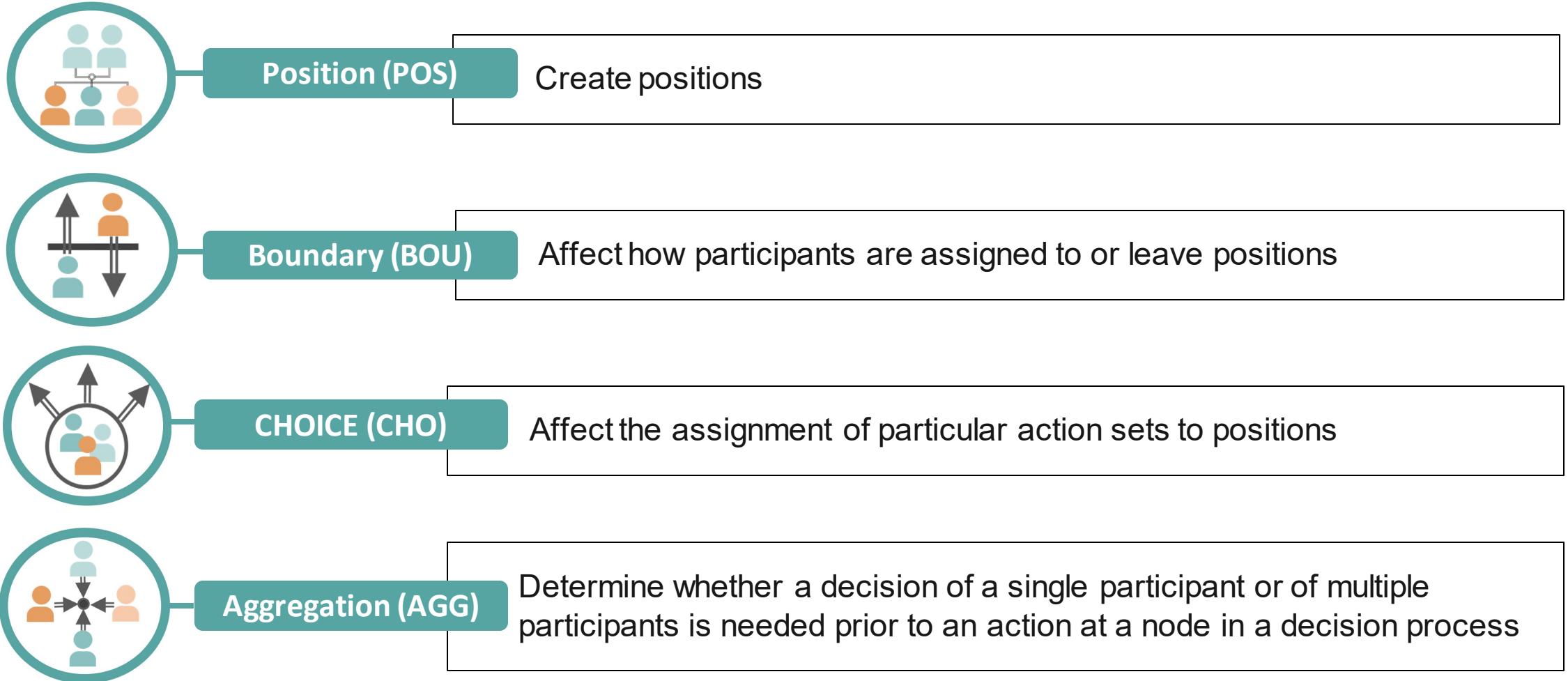
Source: Adapted from Ostrom (2005).

The internal structure of an action situation



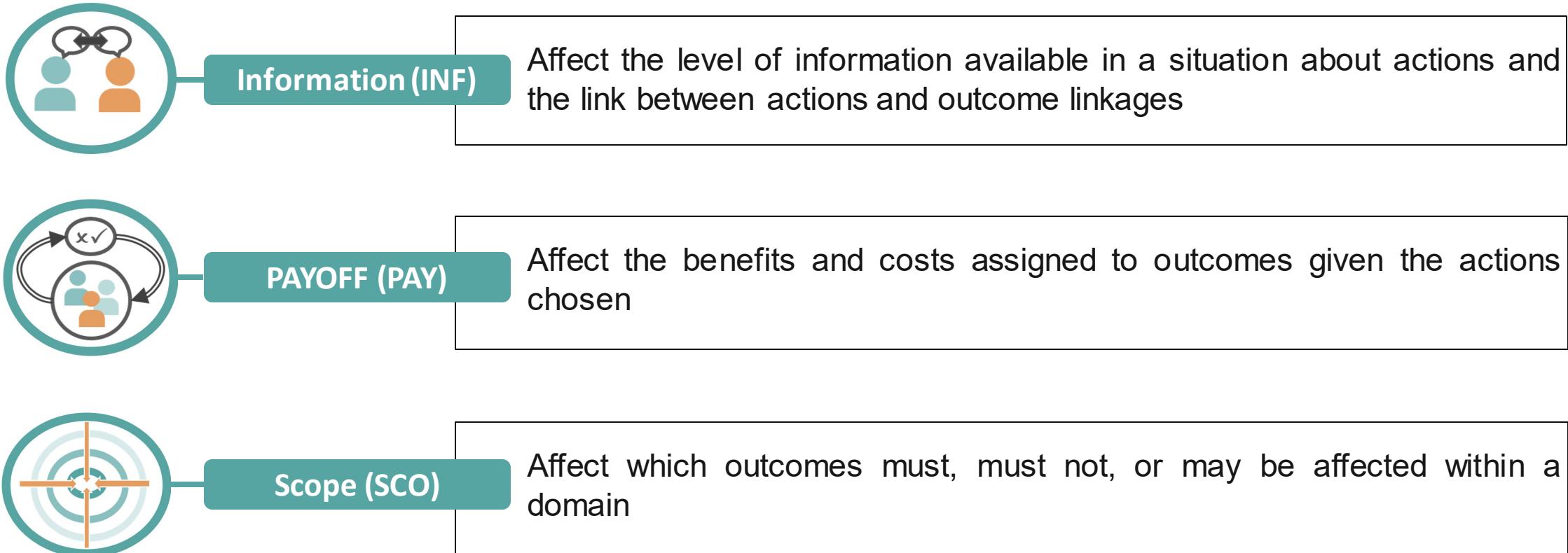
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Typology of rules

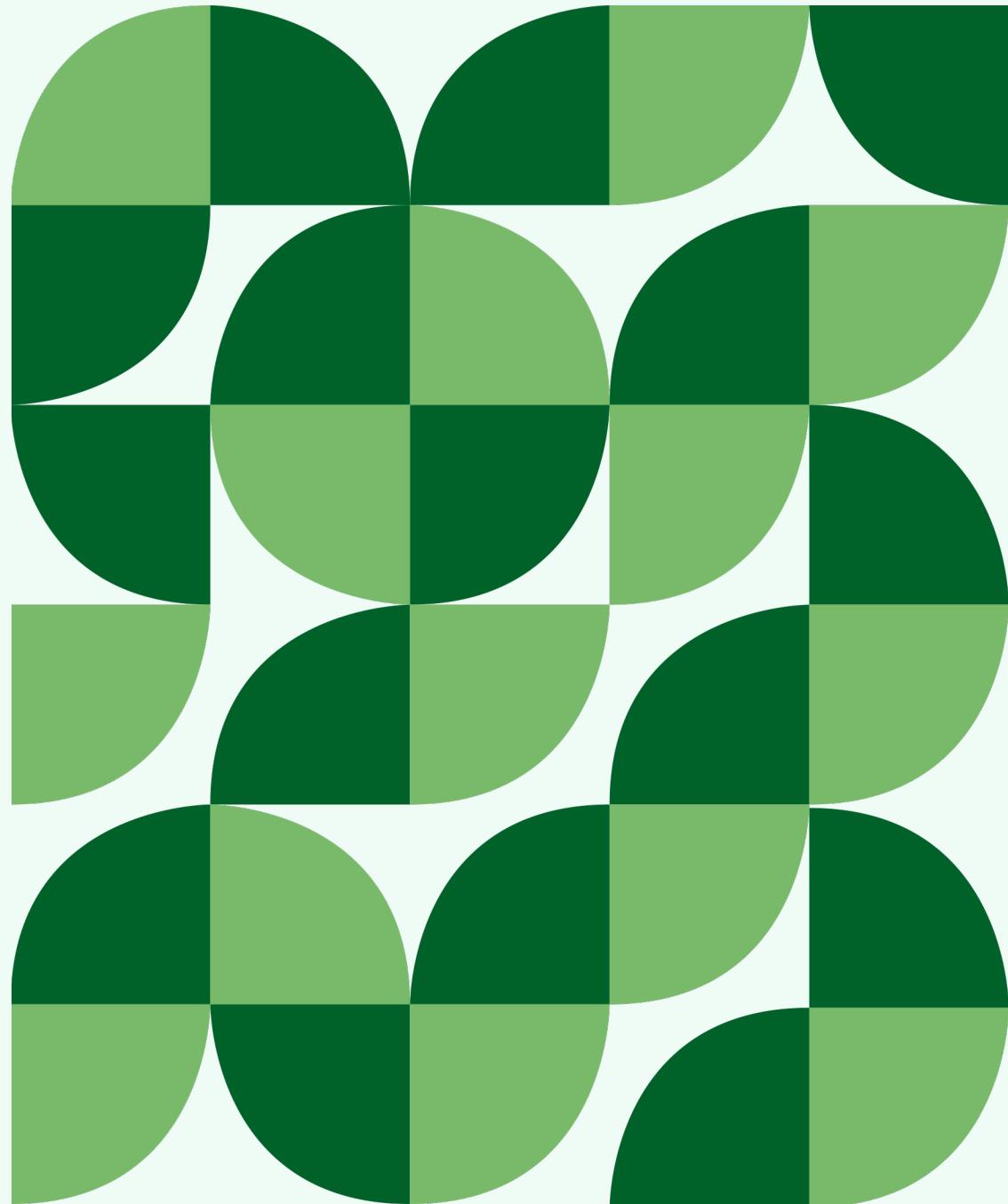


(Ostrom and Crawford 2005)

Typology of rules

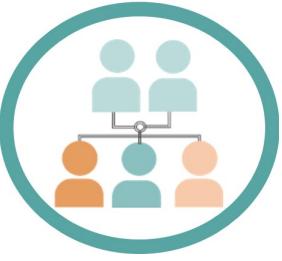


(Ostrom and Crawford 2005)



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Taxonomy of rules



Position rules (POS)

Defines positions and entities with specific authority and roles, and specifies the allowable number of participants per position or entity

Categories

Definition

Creates, defines, and otherwise eliminates positions and entities in an action situation

Definition

Number

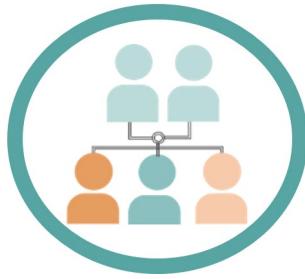
States the number of actors who hold a position

Lower bound, upper bound

Sub-Categories

Function

Defines the functions, rights, responsibilities, duties, and obligations associated with each position or entity



Position rules (POS)

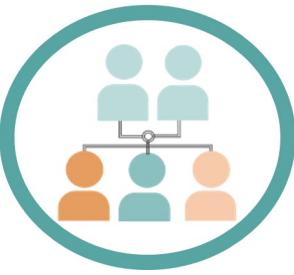
Defines positions and entities with specific authority and roles, and specifies the allowable number of participants per position or entity

Examples

The Governing Board comprises the President, the Vice president, the Secretary, and the Treasurer

The guard is responsible for overseeing the proper use of the grazing lands

Local groups must include at least seven producer members and three non-producer members



Position rules (POS)

- Categories
- Definition
- Sub-Categories
- Rules Examples

Defines positions and entities with specific authority and roles, and specifies the allowable number of participants per position or entity

Definition

Creates, defines, and otherwise eliminates positions and entities in an action situation

The Governing Board comprises the President, the Vice President, the Secretary, and the Treasurer

POS.def

Number

States the number of actors who hold a position

Lower bound, upper bound

Local groups must include at least seven producer members and three non-producer members

POS.num.low

Function

Defines the functions, rights, responsibilities, duties, and obligations associated with each position or entity

The guard is responsible for overseeing the proper use of the grazing lands

POS.fun



Boundary rules (BOU)

Defines who is eligible and outlines the process for assignment to and withdrawal from a position.

Categories

Eligibility

Entry

Exit

Definition

Defines the eligibility criteria for entering a position

Describes the process of entering a position

Describes the process of leaving a position

Sub-Categories

Membership/residency, personal (ascribed, acquired), resource

Control, multiple, past, procedure (elapse, fee), succession

Control, procedure (elapse, fee), time



Boundary rules (BOU)

Defines who is eligible and outlines the process for assignment to and withdrawal from a position.

Examples

Members of commissions appointed by the Assembly shall serve for three years

Board Members must have at least 5 years of experience serving on a nonprofit Board

Except for direct relatives of a founding member, membership requires a financial contribution



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Members of commissions appointed by the Assembly shall serve for three years

BOU.elิ.per.acq

BOU.ent.fee

BOU.exi.tim



Choice rules (CHO)

Specify permissible and restricted actions and infrastructures, requirements for resource contributions and allocations, procedures for monitoring, and the organization and conduct of meetings.

Sub-Categories

Definition

Categories

Definition

Sub-Categories

Specifies what specific positions are required, permitted, or prohibited to do

Actions

Infrastructure

Establishes the type, quality, and quantity of natural and physical infrastructure (such as materials, private or public infrastructure, tools, and technology) that are required, permitted, or prohibited

Criteria, type (material, economic)

Describes the forms and models of resource sharing and distribution allocation

Allocation

Meeting

Describes all aspects related to meetings, gatherings, assemblies events, courts, etc.

Participation (attendance, behavior), setting (location, time (duration, frequency, timing), type

Criteria, type (action, economic, material)

Establishes the contribution and input to be made by the actor who hold a position in terms of time, resources or effort in a given activity

Contribution

Monitoring

Describes the monitoring process for compliance with actions and outcomes



Choice rules (CHO)

Specify permissible and restricted actions and infrastructures, requirements for resource contributions and allocations, procedures for monitoring, and the organization and conduct of meetings.

Examples

Shepherds must keep their sheep enclosed overnight during the spring months

Livestock producers must meet every six months at the association's office

Farmers must not use tractors to prepare the land in mountain plots

Farmers must dedicate one day per month for the maintenance of the communal irrigation channels

Farmers have the right to receive, equally, the profits derived from the use of the community's renewable natural resources

The guard must patrol the forest to detect any cases of timber theft



Choice rules (CHO)

Specify permissible and restricted actions and infrastructures, requirements for resource contributions and allocations, procedures for monitoring, and the organization and conduct of meetings

Rules examples

Shepherds must keep their sheep enclosed overnight during the spring months

CHO.act

CHO.all.cri
CHO.all.typ.eco

Profits from the community's renewable resources shall be equally shared among farmers.

Farmers must dedicate one day per month for the maintenance of the communal irrigation channels

CHO.con.cri; CHO.con.typ.act

Categories

Actions

Infrastructure

Allocation

Meeting

Contribution

Monitoring

Rules examples

Farmers must not use tractors to prepare the land in mountain plots

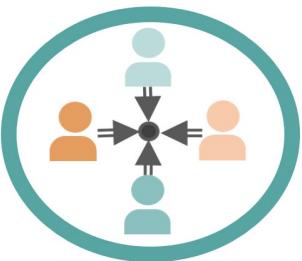
CHO.inf

CHO.mee.tim.fre; CHO.mee.loc

Livestock producers must meet every six months at the association's office

CHO.mon

The guard must patrol the forest to detect any cases of timber theft



Aggregation rules (AGG)

Defines the decision-making procedure to be followed at a node within a decision process, whether by an individual participant or a group, prior to executing an action

Categories

Conflict

Node

Power-sharing

Procedure

Definition

Defines the process to be followed in cases of decision appeals or conflict resolution

Defines the existence of a decision node and the positions involved in it

Establishes the distribution of power and the treatment of actors, taking into account both symmetry and asymmetry in decision-making

Weight

Defines the decision-making process

Sub-categories

Agreement (lack), condition, form



Aggregation rules (AGG)

Defines the decision-making procedure to be followed at a node within a decision process, whether by an individual participant or a group, prior to executing an action

Examples

In case of conflicts over water distribution, the parties must negotiate directly within a maximum of 5 days. If no agreement is reached, the conflict will be submitted to a mediator.

Local leaders are assigned a variable number of votes, depending on the population size of the region they represent

If a quorum exists, approval shall require the affirmative vote by half plus one

The annual update of fine values is decided by the attendees of the general assembly



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Information rules (INF)

Govern the flow and use of information, determining what information is available, how it is accessed and shared, and how it is used to inform decision-making

Categories

Definition

Sub-categories

Network

Establishes the communication network

Node, subject (accuracy)

Setting

Outlines how information is communicated and delivered

Channel, format (language), time (frequency, timing)



Information rules (INF)

Govern the flow and use of information, determining what information is available, how it is accessed and shared, and how it is used to inform decision-making

Examples

Beekeepers shall report the presence of beehives by placing banners of a minimum size of 1m x 1m along the main road

The president shall send the written invitation to the members in all the dialects spoken in the community

The farmer whose livestock has been attacked by wild animals must report the incident immediately and provide accurate details and evidence (e.g., photographs)



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Sub-categories

Node, subject

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**INF.net.nod; INF.net.sub;
INF.set.for; INF.set.cha**

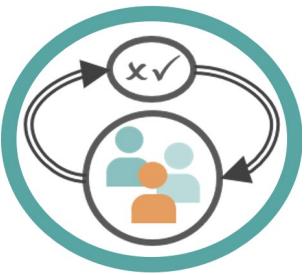
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**INF.net.nod; INF.set.for;
INF.set.for.lan**

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INF.net.sub.acc**

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Payoff rules (PAY)

Assign rewards or sanctions to specific actions or outcomes

Categories

Cause

Consequence

Criteria

Type

Definition

Specifies consequences for actions or outcomes

Action, outcome

Assign rewards, sanctions or warnings to specific actions or outcomes

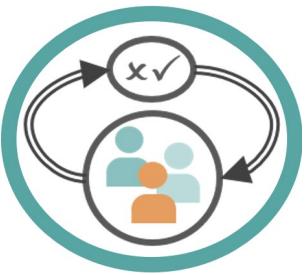
Reward, sanction, warning

Set the criteria for determining the nature, magnitude, and mode of consequences

Set the type of consequences

Sub-categories

Action, economic, emotional (external, internal), legal, material, physical, positional, spiritual



Payoff rules (PAY)

Assign rewards or sanctions to specific actions or outcomes

Examples

Annual payment to farmers is adjusted based on the plantation of trees

Users who do not reduce their water consumption for agricultural activities to the allowable level will receive a written warning

Members who achieve the sustainability target will be celebrated by being lifted on shoulders during the annual parade

Local leaders who have all their group's documentation in order may be promoted to Regional Coordinators

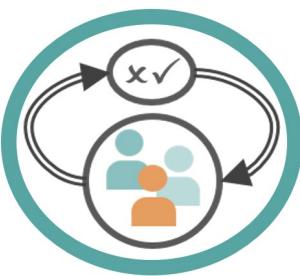
Farmers who trample on another farmer's crops must dedicate a week to repairing them, under the supervision of the affected party

The amount of the penalty for using forbidden infrastructure is based on the member's income

Farmers who have met their annual harvest goals for a period of 5 years will be given a tool kit.

Farmers who pollute the river will not receive blessings from the gods

If I allowed my animals to encroach upon my neighbors' cultivated plots, I'd feel guilty



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Cause	Consequence	Criteria	Type
PAY.act	PAY.rew	PAY.cri	PAY.typ.eco
PAY.out	PAY.war	—	—
PAY.out	PAY.rew	—	PAY.typ.phy
PAY.out	PAY.rew	—	PAY.typ.pos
PAY.act	PAY.san	—	PAY.typ.act
PAY.act	PAY.san	PAY.cri	PAY.typ.eco
PAY.out	PAY.rew	—	PAY.typ.mat
PAY.act	PAY.rew	—	PAY.typ.spi
PAY.act	PAY.san	—	PAY.typ.emoint



Scope rules (SCO)

Defines the boundaries and goals of the system and specifies the domain over which the rules apply

Categories

Definition

Domain

Goal

Definition

Specifies the definitions, designations, and descriptions of activities, infrastructure, resources, and symbols

Sets the spatial, temporal, social, and legal domain, as well as the resources and activities to which the rules apply

Defines the goals of the rules

Activity, legal, resource, social, spatial, temporal

Action, outcome

Sub-Categories



Scope rules (SCO)

Defines the boundaries and goals of the system and specifies the domain over which the rules apply

Examples

Communal natural resources include grazing land, forest, and water

Land reserved for expanding infrastructure needs to be kept clear of solar panels

Reducing the amount of organic waste going to landfills is the goal of all regulations.



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SCO.def

SCO.dom.spa

SCO.goa.out

References

Supporting sources:

- Arahuetes de la Iglesia, D., Tenza-Peral, A., Estévez-Moreno, L.X., Martín Suárez, A., Lacosta, F.J., Lare David, I., Pérez Ibarra, I. (2025) A comprehensive taxonomy of rules for nuanced analysis of governance systems. . Manuscript submitted for publication in *Policy Studies Journal*
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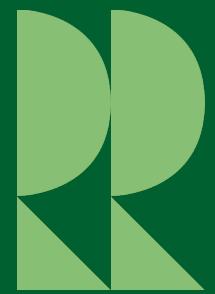
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