

Missions without hierarchy? The paradox of coordination in mission-oriented policies in fragmented states

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This article investigates why high levels of strategic directionality are not sufficient to ensure the effective implementation of mission-oriented innovation policies. Based on a conceptual and historical-institutional approach, grounded in evolutionary economics and the public governance literature, the study proposes a bidimensional framework that distinguishes strategic directionality and hierarchical coordination capacity as central analytical dimensions. Drawing on comparative qualitative evidence from Brazil, India, and South Africa, mobilized as analytical laboratories, the article identifies the regime of ‘missions without hierarchy,’ in which strategic ambition coexists with low intra-state coordination capacity, resulting in implementation fragmentation. The main contribution lies in repositioning coordination as an explanatory variable—rather than a presupposition—of mission-oriented policies, offering an analytical instrument to understand the gap between orientation and execution. The article also outlines implications for the institutional design of industrial policies in contexts of state fragmentation.

Keywords innovation, industrial policy, evolutionary economics, public governance

1. Introduction

The objective of this article is to explore why high levels of strategic directionality are not sufficient to ensure the effective implementation of mission-oriented innovation policies, highlighting the importance of institutional conditions—particularly intra-state coordination capacity—for converting directionality into coordinated action. This issue is especially relevant in the recent context of renewed interest in mission-oriented policies, mobilized globally as a response to complex challenges such as the climate transition, digitalization, and the structural reconfiguration of economies. In this movement, the State is conceived not merely as a corrector of market failures, but as an active agent in shaping technological and productive trajectories (Mazzucato 2018, Schot and Steinmueller 2018, Aiginger and Rodrik 2020). The notion of directionality, in this context, shifts the focus from ‘how much to innovate’ to ‘where to innovate,’ emphasizing the capacity of public policies to structure search spaces under conditions of uncertainty.

The problem motivating this article is that, in several contexts, mission-oriented policies combine high strategic ambition with persistent implementation difficulties, including fragmentation of instruments, overlap of decision-making arenas, and limited capacity for interorganizational alignment. This leads to the following question: if directionality is conceived as a central element to guide trajectories of innovation and transformation in industrial and innovation policy, why do contexts with high

directionality not systematically result in coordinated execution and effective transformation?

The central argument of the article is that directionality is not a sufficient condition for the effectiveness of mission-oriented policies. Although the literature recognizes three fundamental dimensions—directionality, coordination, and transformation (Kline and Rosenberg 1986, Metcalfe 1995, Schot and Steinmueller 2018)—it tends to treat coordination as an implicit functional requirement, rather than as a specific state capacity that is historically constructed and institutionally contingent (Bouckaert et al. 2010, Peters 2015). Directionality is understood as a policy-induced property, associated with the deliberate definition of priorities and desired trajectories, in line with approaches that emphasize its political nature (De Graaff et al. 2025), in contrast to perspectives that treat it as an emergent result of sociotechnical dynamics (Andersson et al. 2021, Yap and Truffer 2019). Coordination, in turn, is defined as the institutional capacity to align decisions, instruments, and expectations across multiple centers within the State, in order to mediate multiple political interests and governmental agendas required for missions and pathways.

In this article, this perspective is refined by treating directionality as an institutionally concentrated property—formulated by strategic cores of the State responsible for industrial and innovation policy design and its instruments—while its implementation is structurally distributed, depending on decisions and instruments dispersed across multiple governmental arenas. This

asymmetry helps explain why strategic orientations may be clear but fail to translate into coordinated execution.

Building on this framework, the article introduces the concept of missions without hierarchy, understood as a governance regime in which high strategic directionality coexists with limited intra-state coordination capacity. In such contexts, political authority is sufficient to define ambitious goals and orient expectations, but insufficient to realign incentives, integrate instruments, and sustain decisions over time. The result is a systematic dissociation between direction and execution: strategic orientation does not translate into coordinated action, and missions tend to fragment into partially disconnected initiatives or to be progressively reshaped by dynamics of bargaining, veto, and sectoral accommodation. This pattern is characteristic of fragmented states, marked by dispersed authority, overlapping mandates, and conflicts associated with the policy mix (March and Olsen 1989, Painter and Peters 2010, Peters 2015), in which the absence of effective arbitration mechanisms under uncertainty limits the capacity to sustain consistent trajectories of technological transformation.

Empirically, Brazil, India, and South Africa are mobilized not as mere examples, but as analytical laboratories and plausibility probes, in the sense of George and Bennett (2005), allowing the coordination paradox to be made observable under relevant empirical conditions. The selection of these cases follows a logic of structured comparison: they are large-scale economies with decentralized state organization, which have recently adopted and implemented mission-oriented policies that share high levels of strategic directionality but differ in their institutional configurations and intra-state coordination capacities. This combination allows for the analytical isolation of coordination as an explanatory variable, by exploring institutional variations that mediate the conversion of orientation into execution.

The contribution of the article is threefold. First, at the theoretical level, it demonstrates that directionality is not sufficient for transformation, by repositioning coordination as a constitutive—rather than derived—dimension of mission-oriented policies. Second, at the conceptual level, it introduces and operationalizes the concept of missions without hierarchy as a specific form of governance failure. Third, at the governance level, it identifies the institutional mechanisms—particularly those related to arbitration capacity, alignment, and decision-making continuity—that condition the conversion of strategic orientation into coordinated action. Finally, the article presents a clear policy implication: the effectiveness of mission-oriented policies is more closely associated with the institutional conditions that sustain their implementation, particularly coordination capacity in contexts of state fragmentation. By shifting the focus from formulation to governance, the article contributes to refining the debate on mission-oriented policies, emphasizing that the challenge lies not only in defining directions, but in building institutional capacities capable of sustaining them over time.

The article is structured as follows: Section 2 describes the methodology; Section 3 develops the analytical framework, articulating directionality, intra-state coordination, and institutional fragmentation; Section 4 applies this model in a comparative empirical analysis of Brazil, India, and South Africa; Section 5 consolidates the proposed concept based on these results; and, finally, Section 6 presents the concluding remarks.

2. Methodology

This article adopts a qualitative, comparative, and theoretically oriented methodological strategy, structured in three interrelated analytical steps. The first consists of constructing the theoretical framework; the second, of empirically operationalizing its central dimensions through a comparative case study; and the third, of reorganizing the findings within a bidimensional space of governance regimes. The logic of the research design is neither that of strong causal testing nor of large-N statistical comparison, but rather of empirically grounded theoretical construction, as in historical-institutional and evolutionary approaches in which concepts are refined through the interaction between theory and situated evidence (Nelson and Winter 1982, Thelen 2004, George and Bennett 2005). This choice follows from the very nature of the problem under investigation: the gap between strategic directionality and implementation is not directly observable through simple indicators, as it involves processes of arbitration, coordination, and institutional conflict unfolding across multiple decision-making arenas.

It is important to emphasize that, although treated as analytical dimensions, these variables are not institutionally symmetrical, since directionality tends to be more concentrated, whereas coordination depends on distributed capacities. Thus, the methodological starting point lies at the theoretical level. Section 3 does not function merely as a literature review, but as a stage of conceptual construction. In it, the article critically reconstructs the literature on mission-oriented policies in order to shift intra-state coordination from the status of an implicit functional assumption to that of a central explanatory variable. This reconstruction mobilizes, in an articulated manner, evolutionary economics—particularly the notion of variation, selection, and retention (Dosi 1982, Nelson and Winter 1982); the mission-oriented literature, which emphasizes directionality and transformation (Mazzucato 2016, Schot and Steinmueller 2018; Wanzenböck et al. 2020); and the literature on coordination and fragmentation within the State, which shows that decision-making coherence does not emerge automatically from clear goals, but requires specific organizational capacities and institutional arrangements (Metcalfe 1995, Peters 1998, Bouckaert et al. 2010; Kattel; Mazzucato 2018). The resulting framework is deliberately relational: directionality defines the space of variation; intra-state coordination operates as a mechanism of selection and retention; and institutional fragmentation conditions the costs and limits of this operation. Consequently, the article does not treat implementation as a residual stage, but as the arena in which the State's capacity to sustain priorities under conflict becomes empirically decisive.

The empirical stage of the article adopts a comparative case study with a heuristic and analytical plausibility function, rather than statistical inference. The three selected cases—Brazil, India, and South Africa—were chosen because they combine, to varying degrees, high strategic directionality with strong plausibility of state fragmentation and the need for cross-sectoral coordination. In all cases, there are explicitly formalized missions or plans, with visible goals, instruments, and implementation arrangements; at the same time, there is evidence of distributed authority, interministerial interdependence, conflicts across levels of government, and tensions among industrial, fiscal, energy, climate, and social

objectives. The selection criterion is therefore not statistical representativeness, but analytical adequacy to the research problem: observing how mission-oriented policies operate precisely in contexts where their effectiveness depends on coordination that is difficult to operationalize. In this sense, the cases function as plausibility probes, in the sense of [George and Bennett \(2005\)](#): they do not ‘prove’ the argument in a nomothetic sense, but allow the interpretive robustness of the framework to be examined in light of comparable empirical evidence.

The sources mobilized in the empirical stage are predominantly documentary and secondary, combining official policy documents, institutional reports, and specialized literature. In the Brazilian case, data collection focused on the Action Plan of Nova Indústria Brasil, the resolutions of the National Council for Industrial Development (CNDI), the Plano Mais Produção, and related documents connected to the Plano Clima Brasil (2024c); in the Indian case, on the official text of the National Green Hydrogen Mission and its implementation documents [Government of India \(2023\)](#); and, in the South African case, on the Just Energy Transition Implementation Plan and associated regulations [Republic of South Africa \(2023\)](#). These documents were selected because they make observable, in a comparable manner, the elements relevant to the argument: objectives of mission-oriented industrial and innovation policy, explicit targets, technological pathways, productive routes, institutional design, mobilized instruments, and formal coordination mechanisms. In addition, secondary literature was used to contextualize the institutional meaning of these arrangements and to avoid a purely descriptive reading of the documents, especially regarding institutional governance and technological transition ([Rodrik 2008](#), [Schneider 2015](#), [Meckling and Nahm 2019](#), [Heffron and McCauley 2018](#)).

The treatment of evidence was conducted through a standardized analytical matrix, constructed from the three dimensions of the framework. The first matrix, summarized in [Table 1](#), identifies the directionality revealed in the analysed policies: declared mission or strategic objective, structuring axes, technological trajectories, productive pathways, explicit targets, supply- and demand-side instruments, and implementation arrangements. The second, presented in [Table 2](#), maps intra-state coordination: institutional architecture, formal coordination mechanisms, integration of instruments, evidence of effective articulation, processing of intra-state conflicts, relation to fiscal and macroeconomic constraints, vertical coordination, and intertemporal stability of policy decisions. The third, systematized in [Table 3](#), captures institutional fragmentation: horizontal dispersion of authority, conflicts among governmental agendas, federative or multilevel fragmentation, policy overlap, institutional vetoes, competing coalitions, distributive pressures, and instability over time. Rather than treating documents as a neutral repository of information, the article reads them as institutional evidence of patterns in the organization of state action. This allows abstract categories to be translated into observable and comparable features across the selected cases.

Based on this empirical material, the article advances to a bidimensional analysis. The proposed bidimensional space is not merely an expository device, but the result of an analytical abstraction grounded in the preceding findings. Its two axes—strategic directionality and hierarchical coordination capacity—condense the dimensions identified by the framework as decisive

for distinguishing governance regimes of missions. Directionality occupies the vertical axis because it expresses the extent to which the State makes explicit ‘where to go’; hierarchical coordination capacity occupies the horizontal axis because it expresses the extent to which the State is able to align dispersed decisions, arbitrate competing trajectories, and sustain priorities over time. The notion of hierarchical coordination here is not synonymous with authoritarian command, but with the capacity to produce decision-making coherence in organizationally fragmented environments, in line with [Peters \(2015\)](#), [Fukuyama \(2013\)](#), and [Kattel and Mazzucato \(2018\)](#). The intersection of these axes generates four governance regimes: integrated missions, technocratic coordination, diffuse fragmentation, and missions without hierarchy.

Within this arrangement, the empirical cases discussed in the article play a decisive role: they anchor the quadrant of high directionality and low hierarchical coordination capacity, that is, the regime of missions without hierarchy. Brazil, India, and South Africa are not mobilized as impressionistic examples, but because the documentary frameworks constructed in the preceding sections show precisely this combination: clear strategic direction, formalized missions, explicit targets and instruments, but embedded in structures of dispersed authority, ministerial interdependence, distributive conflicts, and weak mechanisms of arbitration and continuity. The remaining quadrants serve a function of theoretical contrast and are supported by consolidated historical and comparative references—for example, Japan and South Korea for integrated missions ([Johnson 1982](#), [Wade 1990](#), [Amsden 2001](#)), Germany and Nordic countries for technocratic coordination ([Hall and Soskice 2001](#), [Edler and Fagerberg 2017](#)), and Latin American contexts of high instability for diffuse fragmentation ([Rodrik 2008](#), [Ocampo 2011](#)). The analytical gain of the bidimensional approach is thus to make explicit that the central problem is not the absence of direction, but the incompatibility between ambition and the institutional capacity to define execution.

As with any qualitative and theoretically oriented design, this procedure has limitations that must be explicitly acknowledged. First, case selection does not allow for statistical generalization. The inference here is analytical: it seeks to identify plausible mechanisms and recurring patterns, rather than estimate average effects. Second, reliance on documentary evidence may undercapture informal dimensions of coordination, such as intra-executive bargaining, the relational power of specific bureaucracies, or non-formalized political agreements. Third, the coding of dimensions itself involves interpretive judgement, particularly in categories such as ‘effective coordination’ or ‘high fragmentation.’ Nonetheless, these limitations do not invalidate the design; on the contrary, they reinforce the need to make its criteria and scope explicit. The analytical value of the method lies precisely in making observable a phenomenon that the literature typically acknowledges but rarely operationalizes systematically: the fact that missions may have clear ambitions (directionality) without the State possessing the capacities to sustain them (coordination).

Specifically regarding the use of predominantly documentary sources, it is acknowledged that this type of evidence does not allow for the direct observation of internal decision-making processes, intra-state conflicts, or informal coordination mechanisms. In response to this limitation, the analysis does not rely on a purely descriptive reading of official documents but adopts an

Table 1 Directionality revealed in mission-oriented policies in comparative perspective—Brazil, India, and South Africa.

Dimension	Brazil—New Industry Brazil (Nova Indústria Brasil—NIB)	India—National Green Hydrogen Mission (NGHM)	South Africa—Just Energy Transition Implementation Plan (JET-IP)
Policy/Mission	New Industry Brazil (NIB)	National Green Hydrogen Mission	Just Energy Transition Implementation Plan
Stated strategic objective	Reindustrialization with structural transformation, decarbonization and increased productive complexity by 2033	Position India as a global leader in green hydrogen (≥ 5 MMT/year by 2030)	Decarbonize the economy with inclusive growth, energy security and job creation
Mission structure/pillars	Six missions: (1) sustainable agroindustry; (2) health industrial complex; (3) infrastructure and cities; (4) digital transformation; (5) bioeconomy and energy transition; (6) sovereignty and defence	Single mission structured in three pillars: production, demand and enabling ecosystem	Six portfolios: electricity; Mpumalanga transition; electric vehicles; green hydrogen; skills; municipalities
Technological trajectories	Green hydrogen; SAF; advanced biofuels; industrial digitalization; health technologies; defence technologies	Green hydrogen; electrolyzers; applications in steel, fertilizers, refining, transport and exports	Renewable energy; green hydrogen; electric mobility; industrial and energy restructuring
Technological and productive pathways	Energy transition (biofuels + electrification); industrial digitalization; restructuring of value chains; health innovation	GH2 production → electrolyzer manufacturing → infrastructure → industrial use → exports	Energy transition → development of green industries → regional transition (Mpumalanga)
Structure of directionality	Formalized through Action Plan, CNDI resolutions, targets (2026/2033), and integrated instruments (Plano Mais Produção)	Formal mission document with quantitative targets and structured programs	JET-IP structured in portfolios, timelines and responsible institutions
Explicit targets	Quantitative targets by mission (e.g. industrial participation, innovation, decarbonization)	≥ 5 MMT/year GH2 production by 2030 and export expansion	Integrated climate, energy and socio-economic targets
Supply-side instruments	Directed credit (BNDES); innovation funding (FINEP); tax incentives; infrastructure support	Production incentives; manufacturing support; R&D funding; infrastructure investment	Concessional finance; public investment; capacity building
Demand-side instruments	RenovaBio (CBIOS); public procurement; mandates; regulation; trade policy	Industrial demand creation; pilot projects; fossil substitution	Energy regulation; climate targets; creation of markets for green technologies
Governance (implementing actors)	MDIC, Ministry of Finance, MCTI, BNDES, FINEP, CNDI	MNRE + sectoral ministries (energy, industry, fertilizers)	Central government, agencies and coordination with international partners
Degree of directionality	Very high: missions, targets and instruments explicitly articulated	Very high: clear targets and defined technological pathways	High: clear direction, but distributed across multiple portfolios

Source: Brasil (2017), Brasil (2024a), Brasil (2024b), Brasil (2024c), Government of India (2023), Republic of South Africa (2023). Notes: New Industry Brazil (NIB); National Council for Industrial Development (CNDI); Ministry of Development, Industry, Trade and Services (MDIC); Ministry of Science, Technology and Innovation (MCTI); Brazilian Development Bank (BNDES); Funding Authority for Studies and Projects (FINEP); Energy Research Office (EPE); Decarbonization Credits (CBIOS); Ministry of New and Renewable Energy (MNRE); Green Hydrogen (GH2); Just Energy Transition Implementation Plan (JET-IP).

analytical and comparative reading strategy aimed at identifying inconsistencies, institutional overlaps, implementation gaps, and changes over time that signal coordination difficulties. In this sense, documents are mobilized as indirect evidence of institutional dynamics, allowing the inference of patterns of fragmentation and disarticulation beyond the formal intentions they express. Nonetheless, it is recognized that this strategy does not substitute for approaches based on primary sources—such as interviews with key actors or more process-tracing-oriented analyses—whose incorporation could deepen the understanding of the mechanisms identified here and constitutes an important avenue for future research.

3. Evolutionary framework of directionality and coordination: An interpretation

The main analytical contribution of this section lies in treating coordination not as an implicit functional assumption, but as the central explanatory variable in the implementation process of mission-oriented industrial and innovation policies. Breaking with the idea that coordination emerges automatically from clear goals or from the hierarchical authority of the policy maker, the framework conceives it as a specific intra-state capacity, whose variation

Table 2 Institutional patterns of intra-state coordination in mission-oriented policies: Evidence from Brazil, India, and South Africa.

Dimension	Brazil—New Industry Brazil (Nova Indústria Brasil—NIB)	India—Green Hydrogen Mission	South Africa – JET-IP
Institutional architecture (who coordinates)	CNDI (central body); MDIC (political coordination); Presidency (Casa Civil); Ministry of Finance; MCTI; public banks (BNDES, FINEP)	Ministry of New and Renewable Energy (MNRE) as lead agency; coordination with industry, energy and fertilizer ministries	Presidency and central departments; interministerial coordination; engagement with international financial institutions
Formal coordination mechanisms	CNDI council; mission-based resolutions; interministerial working groups; <i>Plano Mais Produção</i> as a financial integration instrument	Mission structured around pillars (production, demand, enabling ecosystem); integrated national programs	JET-IP governance structure; explicit need for regulatory coordination ('one voice'); designated lead agencies per portfolio
Policy instrument integration	Attempted alignment across credit (BNDES), innovation (FINEP), industrial policy and ecological transition	Integration of production incentives, demand creation and infrastructure development	Integration of energy, industry, skills and climate finance instruments
Evidence of effective coordination	CNDI reports indicate interagency articulation and monitoring; <i>Plano Mais Produção</i> integrates multiple funding sources	Mission explicitly designed as a 'whole-of-government' approach	Policy documents acknowledge coordination needs and assign institutional responsibilities
Intra-state conflict processing	Tensions between industrial policy, fiscal constraints and climate agenda; need for political arbitration	Potential disputes across sectors (energy, industry, fertilizers) regarding hydrogen allocation	Conflicts between energy security, employment and climate targets
Relation to fiscal and macroeconomic constraints	Strong dependence on Ministry of Finance; fiscal rules condition implementation capacity	Requirement of economic viability and global competitiveness	Dependence on external financing and domestic fiscal constraints
Vertical coordination (multi-level governance)	Interaction with subnational governments (tax incentives, regional energy and industrial policies)	States play a role in implementation and infrastructure provision	Multi-level governance involving national, regional and local actors
Intertemporal stability of decisions	Still under consolidation; dependent on political coalition and policy continuity	Recently implemented; stability yet to be tested	High risk of instability due to social and political pressures
Observed limits of coordination	Dependence on sustained political alignment; potential policy overlap	High coordination complexity; uneven administrative capacity	Coordination recognized as a central challenge; alignment remains unresolved

Source: Brasil (2017), Brasil (2024a), Brasil (2024b), Brasil (2024c), Government of India (2023), Republic of South Africa (2023). Notes: New Industry Brazil (NIB); National Council for Industrial Development (CNDI); Ministry of Development, Industry, Trade and Services (MDIC); Ministry of Science, Technology and Innovation (MCTI); Brazilian Development Bank (BNDES); Funding Authority for Studies and Projects (FINEP); Energy Research Office (EPE); Decarbonization Credits (CBIOS); Ministry of New and Renewable Energy (MNRE); Green Hydrogen (GH2); Just Energy Transition Implementation Plan (JET-IP).

explains the recurring gap between strategic ambition and effective execution (Kattel and Mazzucato 2018, Schot and Steinmueller 2018, Wanzenböck et al. 2020).

This problem stems from the very shift promoted by mission-oriented policies, which move from 'how much to innovate' to 'where to innovate,' requiring from the State not only resource allocation, but the orchestration of technological trajectories under conditions of uncertainty and conflict. The framework structures this dynamic through the interaction of three interdependent axes: directionality, which organizes the space of variation¹ by defining priorities; intra-state coordination, which operates as a mechanism of institutional selection and retention; and fragmentation, which configures the environment in which decisions are

contested, authority is dispersed, and interests are internalized within the State (Dosi 1982, Nelson and Winter 1982, Metcalfe 1995, Peters 1998, Bouckaert et al. 2010). The outcome of this interaction is not deterministic: depending on coordination capacity, directionality may either sustain trajectories of transformation or dissipate into disarticulated patterns of implementation.

The relationship between directionality and coordination requires further qualification, especially in contexts of fragmented states. It is correct to state that the construction of directionality is not entirely exogenous and involves organizational and political capacities. However, such capacities tend to be more institutionally concentrated—for example, within ministries or strategic cores responsible for policy formulation—and are primarily related to the definition of priorities, targets, and narratives. In contrast, intra-state coordination has a distinct nature: its effective realization depends on the ability to align decisions, instruments, and agendas distributed across multiple agencies, levels of government, and political arenas.

¹ In evolutionary terms, the space of variation refers to the set of technological and organizational possibilities available for exploration by agents, structured by paradigms, institutions, and policies. In this sense, directionality can be understood as the capacity to orient and constrain this space, influencing search trajectories and selection processes (Dosi 1982, Nelson and Winter 1982).

Table 3 Institutional fragmentation in mission-oriented policies: Comparative evidence.

Dimension	Brazil – New Industry Brazil (Nova Indústria Brasil—NIB)	India—Green Hydrogen Mission	South Africa—JET-IP
Horizontal dispersion of authority	Industrial policy (MDIC) depends on fiscal (Ministry of Finance), energy (MME) and environmental (MMA) decisions, with distributed and non-hierarchical competencies	MNRE leads the mission but depends on sectoral ministries (fertilizers, petroleum, steel) for implementation	Departments of Energy, Industry and Planning operate with distinct mandates and without a unified command
Conflicts across government agendas	Tensions between industrial expansion (NIB), fiscal rules and climate commitments; conflict between decarbonization and fossil-based energy policy	Hydrogen competes with coal and energy security priorities; industrial sectors compete for subsidies and resource allocation	Decarbonization (coal phase-out) conflicts with employment and energy security objectives
Multi-level/federal fragmentation	Subnational governments use tax incentives (ICMS) and pursue autonomous industrial and energy policies, potentially diverging from national priorities	Indian states play a key role in infrastructure and implementation, generating territorial heterogeneity	Implementation depends on local governments (e.g. Mpumalanga), with uneven regional impacts
Policy and instrument overlap	NIB coexists with climate policy, energy policy, fiscal rules and sectoral programs without a clear hierarchy	Hydrogen mission overlaps with existing industrial, energy and export policies	JET-IP integrates multiple portfolios (energy, industry, skills), with risks of duplication and misalignment
Institutional veto points and blockages	Implementation depends on budget approval and interministerial alignment; fiscal constraints may limit industrial instruments	Interministerial alignment requirements may delay regulatory and incentive decisions	Energy and industrial reforms face political and institutional resistance
Political coalitions and competing interests	Coalition presidentialism implies continuous negotiation; industrial and energy interests compete for resources	Regional and sectoral interests (steel, fertilizers, energy) compete within the mission	Labor unions and social actors influence the pace and direction of the transition
Distributive pressures (sectoral and regional)	Competition for subsidized credit, incentives and policy prioritization across sectors	Industrial sectors compete for access to green hydrogen and associated incentives	Coal-dependent regions demand compensation and social protection
Intertemporal policy instability	Dependent on political and fiscal continuity; risk of policy reorientation over time	Recently implemented; stability depends on coordination across levels and sectors	Implementation contingent on external financing and domestic political stability
Synthetic evidence of fragmentation	High fragmentation: multiple decision centers combined with fiscal-industrial-environmental conflicts	Moderate-to-high fragmentation: strong interministerial and territorial interdependence	High fragmentation: explicit distributive conflicts and multi-level governance complexity

Source: Brasil (2017), Brasil (2024a), Brasil (2024b), Brasil (2024c), Government of India (2023), Republic of South Africa (2023). Notes: New Industry Brazil (NIB); National Council for Industrial Development (CNDI); Ministry of Development, Industry, Trade and Services (MDIC); Ministry of Science, Technology and Innovation (MCTI); Brazilian Development Bank (BNDES); Funding Authority for Studies and Projects (FINEP); Energy Research Office (EPE); Decarbonization Credits (CBIOS); Ministry of New and Renewable Energy (MNRE); Green Hydrogen (GH2); Just Energy Transition Implementation Plan (JET-IP).

Recurring evidence in industrial and innovation policies shows that ministries responsible for formulation—such as those in charge of industrial, energy, or technological policy—are able to define relatively clear strategic directions, but do not control critical variables for their implementation, such as fiscal policy, budgeting, credit instruments, or sectoral regulation, which are often allocated in other spheres of the State. In contexts of fragmentation, this implies that directionality may be relatively well defined and institutionally localized, while its implementation requires capacities that go beyond the formulating body, involving fiscal constraints, interministerial conflicts, and arbitration problems that are not under its direct control.

Thus, although directionality and coordination are conceptually related, they operate under distinct institutional conditions, which makes it possible to empirically observe situations in which

there is clear strategic orientation, but an absence of capacity to sustain it in implementation.

3.1 Directionality as a cognitive Axis and space of variation

From the analytical lens of evolutionary economics, directionality departs from the conception of mere central planning to operate as the vector that structures the sociotechnical space of variation. In contrast to the neoclassical premise—in which innovation emerges in a neutral manner, coordinated almost exclusively by price signals—directionality breaks with the tradition of the State's horizontal neutrality (Schot and Steinmueller 2018). In the face of radical uncertainty and the path-dependent trajectories that characterize technical progress (Dosi 1982, Nelson and Winter 1982),

directionality acts by mitigating systemic ambiguity. It does not determine the final outcome in a mechanistic way, but anchors the expectations of public and private actors, circumscribing the set of technological pathways that the State considers legitimate and worthy of support in light of the societal challenge.

It is important to emphasize that, in this article, directionality should not be interpreted as synonymous with generic support for innovation. The very etymology of the term—direction, derived from the Latin *directio*—refers to the idea of orienting, guiding, and establishing a sense of movement. In this context, directionality refers to the State's capacity to confer intentional orientation to the process of technological development, defining not only the intensity but, above all, the direction of transformation trajectories. This implies acting selectively through instruments that direct investments, structure fiscal incentives, regulate strategic sectors, and condition the allocation of public and private resources (Mazzucato 2016; Wanzenböck *et al.*, 2020). In doing so, MOIP does not merely stimulate innovation in aggregate terms, but seeks to reconfigure the productive structure, overcome technological bottlenecks, strengthen national capabilities, and increase the technological content of aggregate output. Directionality, therefore, is not a passive attribute of public policy, but an active mechanism of structural orientation, through which the State seeks to influence the trajectory of development under conditions of uncertainty (Dosi 1982, Nelson and Winter 1982).

Empirically, this orienting effort does not manifest as a single command, but materializes through an articulated arrangement of public governance artefacts. Directionality revealed by a mission is the explicit translation, in concrete policy instruments, of the technological and productive priorities that the State decides to promote, by defining which trajectories should be pursued, financed, and institutionally sustained over time. Thus, directionality gains concreteness through the formulation of missions expressed in official documents, long-term strategic plans, evaluable intermediate targets, priority programs, and the design of portfolios of inducement instruments—such as public procurement of innovation, conditional subsidies, and specific regulatory frameworks (Mazzucato 2016; Wanzenböck *et al.*, 2019; Feser 2022). These instruments not only communicate priorities, but also delimit, in operational terms, which technological and organizational trajectories will be encouraged, which will receive institutional support, and which will tend to be marginalized. In mission-oriented innovation policies, such elements operate as institutional devices that translate macro-political choices—previously diffuse—into explicit programmatic commitments, enabling the State to exercise active orchestration in processes of structural and industrial transformation (Priebe and Herberg 2024).

However, as an evolutionary construct operating in democratic environments, directionality constitutes an inherently contested process. The definition of 'where to go' does not emerge as a technical consensus, but as the result of disputes that confront competing technological trajectories, intensify distributive tensions, and cut across multiple decision-making arenas within the State (Hirschmann *et al.* 2025). In this context, the very definition of targets, the choice of instruments, and the allocation of resources become objects of dispute among actors seeking to influence policy orientation according to their interests, turning directionality into a continuous process of negotiation and political rebalancing. For this reason, directionality cannot

be empirically or analytically sustained as a static decree that defines the mission to be pursued. It must be understood as a provisional stabilization of expectations, continuously shaped by market pressures, lobbying strategies, and new technological learning. Even when institutionalized in formal documents and policy instruments, its implementation remains open to reinterpretation, contestation, and revision over time.

Analytically, this implies that directionality establishes the normative criteria and the boundaries of the space of variation, but does not guarantee its realization in the political and governmental arena. The conversion of this orientation into consistent public action tends to require additional processes of institutional selection and retention, which shifts the problem from the definition of direction to the State's capacity to sustain that direction over time. It is precisely this gap—between strategic orientation and implementation—that makes intra-state coordination a central variable in the analytical framework developed in this article.

3.2 Coordination as a mechanism of intra-state selection

The premise that directionality organizes the space of variation but does not possess self-executing capacity exposes the main bottleneck of mission-oriented policies: the transition to implementation. Once strategic orientation is established, the analytical problem shifts to the conditions under which this direction is effectively sustained within the public apparatus. The central issue is no longer 'what to prioritize,' but how this orientation survives institutional frictions, being converted into allocative decisions, coherent portfolios of instruments, and credible intertemporal commitments. The challenge, therefore, is to explain how such orientation is effectively translated into tangible allocative decisions, coherent portfolios of instruments, and real and credible intertemporal commitments.

For the purposes of this framework, coordination is defined as the intra-state capacity to sustain decision-making coherence in innovation policy under conditions of severe organizational and governmental heterogeneity. This definition requires an analytical repositioning: coordination ceases to be understood as a vague functional integration of the sociotechnical system and instead emerges as a genuine political capacity for arbitration within a structurally tensioned state apparatus. More specifically, the concept refers to the intricate process through which the State actively—and not automatically—aligns allocative decisions, inducement instruments, and competing priorities across multiple public arrangements and levels of government (Kuhlmann 1998).

This alignment effort does not end at the strict boundaries of innovation; it encounters a macro-political challenge of scale: intersectoral friction. The State must continuously arbitrate the directionality of missions in relation to equally weighty governmental directives, reconciling industrial policy with fiscal austerity imperatives and the urgencies of social policy. Moreover, the success of the intended transformation requires a rigorous complementarity of policies, understood as the coherence and consistency among different instruments and domains of public intervention, whose effectiveness depends on their systemic articulation rather than their isolated operation (Howlett and Rayner 2007, Howlett and Mukherjee 2018).

From this perspective, domains traditionally managed in isolation—such as education, labor, and infrastructure policies—do not operate as mere appendices, but as transversal enabling policies, whose function is to sustain the coherence of public action in contexts of high sectoral interdependence (Peters 1998, Pollitt 2003, Bouckaert et al. 2010).

These policies not only complement the main mission-oriented intervention but also structure the conditions of possibility for transformation itself, by shaping productive, institutional, and technological capacities. They are the ones that build absorptive capacities and human capital that sustain the process of change, configuring the indispensable ground for the sociotechnical transformation envisioned by the mission to materialize in the real economy. Therefore, the conduct of missions critically depends on how complementary policies are effectively operationalized, since these policies structure the material and institutional conditions for enabling the intended transformation. This implies that mission implementation does not occur in an institutional vacuum, but within a complex arrangement of policies and decision-making arenas, often permeated by conflicts among different policy makers, with distinct priorities, time horizons, and instruments. Furthermore, the conduct of missions is subject to broader constraints and conditions—such as budgetary rules, fiscal and monetary policy, as well as the dynamics of negotiation within the legislature—which may limit, reconfigure, or even block the execution of defined strategies. In these terms, the effectiveness of mission-oriented policies depends not only on the definition of strategic directions, but on the capacity to coordinate and arbitrate, under conditions of conflict and constraint, the broader set of policies that condition their implementation.

In this framework, market interests, technological disputes, and sectoral pressures do not constitute the direct object of coordination. However, it is acknowledged that such elements permeate the State and are internalized by different organizations within the governmental structure, which then operate as institutional carriers of heterogeneous interests. Thus, coordination does not refer to harmonization between State and market, but to the State's capacity to internally process these pressures, translating them—or not—into consistent decisions. It is precisely in this potential mismatch between the delimitation of admissible trajectories and their effective translation into state decisions that coordination acquires explanatory centrality in the model. If directionality structures the field of possibilities by defining priorities and orienting expectations, intra-state coordination operates on this field under conditions of conflict, determining which trajectories defined by directionality are effectively selected, prioritized, and sustained over time. In other words, organizing the space of directional variation does not imply its realization: it is in the capacity to operate on this space—converting orientation into consistent decisions—that the effectiveness of industrial policy is defined. In this sense, the gap between direction and implementation is not residual, but constitutive, and it is within this gap that the recurrent failures of execution in mission-oriented policies are explained, even when strategic orientation is clear and well defined.

This capacity becomes observable precisely in the concrete patterns of state decision-making that emerge throughout the implementation process. Intra-state coordination manifests itself in the way policy instruments are made compatible—or come into conflict—in the intertemporal consistency of governmental

programs, in the capacity to resolve disputes among agencies with distinct mandates, and in the stability of decisions in the face of political changes or sectoral pressures. Empirically, this translates into the degree of alignment among ministries, the complementarity—or overlap—of instruments, the persistence of policies across political cycles, and the capacity to avoid cross-vetoes that undermine implementation. From this perspective, coordination is not a normative attribute, but an observable variable expressed in distinct patterns of state action. In contexts of low coordination, fragmentation of instruments, policy discontinuity, and the inability to sustain long-term commitments and targets prevail. In contexts of higher coordination, there is greater alignment among instruments, decision-making continuity, and the capacity to sustain technological trajectories over time.

Within this framework, coordination is not reduced to the elimination of conflicts nor to the hierarchical imposition of decisions, but consists in the capacity to process distributive tensions through mechanisms of arbitration, negotiation, and commitment-building under conditions of dispersed authority (Metcalfe 1995, Edler et al. 2016). It is, therefore, a contingent capacity, whose effectiveness varies along a spectrum ranging from situations in which directionality remains at the discursive level to contexts in which the State sustains decision-making coherence and intertemporal continuity even under competing pressures. In this perspective, coordination operates as the mechanism that connects orientation and implementation, translating directionality into action by selecting trajectories, aligning instruments, and sustaining decisions over time. It is precisely the variation of this capacity—and the limits imposed by the institutional conditions under which it is exercised—that explain why sufficiently clear and strategically defined missions may result either in effective transformation trajectories or, alternatively, in disaggregated processes of execution.

3.3 Institutional fragmentation and the coordination paradox

For analytical purposes, fragmented states are understood as institutional arrangements in which decision-making power is distributed across multiple organizations, levels of government, and political arenas, without a center fully capable of arbitrating, in a stable and comprehensive manner, conflicts among competing priorities. Such fragmentation may result from federalism, coalition presidentialism, agencification, administrative decentralization, multilevel governance, or simply the proliferation of overlapping mandates across ministries and agencies (Peters 1998, Pollitt 2003, Bouckaert et al. 2010, Painter and Peters 2010). In contrast, concentrated states constitute a model in which the executive authority has greater capacity to centralize priorities, arbitrate interorganizational disputes, and align instruments under a common grammar of action. This contrast should not be read in normative terms, as if concentration were intrinsically superior and fragmentation intrinsically dysfunctional. Fragmented arrangements may foster pluralism, experimentation, and the democratic accommodation of interests, whereas more concentrated arrangements may produce rigidity, insulation, or low responsiveness. The analytical point is different: mission-oriented policies impose particularly high demands for intersectoral coherence and intertemporal

continuity, such that fragmentation tends to increase the costs of converting strategic direction into consistent implementation (Peters 2015).

Empirically, fragmentation in the structure of the State manifests in observable ways. It appears, for example, in the coexistence of ministries and agencies with partially overlapping mandates, in conflicts across levels of government, in divergences among sectoral priorities, and in cross-vetoes among bureaucracies that respond to distinct political coalitions. In federal systems, fragmentation is also expressed when subnational governments hold partially autonomous competencies, instruments, and incentives, and may converge with, reinterpret, or block national priorities (Painter and Peters 2010, Peters 2015). In emerging economies, these problems tend to be more intense because institutional fragmentation is often combined with more unstable political cycles, lower administrative continuity, greater fiscal volatility, and uneven capacity across agencies and territories. In such contexts, industrial and technological policies may be strained by heterogeneous governmental coalitions, interministerial distributive conflicts, and competing subnational priorities, which increases the risk of instrument overlap, program discontinuity, and segmented implementation (Rodrik 2008, Schneider 2015). Thus, fragmentation is not merely an institutional backdrop: it directly affects the State's capacity to sustain strategic directions under conditions of conflict.

While directionality operates as a mechanism of orientation that defines priorities, anchors expectations, and delimits technological trajectories through concrete policy instruments (Mazzucato 2016; Wanzenböck et al. 2020; Feser 2022, Priebe and Herberg 2024), intra-state coordination expresses the State's capacity to sustain decision-making coherence in the implementation of these priorities. Conceived as a process of internal arbitration under conflict, coordination operates through negotiation, the alignment of instruments, and the construction of commitments among public organizations, and is empirically observable in the degree of alignment, complementarity, and stability of decisions (Metcalfe 1995). Within the framework, it plays the role of a mechanism of institutional selection and retention, operating over the space of variation defined by directionality and determining which trajectories are effectively sustained over time.

It is from the interaction between these two variables, under conditions of fragmentation, that the core of the framework emerges. Directionality is central to mission-oriented policies because it defines the direction of transformation; however, the stronger the directional ambition, the greater the need for cross-sectoral coordination to reconcile instruments, priorities, and implementation timelines. It is precisely at this point that fragmentation may take the form of a paradox: the very policy that requires clear orientation and convergent action is implemented within state structures in which authority, resources, and incentives are dispersed. Rather than functioning as a mere external barrier, fragmentation becomes an active source of conflict, as it increases the likelihood of coexistence among competing priorities, heterogeneous political coalitions, interministerial disputes, and tensions between national and subnational scales. In federal or multilevel systems, this includes conflicts between national directives and subnational incentives, as well as territorial competition for resources, investments, and favourable regulations. The paradox, therefore, does

not stem from an abstract opposition between directionality and fragmentation, but from the fact that the centrality of directionality in mission-oriented policies increases dependence on coordination mechanisms that the very fragmented structure of the State makes more difficult to sustain.

From this perspective, intra-state coordination should not be treated as a guaranteed solution. Its role in the framework is mediating, not redemptive. It operates as a contingent capacity, whose effectiveness is conditioned by specific institutional arrangements, political conditions, and organizational resources. In fragmented states, its function is to process conflicts, reconcile competing policies, and reduce the likelihood that directionality remains confined to the discursive level. When this capacity is low, the strategic clarity of missions does not translate into coherence in execution, manifesting in overlapping programs across ministries, frequent changes in incentives and regulations, interruptions of initiatives across political cycles, and inconsistent decisions across levels of government. When it is relatively more robust, coordination may sustain policy complementarity, intertemporal continuity, and coherence across decision-making arenas, allowing directionality to translate into an effective trajectory of transformation. The point of the framework, therefore, is not to claim that fragmentation is 'bad' or that coordination automatically resolves its effects, but to demonstrate that, in mission-oriented policies, fragmentation alters the cost and difficulty of sustaining strategic direction, making intra-state coordination the decisive variable in explaining why similar missions may generate such different outcomes in distinct state contexts in the contemporary economy.

It is in this context that the central paradox of this article emerges: mission-oriented policies require directional choices and concentration of efforts, yet are increasingly implemented in states whose institutional architecture limits the capacity to align, arbitrate, and sustain these choices over time. Strategic direction, in itself, does not guarantee execution. In mission-oriented policies, strategic directionality operates as a mechanism for reducing normative uncertainty: it defines priorities, signals expectations, and guides the allocation of resources under conditions of uncertainty (Dosi 1982, Mazzucato 2016). However, when this directionality is introduced into institutionally fragmented states, it tends to collide with decision-making structures characterized by dispersed authority, multiple veto points, and weak central arbitration capacity (Peters 2015).

When intra-state coordination capacity is insufficient, directionality remains at the declaratory level, unable to stabilize trajectories and sustain cumulative learning processes. This mismatch can be summarized in the scheme presented in Fig. 1, which makes explicit the core of the intra-state coordination paradox in fragmented states:

Figure 1 should be interpreted as an analytical sequence—and not as a simple causal chain—in which each block represents a distinct level of the policy process. The element 'high strategic directionality' does not precede the definition of missions as an external cause, but indicates that strategic orientation has already been constructed and politically stabilized, becoming observable in the following block, 'definition of ambitious missions,' which corresponds precisely to its concrete materialization in targets, programs, and instruments.

The transition to 'need for coordination for execution' makes explicit that this directionality, once institutionalized in missions,

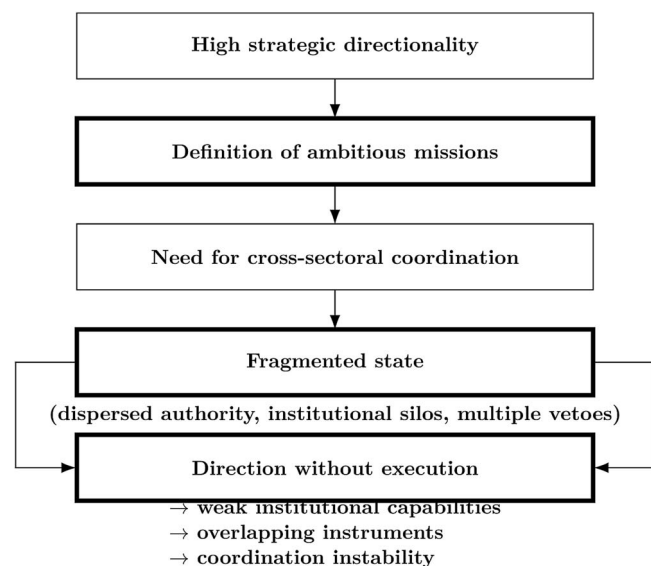


Figure 1 Core of the coordination paradox in fragmented states. Source: Authors.

does not possess self-executing capacity, requiring coordination mechanisms to be converted into consistent public action. It is at this point that the block ‘fragmented state (dispersed authority, institutional silos, multiple vetoes)’ operates as a structural condition that tensions this process, introducing conflicts, overlapping mandates, and difficulties of arbitration.

Finally, the observed outcome in ‘disconnection in mission execution’ does not result from a supposed failure in defining direction or missions, but from the inability to sustain, under fragmentation, the decision-making coherence required for implementation. Thus, the diagram synthesizes the argument that directionality is expressed in missions and only becomes effective if mediated by coordination within specific institutional contexts.

4. Empirical evidence of the paradox

The empirical strategy adopted in this article seeks to make observable the analytical dimensions discussed in the analytical triad proposed in the theoretical framework—directionality, intra-state coordination, and institutional fragmentation—through the systematization of documentary and institutional evidence in three comparative tables (Tables 1–3). The joint reading of these tables allows the analysis to move from an abstract framework to an empirical level, making it possible to observe how the dimensions of the framework materialize in concrete contexts of industrial public policy. More specifically, the tables allow for the assessment of: (i) the extent to which directionality is made explicit and institutionalized; (ii) how—and with what limits—intra-state coordination operates on this direction; and (iii) how institutional fragmentation manifests as a structural condition of implementation.

The evidence systematized in Table 1 indicates that, in the three cases analysed, directionality does not appear as an abstract statement, but as an institutionalized arrangement of

instruments, targets, and explicitly defined technological trajectories. This result is consistent with the theoretical interpretation that directionality operates as a mechanism for structuring the sociotechnical space of variation, by delimiting which trajectories are considered legitimate and worthy of support (Schot and Steinmueller 2018). However, the table allows this discussion to advance by showing that such structuring takes empirically distinct, though functionally equivalent, forms, as also observed in comparative studies on mission-oriented policies and green transitions (Mazzucato 2018).

In the Brazilian case, directionality is particularly explicit and comprehensive, being formalized in six national missions, each associated with quantitative targets and an articulated set of industrial policy instruments. The presence of instruments such as directed credit, innovation subsidies, and demand-creation mechanisms—such as *RenovaBio*—indicates that directionality materializes simultaneously on both the supply and demand sides, reinforcing its active and selective nature.

In India, directionality presents a similar degree of explicitness, although concentrated in a single technological mission. The definition of clear quantitative targets—such as large-scale green hydrogen production—and the identification of specific technological pathways along the value chain indicate a precise delimitation of the space of variation. This pattern is consistent with analyses that characterize contemporary industrial strategies as mission-oriented in strategic sectors (Meckling and Nahm 2019). In this case, directionality takes the form of a focused technological trajectory, structured around specific industrial applications, also reflecting concerns with international competitiveness and the energy security of the national industry (International Energy Agency 2023).

In South Africa, directionality takes a more distributed form, organized into portfolios that articulate energy, industrial, and social objectives. Although equally explicit in terms of targets and instruments, its structure is more heterogeneous and transversal, reflecting the need to integrate multiple dimensions of transformation. This pattern is consistent with the literature on ‘just transitions,’ which emphasizes the simultaneous incorporation of economic, environmental, and distributive objectives (Newell and Mulvaney 2013, Heffron and McCauley 2018). Still, the presence of clearly defined portfolios and measurable objectives indicates that directionality, in the South African case, operates as a mechanism for delimiting the space of variation, albeit under greater institutional complexity.

Taken together, these findings suggest that directionality, as defined in the framework, is empirically observable. In all cases, the State plays an active role in defining technological and productive priorities, translating broad objectives into concrete policy instruments. This reinforces the interpretation that directionality is not a discursive attribute, but an institutionalized mechanism of orientation, albeit intrinsically contested, as already discussed in the theoretical model developed earlier.

Table 2, in turn, allows observation of how this directionality is processed within the State, highlighting intra-state coordination as a concrete—and not presumed—capacity for decision-making alignment. In line with the theoretical framework, the evidence shows that coordination is not limited to the existence of formal structures, but manifests in the capacity to integrate instruments, arbitrate conflicts, and sustain decisions over time (Metcalfe 1995, Kuhlmann 1998). This interpretation is also supported

In practice, this implies that decarbonization policies—such as the closure of coal-fired plants—must be coordinated with investments in new energy sources, reindustrialization strategies, and workforce reskilling programs, involving multiple agencies and levels of government. This process does not occur in a neutral environment: it is permeated by social, union, and regional pressures that turn each decision into a point of dispute. Empirically, fragmentation is expressed in the difficulty of aligning these dimensions simultaneously, requiring continuous negotiations over the pace of the transition, the allocation of resources, and the definition of priorities.

In all cases, therefore, institutional fragmentation is not limited to the existence of multiple agencies, but manifests as a concrete condition in which interdependent decisions are made in distinct arenas, under heterogeneous constraints and incentives. In this context, the definition of the mission tends to be concentrated in specific bodies of the State. Its implementation, however, depends on decisions and instruments distributed across other governmental arenas, revealing a structural dissociation between direction and execution capacity. This implies that strategic directionality, although formally defined, can only be effectively realized through continuous processes of articulation and arbitration, in which policy coherence depends on the capacity to align decisions within complex institutional contexts.

The comparative evidence indicates that, in the three cases analysed, strategic directionality is empirically robust and materializes in explicit missions, quantifiable targets, and portfolios of instruments that delimit technological and productive trajectories. The data from [Tables 1–3](#) show that directionality effectively fulfils the function of orienting expectations and structuring the space of possibilities, shifting public policy from a generic level to a regime of explicitly defined priorities. However, this strategic clarity is not accompanied by an equivalent structure of decision-making ordering within the State. On the contrary, the implementation of these missions occurs in contexts in which interdependent decisions are distributed across multiple organizations, without the presence of stable mechanisms capable of hierarchizing priorities, arbitrating conflicts among competing trajectories, and sustaining choices over time. In this sense, the empirical evidence suggests that these policies operate, in practice, as missions without hierarchy: arrangements in which strategic direction is clear, but the authority required to organize its execution is dispersed.

The implications of this pattern are directly observable in the dynamics of implementation. In Brazil, the coexistence of industrial instruments, fiscal constraints, and climate guidelines produces continuously renegotiated decisions, with limited intertemporal prioritization capacity. In India, the interdependence among supply, demand, and infrastructure policies along the hydrogen value chain requires constant synchronization across different agencies, often subject to misalignments across policy stages. In South Africa, the need to reconcile decarbonization, energy security, and employment turns each decision into a point of distributive dispute, hindering the consolidation of consistent trajectories. In all cases, the absence of decision-making hierarchy does not imply the absence of state action, but reconfigures coordination as a contingent process based on bargaining, accommodation, and cross-vetoes. The effect is not the absence of policies, but their operation under a regime of low prioritization capacity, in which competing trajectories

coexist for prolonged periods and institutional learning tends to be fragmented.

It is precisely this configuration that makes explicit the core of the coordination paradox. The same directionality that organizes state action and raises the ambition of policies simultaneously increases the interdependence among decisions and the need for mechanisms capable of ordering them. However, in contexts of institutional fragmentation, this ordering does not materialize in a stable way, making the effectiveness of missions dependent on coordination processes that remain structurally fragile. Thus, the central problem does not lie in the absence of direction, but in the absence of institutional mechanisms capable of transforming direction into consistent and hierarchized operational priorities. It is in this gap—between strategic orientation and decision-making ordering—that the analytical question guiding the next section emerges: under what institutional conditions is it possible to sustain the coherence of missions in environments characterized by dispersed authority and interdependent conflicts in coordination.

5. The governance space of the mission: A Bidimensional structure

The analysis developed throughout the article shows that the ability of mission-oriented policies to operate in contexts of structurally limited hierarchical coordination depends less on the clarity of objectives and more on the institutional architecture that sustains—or weakens—coordination among actors, instruments, and levels of government. Although the literature explicitly recognizes the need for cross-sectoral coordination and collective learning ([Schot and Steinmueller 2018](#), [Janssen et al. 2021](#)), it tends to treat such coordination as a functional assumption rather than as a problematic and historically conditioned institutional capacity. This section advances by making explicit that, in the absence of robust mechanisms of hierarchical coordination, directionality remains normative and prospective, but lacks the organizational basis required to generate solid transformation ([Kattel and Mazzucato 2018](#)).

The empirical evidence from the analysed cases reinforces this argument by showing that, although Brazil, India, and South Africa exhibit high levels of strategic directionality—with clearly defined goals, technological trajectories, and mobilization of policy instruments—their capacity to coordinate the implementation of these missions varies significantly, shaping their outcomes. In Brazil and South Africa, the coexistence of strategic ambition with institutional fragmentation—expressed in the dispersion of authority, overlapping mandates, conflicts between governmental agendas, and limited capacity for arbitration—prevents the effective integration of instruments and undermines the continuity of decisions, configuring what can be termed ‘missions without hierarchy.’ India, by contrast, although facing challenges related to federal complexity and heterogeneous interests, displays a relatively higher level of hierarchical coordination capacity, supported by more centralized governance structures and stronger central authority, which enables a more integrated—albeit still incomplete—implementation. Taken together, these findings indicate that directionality alone is insufficient to generate structural transformation, with hierarchical coordination capacity emerging as the decisive factor mediating the relationship between strategic intent and effective implementation.

In this context, the concept of hierarchical coordination capacity is proposed. This capacity is defined as the institutional ability of the State to align dispersed decisions, arbitrate conflicts among competing trajectories, and sustain strategic priorities over time, even in contexts of organizational fragmentation. It is important to emphasize that hierarchy here is not synonymous with authoritarianism, rigid vertical command, or the suppression of organizational autonomy. As argued by Peters (2015) and Fukuyama (2013), the relevant hierarchy in contemporary democracies refers to the capacity to produce decision-making coherence in environments characterized by multiple actors, veto points, and overlapping jurisdictions. This interpretation is compatible with the notion of state dynamic capabilities developed by Kattel and Mazzucato (2018), but specifies it for the context of mission-oriented innovation policies.

The comparative results allow us to interpret so-called ‘missions without hierarchy’ as a specific form of governance failure that emerges when the state’s capacity to define a clear and ambitious strategic direction is not matched by mechanisms capable of coordinating its implementation in a coherent and binding manner. This is therefore not a problem of lack of planning or ambition—as illustrated by the cases of Brazil and South Africa—but rather an inability to overcome the institutional fragmentation inherent in complex states, where the dispersion of authority, overlapping mandates, and proliferation of veto points hinder the integration of policy instruments and the intertemporal sustainability of decisions. In such contexts, hierarchical coordination proves weak or absent, causing strategic directionality to be continuously reshaped by dynamics of bargaining and sectoral accommodation, resulting in an inconsistent policy mix and a form of ‘strategic paralysis’ in which vision does not translate into effective action. The comparison with the Indian case further suggests that this capacity is not binary but varies in degree, and it is precisely this variation that conditions the level of coherence and effectiveness of mission-oriented policies. Hierarchical coordination should therefore be understood not as a functional prerequisite, but as a central explanatory variable mediating the relationship between strategic directionality and transformation, setting the stage for the identification of its constitutive dimensions.

Analytically, hierarchical coordination capacity manifests through four interdependent dimensions: transversal authority, arbitration power, interorganizational alignment, and decision-making continuity. Transversal authority allows strategic priorities to be imposed or negotiated above ministerial and sectoral silos, reducing the fragmentation of instruments and agendas (Painter and Peters 2010). Arbitration power is central for dealing with conflicts among competing technological pathways and divergent sectoral interests, especially under conditions of radical uncertainty, in which *ex ante* selection is unfeasible (Dosi 1982; Andersson et al. 2021). Interorganizational alignment refers to the coherence among ministries, funding agencies, public banks, and subnational levels, a necessary condition for distinct instruments to operate in a complementary and consistent manner (OECD 2021). Finally, decision-making continuity ensures that missions are not disarticulated by short political cycles, enabling cumulative processes of learning and institutional retention over time (Nelson and Winter 1982, Thelen 2004).

Missions without hierarchy should not be confused with generic coordination failures commonly discussed in public administration. Although coordination failures may arise in

routine political contexts due to information asymmetries, misaligned incentives, or organizational complexity, missions without hierarchy are specific to mission-oriented governance contexts. They emerge precisely when high strategic directionality coexists with fragmented authority structures, creating an incompatibility between the political ambition of missions and the institutional capacity to operationalize them. In this sense, missions without hierarchy represent a mission-specific governance failure, rather than a general problem of administrative coordination.

Based on these definitions, the article proposes that the functioning of mission-oriented policies can be analysed within a bidimensional governance space, defined by the interaction between directionality and hierarchical coordination capacity. Directionality refers to the degree to which policy makes explicit the objectives, priorities, and desired trajectories of innovation and structural change (Mazzucato 2016; Wanzenböck et al. 2020), while hierarchical coordination capacity conditions the possibility of operationalizing this direction in a consistent manner within complex institutional contexts. The intersection of these dimensions gives rise to distinct governance regimes. When both are high, an integrated missions regime emerges, in which strategic clarity is supported by effective mechanisms of alignment, arbitration, and decision-making continuity. In this regime, directionality organizes technological variation, while coordination enables processes of selection and retention, allowing cumulative learning and structural transformation (Nelson and Winter 1982, Schot and Steinmueller 2018). Historical evidence indicates that experiences of state-led industrialization in Japan and South Korea (Johnson 1982, Wade 1990) approximate this regime, as they combined clear industrial targets, interministerial coordination, and stable mechanisms of arbitration between State and market (Amsden 2001).

A second regime emerges when hierarchical coordination capacity is high, but strategic directionality is weak. In this case, a pattern of technocratic coordination is observed, in which the State possesses robust administrative and organizational capabilities but lacks challenge-oriented priorities. The result is the reproduction of existing trajectories and the reinforcement of technological lock-ins, limiting the transformative potential of innovation policy Arthur (1989); Weber et al. (2012). This regime is compatible with well-coordinated horizontal policies, but poorly suited to addressing complex societal challenges.

The analytically most relevant regime for this article, however, is the one in which high strategic directionality coexists with low hierarchical coordination capacity. It is in this space that missions without hierarchy emerge, characterized by strong strategic ambition but by institutional structures incapable of aligning instruments, decisions, and public organizations, especially in contexts in which different agencies respond to distinct sectoral interests. In this regime, mission-oriented policy does not fully disorganize nor revert to a pattern of diffuse fragmentation. Instead, it comes to operate through contingent coordination, based on bargaining, negotiation, and sectoral vetoes that manifest within the state apparatus through agencies and coalitions that defend specific interests, with limited capacity for prioritization and learning.

The consequences of this governance regime are significant. Low prioritization capacity prolongs the coexistence of competing trajectories, hindering processes of selection under radical uncertainty (Andersson et al. 2021). Institutional fragmentation compromises systemic learning by preventing the retention,

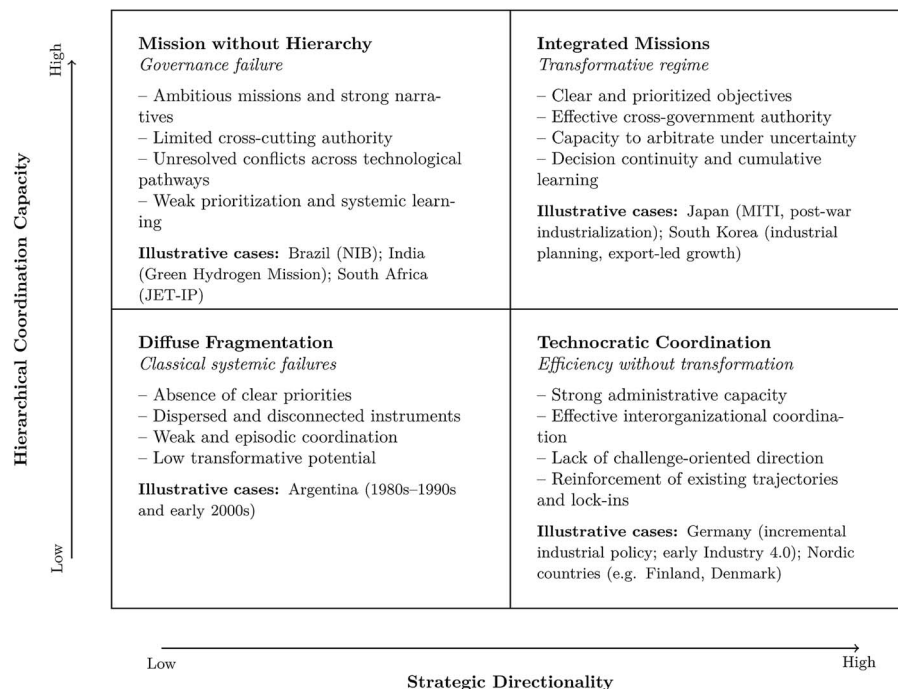


Figure 2 Two-dimensional framework of mission-oriented policy regimes. Source: Authors.

generalization, and accumulation of experiences over time. At the same time, reliance on mechanisms based on bargaining and veto increases the risk of mission capture or dilution, as sectoral interests begin to shape instruments and objectives incrementally, progressively distancing them from the original transformative ambition. In such contexts, policy tends to operate through contingent coordination, with limited capacity for prioritization and systemic learning.

This dynamic is synthesized in Fig. 2, which organizes policies within a bidimensional analytical space defined by the interaction between strategic directionality (vertical axis) and hierarchical coordination capacity (horizontal axis). Each quadrant represents a distinct governance regime, in which the combination of these dimensions conditions both the form of implementation and the observed outcomes. In the upper quadrants are contexts of high directionality, in which the State explicitly defines priorities, targets, and technological trajectories; their distinction derives from the presence or absence of mechanisms capable of sustaining this direction over time. In the lower quadrants, in turn, low directionality shifts policy toward arrangements in which state action tends to be diffuse or predominantly administrative, without clear transformative orientation. The framework, therefore, not only classifies cases but structures the central problem of the article by highlighting different combinations between directionality and intra-state coordination capacity.

The analytical reading of Fig. 2 requires considering these two dimensions simultaneously. Vertically, it distinguishes policies that organize the space of technological variation from those that operate without a defined strategic direction; horizontally, it differentiates contexts in which the State is able to order interdependent decisions from those in which such ordering remains fragmented. It is through the intersection of these axes that the central argument emerges: in the quadrant of

high directionality and low hierarchical coordination—where the analysed cases are located—policy comes to operate as a mission without hierarchy, that is, with clear direction but without stable mechanisms of prioritization, arbitration, and decision-making continuity. The other quadrants function as analytical counterpoints: technocratic coordination shows that administrative capacity without direction does not generate transformation, while diffuse fragmentation highlights the simultaneous absence of direction and coordination. The framework should be interpreted as a map of governance regimes and, above all, as the explicit expression of a structural tension: as the ambition of missions increases, so does the demand for mechanisms capable of ordering decisions, arbitrating conflicts, and sustaining intra-state coordination; simultaneously, the institutional limits that hinder the consolidation of such ordering become more evident, revealing that directionality alone does not guarantee the implementation capacity of the industrial policy instruments designed within missions.

The empirical examples reported are not arbitrary, as they correspond to historically documented patterns of interaction between directionality and state capacity. The integrated missions quadrant is anchored in classic experiences of late industrialization, such as Japan and South Korea, in which the existence of clear industrial targets was accompanied by strong interministerial coordination capacity and effective mechanisms of arbitration between State and market. The literature on the developmental state shows that institutions such as Japan's MITI and the South Korean planning apparatus were able to align credit, industrial policy, and technological strategy under centralized authority, sustaining processes of structural transformation and cumulative learning (Johnson 1982, Wade 1990, Amsden 2001). In contrast, the technocratic coordination quadrant—exemplified by Germany and Nordic countries—reflects contexts in which there is high administrative capacity

and coordination among policies, but an absence of explicit transformative directionality.

Studies on innovation systems in these countries highlight the predominance of horizontal policies², strong institutional articulation and regulatory stability, but with less emphasis on structural challenges, resulting in incremental trajectories and the reinforcement of existing specializations (Hall and Soskice 2001, Edler and Fagerberg 2017).

In the lower quadrants, the examples also correspond to empirically consolidated patterns. Diffuse fragmentation, illustrated by the Argentine case during periods of macroeconomic instability and policy discontinuity, reflects contexts in which neither directionality nor coordination is sustained over time. The literature on development in Latin America highlights how macroeconomic volatility, frequent shifts in policy orientation, and institutional fragility have limited the capacity to formulate and implement coherent industrial strategies, resulting in episodic policies and low structural transformation (Rodrik 2008, Ocampo 2011). In turn, the missions without hierarchy quadrant, associated with Brazil, India, and South Africa, is supported by contemporary evidence showing the coexistence of high strategic ambition with fragmented state structures. In Brazil, the literature on coalition presidentialism emphasizes the dispersion of power and the centrality of interinstitutional negotiation (Cavalcante 2025); in India, studies on economic governance highlight decentralized implementation and regional heterogeneity (Rodrik and Subramanian 2005); and in South Africa, analyses of the energy transition point to distributive conflicts and coordination challenges in contexts of structural transformation (Backer et al. 2014). These cases suggest that the combination of high directionality and low hierarchical coordination capacity is not residual, but constitutes a recurring empirical pattern, justifying its centrality in the proposed framework.

6. Implications and conclusions

This article started from the recognition that mission-oriented innovation policies have consolidated as one of the main contemporary instruments of industrial policy, by repositioning the State as an active agent in shaping technological trajectories. However, throughout the analysis, it was argued that the literature has disproportionately emphasized the dimension of directionality—that is, the capacity to define objectives, targets, and trajectories—while remaining relatively silent regarding the institutional conditions required to sustain this direction over time. By shifting the analytical focus to the relationship between directionality and hierarchical coordination capacity, the article contributes to a more precise understanding of the institutional determinants of the effectiveness of these policies.

The cases of Brazil and South Africa show that ‘missions without hierarchy’ lead to ambitious policies that weaken during implementation due to institutional fragmentation, dispersion of authority, and decision-making instability, while India, with a moderate level of coordination capacity, demonstrates that different degrees of effectiveness can be achieved when more robust mechanisms of arbitration and alignment are in place.

The main implication is that defining strategic direction is not sufficient: it is necessary to strengthen intra-state hierarchical coordination capacities through binding arbitration mechanisms, coherent integration of policy instruments, and intertemporal stability of decisions, in order to translate political ambition into effective implementation.

The main conclusion is that strategic directionality, although necessary, is not sufficient to ensure the consistent implementation of mission-oriented policies, since there is an institutional asymmetry between the capacity to define it and the capacity to operationalize it in contexts of state fragmentation. In contexts characterized by institutional fragmentation—marked by dispersed authority, overlapping mandates, and multiple decision-making centers—the absence of mechanisms capable of ordering interdependent decisions undermines the State’s ability to transform strategic direction into coordinated action. In such contexts, missions tend to operate under a regime that the article defines as missions without hierarchy: configurations in which there is normative clarity and strategic ambition, but an absence of stable mechanisms of prioritization, arbitration, and decision-making continuity, which limits the capacity to order trajectories, resolve conflicts, and sustain the implementation of the targets and instruments of industrial policy over time.

This characterization advances the debate by identifying a specific governance failure that is not reducible either to market failures or to systemic failures of innovation. Missions without hierarchy emerge when directionality exceeds the institutional capacity to coordinate it, generating a structural misalignment between ambition and execution. Empirically, this is manifested in the overlap of instruments, the prolonged coexistence of competing trajectories, the intertemporal instability of policies, and the difficulty of consolidating cumulative learning processes. The result is not the absence of state action, but its operation within a regime of contingent coordination, in which decisions are constantly renegotiated and subject to cross-vetoes. The proposed analytical structure—based on the interaction between strategic directionality and hierarchical coordination capacity of the states analysed—allows these results to be organized in a systematic and comparable manner.

By introducing this distinction, the article shifts the debate on mission-oriented policies from a predominantly normative evaluation to an institutional analysis of state capacities that condition their implementation. This shift is particularly relevant for emerging economies, in which the adoption of missions has often been associated with reindustrialization and green transition strategies, but where institutional fragmentation tends to limit the capacity to sustain decision-making coherence. From the perspective of implications for industrial policy, the results suggest that the evaluation of mission-oriented policies cannot be restricted to the clarity of their objectives or the sophistication of their instruments. In contexts of fragmentation, the effectiveness of these policies is conditioned by the existence of institutional mechanisms capable of evaluating and, when necessary, dynamically reordering the policy mix, allowing for the selection of trajectories, the resolution of conflicts, and the maintenance of intertemporal commitments. This implies recognizing that classical instruments—such as public financing, government procurement, and regulation—play a conditional role: their contribution to structural transformation depends less on their isolated characteristics and more on the institutional architecture that articulates them.

² Horizontal industrial policy corresponds to transversal and non-selective interventions that address market failures and systemic factors—such as human capital, infrastructure, financing, and diffuse innovation—with implicit directionality and without explicit sectoral or technological prioritization.

At the same time, the article does not argue that there is a single or universally applicable institutional model to resolve this problem. Hierarchical coordination capacity, as defined here, does not imply absolute centralization or vertical control, but refers to a specific set of mechanisms that allow decisions to be ordered in contexts of interdependence and conflict. It is a contingent capacity, historically constructed and dependent on specific institutional and political arrangements. In this sense, the argument is not normative, but analytical: the effectiveness of missions depends on the degree of alignment between strategic ambition and institutional capacities, regardless of the form these capacities take. As a practical implication of the analysis, this requires that the design of industrial policy incorporate, from the outset, concrete coordination mechanisms—explicit definition of priorities, bodies with authority to arbitrate conflicts among agencies and instruments, routines for monitoring and revision, and devices for alignment across levels of government and agencies. In the absence of these elements, the expansion of strategic ambition tends to translate into decision-making fragmentation, overlap of initiatives, and low implementation capacity, undermining the effectiveness of the intended structural transformation.

Finally, the article acknowledges important limitations. The propositions developed are situated at the analytical level and are oriented toward the identification of mechanisms and conditions of possibility, and should be interpreted in light of this scope, rather than as broad and universal empirical generalizations, given the methodological scope of analytical laboratories and plausibility probes adopted in the study. Moreover, the reliance on documentary sources implies that informal dimensions of coordination—such as intra-executive processes, inter-bureaucratic negotiations, and tacit mechanisms of arbitration—are captured only indirectly. The classification of cases within the proposed regimes also involves an interpretive component, inherent to comparative qualitative approaches. Therefore, the article does not systematically explore the temporal dynamics of coordination capacities, nor does it directly test the mechanisms that connect coordination and policy outcomes.

The analysis is predominantly conceptual and supported by qualitative empirical evidence, and does not aim to systematically test or express causal relationships nor to quantitatively measure the impact of the missions associated with the cases studied. These limitations, however, are consistent with the nature of the proposed contribution and do not compromise the analytical validity of the argument. By focusing on the identification of mechanisms and conditions of possibility, the article operates at a level of abstraction that does not seek statistical generalization, but rather theoretical coherence and empirical plausibility. In this sense, the proposed framework offers a valid analytical tool for interpreting the governance of mission-oriented industrial policies, while also establishing a structured basis for future empirical investigations that are more extensive, comparative, and systematic.

In sum, by treating coordination as a central analytical problem—and not as an implicit premise—this article contributes to a more realistic reading of mission-oriented policies. By making explicit the paradox of missions without hierarchy, it becomes evident that the central challenge of these policies does not lie in the absence of direction, but in the institutional conditions that allow that direction to be sustained. Recognizing this paradox does not imply reducing the ambition of missions, but rather refining the

debate on their possibilities, shifting it from normative promises to the concrete conditions of their governance and implementation.

Conflict of interest

The author declare that they have no conflict of interest.

Funding

This research was supported by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code PROAP PPGDR 15/2025/PRPG/UFG.

Data availability

This study did not involve the collection, generation, or analysis of empirical datasets.

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