

# THE ALGORITHMS OF IDEOLOGY IN ECONOMIC PLANNING: A CRITICAL LOOK AT CUBA'S NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT PLAN 2030

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Central planning for the development of the productive forces of the state has been a core element of Leninist governance since the 1920s. In the form of the Soviet five year plans, these efforts institutionalized the leadership of the Leninist vanguard party as the source of decision-making for the management of all national resources, and to “increase the state planning element in economic life” (Procopovicz 1930, 28). No less than in the Soviet Union of the late 1920s, the Cuba of the second decade of the 21<sup>st</sup> century continues to seek, through centralized planning, to naturalize a distinctly European Marxist collectivization in the “form of State organization of certain economic branches under the dictatorship of the Communist Party” (Ibid., 91). Leninist states are not the only political or economic enterprise that plans, and that reserves to its leadership class a monopoly of power to direct all of the productive forces of the enterprise. Planning in European fascist states of the 1930s shared many of the same characteristics (other than the ownership of the means of production) (Temin 1991, 573). Today most states devote substantial resources to strategic planning (Mintzberg 1994). Yet, as this essay means to demonstrate, at least within the state sector, central planning is acquiring an algorithmical character that may eventually supplant regulatory and principal based governance in the management of the state and its economic policies (Jessop 2013).

But ironically, it is in large enterprises that Soviet style central planning now thrives—organizations in

which the governing institutions within the enterprise retain power and the enterprise owns all of the means of production subject to its planning. More importantly, in these enterprises, planning is an essential way to socialize their workers, express their ideology in concrete ways and set the parameters against which risks and options may be weighed and measured (Hayes 1985; Bryson 2011). Indeed, one of the most fascinating and least studied transformations is the way that Leninist principles—especially with respect to the internal ordering of a political-economic governance unit—has migrated in the West from the state to the enterprise, and from the enterprise to the structures of globalization itself (Varga 1964, 82–139). The largest Western multinationals manage their production chains (their internal economies) in ways that parallel the management by vanguard parties of the productive forces of the state. But the new planning is not merely qualitatively narrative, it has assumed the structures of algorithms—sets of rules that defines a sequence of operations, whether or not contingent (Bisschop & Meeraus 1982; generally, Pasquale 2015).

Despite this resonance, or perhaps because of it, the development plans of Marxist Leninist states are usually given short shrift. They are useful as indicators of resource and production allocation but for little else (other than perhaps evidence of the failures of central planning *when undertaken by the state*). Beyond that, these documents are treated as mere (unattainable) expressions of ideology (at best) and propaganda (at

its most pathetic) (Backer 2006). Yet there is value in considering critically these development plans, if only to get a sense of the mindset of high level functionaries with control over macro-economic policy, and to get a sense of the administrative cultures within which governmental middle managers will actually exercise discretionary authority. As global enterprises understand in this century (and as Soviet theorists understood a century ago), a principal object of development planning is not merely as an expression of the control of productive forces by the state apparatus under the leadership of a vanguard group, but also as a means of making meaning (1) of expressing the ideology beneath those planning decisions, and (2) of the creation of structures within which such decisions can be valued and understood in accordance with the structural terms of the ideology from which they spring. Early in the existence of the USSR Lenin was famously quoted as explaining that “what socialism implies above all is keeping account of everything” (Kolakowski 1978, 748).

This core principle of Leninism is well expressed through the management by the state of all productive forces. Economic planning serves not merely to describe the ways that economic productive forces will be applied, but also to embed the valuation system inherent in validating those choices within the logic of the system within which these allocations are considered. More than that, it also serves to express the way in which social, political and cultural forces are to be deployed in the service of the choices made for the development of productive forces to build a socialist society. That, in essence, is the paramount aim of economic, cultural, social and political planning—the creation of a socialist society, the construction of which is left to the control of the vanguard party. Most Westerners have been inculcated with the incompatibilities of this ideology to their own. What they fail to appreciate is the extent to which this normative world view creates both a language and a means of measuring value that is then

central to determinations of what for Westerners are “mere” economic transactions or capital investments. Economic plans, then, *manifest a way in which the Marxist-Leninist vanguard party makes meaning* through its control of the state apparatus in a manner that appears to parallel the way that meaning is made through the logic and premises of the market in trade (generally Richards 2001). This in turn parallels the project of meaning making through law, in which the judiciary serves as the principal vehicle for making meaning within Western legal systems (Broekman & Backer 2013). The object, ultimately, is to control the meaning of words and the values they represent, including the very term “democracy” (Mitter 2017).<sup>1</sup>

The Cuban National Economic and Social Development Plan 2030 (PNDES) presented at the 7th Party Congress is particularly useful example of the way that ideology, social planning and politics pervades the economics of Cuban approaches to the management of their economic relations with foreigners (including the globally dispersed Cuban exile communities). But more important, it is an excellent example of the way that *language is used to create meaning*, to develop not merely a vocabulary (that appears tedious to the outsider) but to embed values that substantially affect the calculation of benefit among choices in both economic policy, and in dealings with foreigners. It is also important as a vision for transition developed in the wake of anticipated changes in higher leadership and the effects of normalization with the United States. *But most importantly, PNDES itself can be understood as a crude but sophisticated algorithm* for directing the Cuban economy and providing a coherent basis for making choices among economic activities.

This essay critically considers PNDES in this context. It starts with a brief analysis of PNDES for what it can reveal about entrenched ideological perspectives that shape decision making and analysis within Cuban Party and administrative elites. That is, it

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1. “If China can persuade new partners to redefine ‘democracy’ in its own terms, as a system that somehow does not involve national votes, free media or popular participation in government, then it will have won ownership in a powerful linguistic battle.” (Mitter 2017).

considers the way in which PNDES produces language that suggests the *valuation algorithms* to be used in making specific determinations about the operationalization of policy. This exercise produces a crude set of relational equations that might help clarify the way that PNDES elaborates structures of decision making and incorporates valuations (though the values themselves cannot be supplied for the coefficients). The essay ends by considering the way that these crude conversions of ideology to algorithm might be tested within the context of Cuban decision making with respect to individual trade deals and to its macro-economic planning as well.

**THE PLAN NACIONAL DE DESARROLLO  
ECONÓMICO Y SOCIAL HASTA 2030  
(NATIONAL ECONOMIC AND SOCIAL  
DEVELOPMENT PLAN UNTIL 2030) (PNDES)**

The *Plan Nacional de Desarrollo Económico y Social hasta 2030* (National Economic and Social Development Plan until 2030) (PNDES) was meant as a formal follow up to the *Lineamientos* adopted by the 6<sup>th</sup> PCC. It is also meant to establish the vision of the nation in concrete form through the specification of the structures for economic management. In that connection, it serves as the application of the more theoretical principles of the *Conceptualización del Modelo Económico y Social Cubano de Desarrollo Socialista* to the specifics of state planning as a substitute for market management.<sup>2</sup> Both documents remain unapproved.<sup>3</sup> PNDES is intended as the guiding document for the implementation of Central Planning with respect to strategies, objectives and action in economic, social and political matters. It is intended to be read together with the *Conceptualización*, with which it was distributed. That is, it reiterates the notion that economics is political, and that both are effectuated through control of societal behaviors. PNDES is thus framed as the expression

of socialist central planning and the expression of a Cuban socialist economic management system that finds both the language of its expression and its theoretical expression in the *Conceptualización*. PNDES thus provides a window not just on Cuban macro-economic and socio-political central planning, but also provides the conceptual framework and patterns of analysis and valuation through which decision-making is undertaken internally and negotiations framed with foreigners.

PNDES begins with an Introduction (§§ 1–11). Section II focuses on guiding principles and thematic categories (§§ 12–39), Section III then elaborates the “National Vision 2030” (§§ 40–43), Section IV describes critical strategic themes (“*ejes estratégicos*”) (§§ 44–220), and Section V touches on strategic economic sectors (§§ 221–251). The strategic themes are the heart of the PNDES and include (1) efficient and socialist government and social integration (§§ 49–77), (2) transformation and internationalization of production (§§ 78–101), (3) infrastructure development (§§ 102–129), (4) developing human potential through science, technology and innovation (§§ 130–157), (5) development of natural resources and environmental concerns (§§ 158–184), and (6) human development, equality and justice (§§ 185–220). Each theme is elaborated through general objectives and specific objectives. PNDES ends with a definition section covering thirty-three (33) terms. And indeed, in some respects the definitions are possibly the most important element of PNDES—providing the most concrete direction about the character of the implementation of the more generalized objectives set out in the rest of the document.

**Introduction (§§ 1–11); PNDES Section 1**

The Introduction frames the history and legitimating ideological line within which the planning that follows can be justified and understood. It also serves to

2. *Conceptualización del modelo económico y social Cubano de desarrollo socialista: Plan nacional de desarrollo económico y social hasta 2030: Propuesta de vision de la nación, ejes y sectores estratégicos* (hereafter the *Conceptualización*). Discussed in Larry Catá Backer, “Central Planning versus Markets Marxism: Their Differences and Consequences for the International Ordering of State, Law, Politics, and Economy,” *Connecticut Journal of International Law* 32(1):1–47 (2017).

3. The current expectation is for approval of both by the Central Committee Plenum sometime in 2017. See Oscar Sánchez Serra, “A year later, the 7th Party Congress continues,” *Granma* April 19, 2017.

justify its failures by placing blame beyond the state and the revolutionary vision. It also describes the scope of the planning project and its structures. It is necessary to read the substantial detail that follows in light of the principles and premises set out in the Introduction.

The Introduction grounds the historically validating importance of planning in both the revolutionary struggle of the 1950s and the constant need for self-defense thereafter (§ 1). Central planning over short, medium and long term continues embedded as the fundamental element of the economic and social management system, as the state faces new challenges posed by advances in the revolutionary project and the evolving and complex international environment (§ 2). The central planning system suffered negative repercussions after the collapse of the USSR and in the face of the U.S. Embargo, at least with respect to medium and short term planning (§ 3), and accounts for the failure to solve structural problems in the economy and the development of productive forces according to plan (§ 4). Within this context, the objectives of the proposed planning emerges: (1) to resolve the structural imbalances of the economy through governmental policies, (2) to structure those public interventions with systemic, integrated and sustainable approaches, (3) to ensure consistency with the Communist Party line set out in 6<sup>th</sup> PCC *Lineamientos*. The product of this effort is PNDES (§ 5). The process for the elaboration of PNDES was set out in a diagram meant to suggest both coherence and systemicity (§§ 6–7).

PNDES was elaborated in two stages. The first was centered on the political and conceptual framework approved by the 7<sup>th</sup> PCC in 2017 (including the theoretical *Conceptualización*), core themes and strategic sectors (§ 8). The second was focused on implementation on a sector rather than national basis (§ 9). Adopting the techniques from Western and Markets Marxist states, the plan will also include “monitoring, control, evaluation and accountability mechanisms ... to implement results-oriented management models” (§ 10). The PNDES focuses only on the first stage of the planning process. The actual and complex work of implementation and operation will

be left to the state organs and the discretion of the functionaries (§ 11). For its limits PNDES is important as the guiding structure for implementation against which to gauge both the extent of possible state action (through legislation and administrative programs), as well as providing the language through which economic development, and the objectives of the Cuban state in dealing with foreign direct investment, will be understood by Cuban authorities.

### **Guiding Principles and thematic categories for the elaboration of the National Economic and Social Development Plan; PNDES Section II**

PNDES first references the “Fundamental Aspects of the Bases for the Elaboration of the National Plan for Economic and Social Development 2016–2030 (“Aspectos fundamentales de las bases para la elaboración del Plan Nacional de Desarrollo Económico y Social 2016–2030”), approved by Agreement 19/14 of the Council of Ministers (March 2014), which set out the guiding principles now made applicable to PNDES (§ 12). That document, in turn, was described as the product of exhaustive analysis of the contemporary situation of Cuba with the aim of consolidating a sovereign nation that is independent, socialist, democratic, prosperous and sustainable. These, then are the core values that ought to infuse central planning (§ 13).

PNDES identifies 23 guiding Principles (§§ 14–36). These describe the scope of Cuban macro-economic policy principles and objectives. Many of these also echo the objectives of the *Lineamientos* from 2011. Among them are increasing the gross domestic product (§ 14), ensuring public ownership of the basic means of production and consolidate socialist economic and social development grounded in government control and national participation (§ 15), sustainably augmenting efficiency and competitiveness with emphasis on quality (§ 16), perfecting the structures of national defense (§ 17), ensuring internal security and good order (§ 18), stimulating scientific and technical research and its diffusion (§ 19), moving toward renewable energy sources (§ 20), transforming energy, modernizing infrastructure (§ 21), improving national demographics (§ 22), developing productive activities that exploit comparative advan-

tages of the Cuban economy to better embed the state in the global economy (§ 23), ensuring preference to the development of identified strategic sectors (§ 24), seeking food self-sufficiency (§ 25), attaining coherent monetary policy (§ 26), increasing national savings rates and specialized domestic financing vehicles (§27), increasing and diversifying financing sources from abroad to the extent they contribute to planned national development (§ 28), managing foreign investment to contribute toward national development (§ 29), expanding and diversifying foreign commerce (§ 30), expanding and perfecting the internal market (§ 31), consolidating national health care, education, social welfare programs, education, sport, recreation and the like (§ 32), assuring sources of employment (§ 33), ensuring that “work is in itself a necessity and reason for personal fulfillment for each citizen” (§ 34), ensuring an adequate distribution of national economic development throughout the country (§ 35), protecting the environment as a factor in economic development (§ 36).

These thematic categories suggest the structure and scope of macro-economic policy and planning. They serve as well as the reference for the contours of implementation (§ 38). The thematic categories and their relationship are outlined in a diagram (§ 39) that shows an equivalence among themes. With no formal sense of relative value, it is difficult to understand how they work against each other in decision making.

### **National Vision 2030; PNDES Section III**

The national vision for 2030 draws on the fundamental principles of the Lineamientos and the guiding principles of Section II. The vision sees the attainment of the goal of a nation that is sovereign, independent, socialist, democratic, prosperous and sustainable (§ 40). The vision incorporates political, social and economic goals as inexorably linked. It rejects the conventional notions of a divide between public and private and rejects the possibility of individual choice and will in the attainment of these socio-political and macro-economic goals (§ 42).

### **Strategic Themes; PNDES Section IV**

This section is the heart of the strategic vision of the 2030 Plan. It elaborates six “intimately interwoven and systematically designed” core strategic themes around which economic planning will be undertaken (§ 44). These are identified at § 45 as (1) efficient and socialist government and social integration (§§49–77), (2) transformation and internationalization of production (§§ 78–101), (3) infrastructure development (§§ 102–129), (4) developing human potential through science, technology and innovation (§§ 130–157), (5) development of natural resources and environmental concerns (§§ 158–184), and (6) human development, equality and justice (§§ 185–220). These are meant to serve as the qualitative categories through which development will be structured (§ 46). Around these six strategic themes, PNDES establishes twenty-two general objectives and one hundred and six specific objectives (§ 47) that constitute the bulk of the rest of the Plan. All of these are tied to the Lineamientos (§ 46) and the efforts at modernization and preservation that has marked the policies of the Cuban state since the elevation of Raúl Castro as First Secretary of the PCC.

(1) *Effective socialist government and social integration (§§49–77)*. It is no accident that PNDES starts with the political and social project of promoting an efficacious and socialist governmental apparatus that is capable of engaging in projects of social integration. The perfection of the state apparatus is central to the realization of the National Vision for 2030 (§ 49), as they are meant to play a crucial role in the formulation and implementation of public policy (§ 51), under the leadership of the PCC and subject to law (§ 51). The driving premise is that modern state bureaucracies and their officials are crucial for operationalizing central planning and especially to the formation and strengthening of values and the promotion of higher levels of political, legal and economic culture among citizens (§ 52). Indeed, the focus on the need to reshape the individual, carried over from the *Conceptualización*, appears to play a major role in the structuring of this thematic strategy, not just with respect to the cultivation of good socialist values (as determined from time to time by the PCC) but also in playing their part in maintaining

the tightly controlled non-state sector in ways that contribute to the state's macro-economic, social and political objectives (§ 53). In this respect, the thematic strategy concentrates on enhancing the power of the state to decisively influence and in this way to manage virtually every aspect of development (§ 54).

This integrated function is viewed as essential to preserve the character of the political system (§ 55).<sup>4</sup> It is elaborated in four general objectives the thrust of which has already run through much of the anterior discussion. These include (1) consolidating the socialist state and popular participation in it (§ 57), (2) strengthen the institutional dimensions of the state apparatus and enhance their respect for the law (§ 58), (3) consolidate national defense and security (§ 59), and (4) foster integration into global and regional economic systems (§ 60). These general objectives are then elaborated through a series of seventeen (17) more specific goals and intentions. They are more specific in the sense that they describe more concrete goals. Yet each of them is still general enough to leave a substantial discretion with respect to their meaning and their implementation. They include a hodgepodge of economic, social, and political goals. *But do not mistake hodgepodge for carelessness—the conflation suggests the core principle of Cuban macro-economics and central planning—that economics serves political purposes first and foremost, and that the political ends of economics involve the fundamental transformation of the social order.* Within that framework, the economic goals reflect the major objectives in terms of building a sound internal macro-economic policy grounded on respect for law. The most important of these is the commitment to order and regulate national mar-

kets (§ 69). The political goals include many long-term policies of the Cuban state, including getting out of its arrangement for the lease of the Guantanamo territory and to end the U.S. embargo. It also includes declarations that commit Cuba to projecting a strong voice in international circles to project its view of global economics, the contours of which have been well developed in the voluminous writings around ALBA (Backer and Molina 2010). The only limits of such discretion might be derived from the overarching intent of the document and the more specific definitions in the definitional appendix.

(2) *transformation and internationalization of production (§§ 78–101).* Transformation of the state sector itself is a necessary predicate of the ability of the state to successfully project itself into global and regional markets. The internationalization of the Cuban economy is to be grounded in three premises: “to shift the fundamental effort of economic activity towards new activities with greater knowledge and technology; to make the necessary changes and adjustments within each sector, especially those considered as strategic, and to modify the model of specialization and participation in the international economy” (§ 78).<sup>5</sup> This will require transformation and modernization of the industrial base, something that is large respect remains very much a long term goal. It also requires the state to make choices about what economic sectors ought to be emphasized and cultivated for maximum economic effect (§ 80). But internationalization is also tied to domestic consumption, at least in theory, and to the overwhelming need of the Cuban state for hard currency (§ 81). These desires are organized into five general thematic

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4. “Todo ello, con el objetivo de conformar y consolidar una sociedad segura, justa, cohesionada y solidaria, que se distinga por la equidad proveniente del fortalecimiento del principio de distribución de la riqueza creada según la cantidad y calidad del trabajo aportado, por la preservación de las conquistas de la Revolución en materia social y por una mayor participación efectiva y responsable de los ciudadanos en la toma de decisiones.” [“All this, with the aim of forming and consolidating a secure, fair, cohesive and solidary society, distinguished by the equity resulting from the strengthening of the principle of distribution of wealth created according to the quantity and quality of the work contributed, For the preservation of the achievements of the Revolution in social matters and for greater effective and responsible participation of citizens in decision-making.”]

5. In the original § 78: “La transformación productiva como componente de una estrategia de desarrollo debe abarcar tres aspectos esenciales para que impacte de manera significativa en el crecimiento económico y social a largo plazo, estos son: desplazar el esfuerzo fundamental de la actividad económica hacia nuevas actividades con mayor conocimiento y tecnología; realizar las transformaciones y ajustes necesarios al interior de cada sector, en especial de aquellos considerados como estratégicos, y modificar el modelo de especialización y participación en la economía internacional.”

objectives (§§ 83–87): (1) producing a sufficiently high and sustained growth to support internal development, (2) fostering production structures that are diversified, effective, efficient and sustainable, (3) developing better participation in international markets, (4) achieving better integration among the nation’s economic actors and better “which responds timely to the demands of the domestic market, both in the productive sector and in the population” (§ 86), and (5) generating sufficient productive jobs.

The fourteen (14) specific objectives that follow elaborate these larger themes. The most interesting aspect of the specific objectives is its identification of those sectors selected for development. These include the agricultural sector (§ 92), agricultural manufacturing (§ 93), construction (§ 94), and tourism (§ 95). Beyond that, the specific objectives remind the state of the need for efficiency and development of the rest of the economy, including the non-state sector, and to increase exports (though of what products remains unspecified), spread development throughout the Island and better participate in financial markets. That development is tied to the fostering of jobs higher on global production chains. The focus on tourism is particularly interesting as an example of the way in which economic objectives are also deployed to social and political ends.<sup>6</sup> But that applies also to the generation of jobs generally, with respect to which the state does not appear to tolerate wage markets (§ 101).

(3) *infrastructure development* (§§ 102–129). Of course, (1) development of the governmental apparatus as the institution that would substitute itself for the market in the management of economic development, along with the conflation of economic, political and social objectives as a coherent integrated strategy for development, and (2) the targeting of specific economic sectors top drive macro-economic policy and development can have little hope of success in the absence of the infrastructure necessary to

permit actual operationalization of the lofty goals of the 2030 National Vision (§§ 102–109). It is to the necessity of infrastructure development that the next section of PNDES is devoted.

Infrastructure development is subsumed within three general objectives. The first seeks to maximize the contribution of infrastructure to the process of development (§ 113). The second seeks to center the state as both regulator and participant in infrastructure investment (§ 114). The third seeks to stimulate foreign investment along with national investment in infrastructure development (§ 115). The fourteen specific objectives then elaborate these more general ones. Among the more interesting ones: (1) the goal of turning Cuba into a regional transport center (§ 126) with respect to which the development of the port of Mariel is already a part. Like the sectoral development objectives, infrastructure development also includes a social and political element. Thus, for example, the development of water infrastructure is tied to instilling cultures of conservation in the population (§ 124). Likewise infrastructure development is tied to metrics of social productivity (undefined) (§ 119). Foreign investment in infrastructure will be carefully managed to advance the political objectives of the state (§ 120).

(4) *developing human potential through science, technology and innovation* (§§ 130–157). That conflation of economic and social development is made more acute with the strategic theme of developing human potential. This development of the productive forces of the population is targeted toward Cuban participation in international markets (§ 130), that is, that the development of human potential, like the development of infrastructure, are both necessary for the project of economic transformation in the construction of a socialist economy and society. Human capacity is necessary for its value to the state, and it is on its contribution of value to the state that the individual may herself find value. But that requires ex-

6. In the original (§ 95): “Con el propósito de incrementar los ingresos por exportaciones de servicios, su capacidad de crear fuentes de empleo, promover la cultura nacional e incrementar su encadenamiento con los mercados internos y producciones nacionales.” [“With the purpose of increasing income from services exports, its capacity to create employment, promote national culture and increase its linkage with domestic markets and national output.”]

tensive political education—the management of the human potential in individuals itself (§ 131).<sup>7</sup> In the face of this the aging Cuban population threatens productivity by reducing the size of the available workforce for which technology enhanced “knowledge intensive” productivity can overcome (§ 132). But that requires the ability to generate productivity enhancing technology and the institutional basis to support and operationalize those technological potentials (§§ 134–135).

That goal is the central element of this set of thematic objectives. It is elaborated in three parts (§§ 137–139). The first touches on ensuring the conditions for the protection of development of human potential. The second refocuses education on science, technology and innovation on economic and social development. The third is to develop technological capacity in the service of “technological sovereignty.” Eighteen specific objectives then elaborate these objectives (§§ 140–157). These include prioritizing sectors and activities which are driven by science, technology and innovation in a number of ways. Of particular interest are two points that suggest both the unique features of PNDES. The first is the objective of inducing technology transfer schemes from more developed states through foreign direct investment conditions (§ 146), and international collaborations (§ 157) that can spawn indigenous processes (§ 148). The second is more subtle but potentially more potent: “To adapt the legal and regulatory framework of science, technology and innovation to the process of updating the economic model, so as to achieve agility, flexibility and efficiency in the organizational and economic-financial resources for the materialization of the impact of these activities on economic and social development” (§ 143).<sup>8</sup> Though it is not clear about the intent, what appears to

emerge is a willingness to adapt the traditional structures of law and governance in the service of the economic model. This parallels development in transnational law.<sup>9</sup>

(5) *development of natural resources and environmental concerns* (§§ 158–184). PNDES notes both the importance of environmental development to Cuban macro-economic and social progress. But and PNDES also notes the “lack of culture, systemicity, discipline and the lack of integral approaches, which have limited the introduction of the results of science and Technology and the environmental dimension in development policies, plans and programs” (§ 159). This ultimately threatens the development of natural resources within principles of sustainability that threatens the environmental quality of Cuba. To that end PNDES sets out three fairly straightforward general objectives (§§ 165–167): rational use and conservation of natural resources, enhancing environmental quality, and strengthening national capabilities to adapt to climate change. The seventeen specific objectives then elaborate the framework within which the general objectives will be achieved (§§ 168–184). Among the more interesting specific objectives are those targeting the strengthening of civil defense to respond to natural disasters (§ 183). The other looks to multilateral action to protect environment and natural resources (§ 184).

(6) *human development, equality and justice* (§§ 185–220). The last of the thematic categories brings planning back to the individual. These strategies touch on the welfare of the population and their quality of life. This issue is made more pressing given the setbacks of Cuban economic development since the fall of the USSR and in light of fall of the Cuban birth-rate (plus large scale emigration). What these challenges require is an “integrative and multidimension-

7. In the original: “Cuba cuenta con un alto potencial humano —fruto de una política educacional y social exitosa de más de cincuenta años— que le permite apostar por esta vía de crecimiento.” [Cuba has a high human potential—the fruit of educational and social policy of more than fifty years—that allows it to invest in this path of growth.]

8. In the original: “Adecuar el marco jurídico y regulatorio de la ciencia, la tecnología y la innovación al proceso de actualización del modelo económico, de manera que se logre agilidad, flexibilidad, eficiencia en los mecanismos organizativos y económico-financieros para la materialización del impacto de estas actividades en el desarrollo económico y social.”

9. Larry Catá Backer, *Transnational Legal Orders and Global Regulatory Networks*, Prepared for the International Francqui Symposium Global and Transnational Law Today (May 15, 2017).



al conception of development that allows dissimilar social actors to deploy their potential in order to reach levels of participation that allow the alignment of individual and family projects with the social project” (§ 189).<sup>10</sup> These are constructed around four general objectives (§§ 191–194): promote human development in an integrated manner, consolidate the achievements of the socialist revolution, guarantee the validity and respect for the rights established in the Cuban Constitution, and progressively reduce the economic and social.

The specific objectives then elaborate on the general objectives in ways that echo the PCC line. These are tied to preserving the high visibility achievements that include health care, education, sport, and the like, all of which were also the object of the Lineamientos (e.g., §§ 197, 199, 207, 209). Most interesting are the specific objectives that target the preservation of Cuban culture and the teaching of the political, social and cultural values that are unique to Cuba (e.g., §§ 198, 200). Even more interesting are the objectives of aligning family and social needs (§ 201), increasing the availability of consumer goods (though that too remains a decision left to central planning (§ 203), and the efforts (already well developed in the *Conceptualización*) that employment is, in itself, a necessity and motivation for personal fulfillment (§ 205). Lastly, macro-economic planning includes a large measure of training to resist globalization and the ideologies of states with an antagonistic relationship to Cuba (§ 218).

#### **Identification of Strategic Economic Sectors (§§ 221–251); PNDES Section V**

Central to the idea of central planning for a developing state with few accumulated resources like Cuba was the decision to select and focus on the development of specified economic sectors. In a sense this continues, but now in more deliberate form, the traditional construction of middle and lower tier states that are dependent on the demands of higher tier states or the logic of global production. Like many

states, then, the Cuban state apparatus seeks to center its macro-economic policies on the concentrated development of certain sectors which, heavily promoted by the state, would be the instrument of more profitable engagement with global production.

PNDES Section V first identifies the criteria used to select these target sectors (§§ 223–231). These ten criteria include the relative importance of the sector to the economy, the extent of the value added of the sector, the extent to which it contributes positively to balance of payments, the extent to which they enhance both supplier development and value added along the production chain, their ability to generate indigenous jobs, their positive impact on local economies, their connection to innovation and new technologies, the extent to which they can overcome infrastructure challenges, the extent to which they contribute to national sovereignty and security, and the environmental effects.

The target sectors were then identified as the following (many of which were already identified in prior sections of PNDES):

237. a) Construction, introducing new technologies, construction systems of high productivity and developing the construction materials industry.

238. b) Electro-energetic, focused on the use of renewable energy sources, raising efficiency and exploration, production and refining of oil and gas.

239. c) Telecommunications, information technology and connectivity.

240. d) Integrated logistics for transport, storage and commerce.

241. e) Integrated logistics of water networks and installations for productive and population consumption, including new technologies for the use of sea water in industrial and human consumption.

242. f) Tourism and its diversification, such as marine and nautical tourism, golf and real estate, nature, agriculture, cruise ships, historical, cultural and heritage, conventions, congresses and fairs, and especially the modalities of Health and quality of life; and with emphasis on its contribution to

10. In the original: “Se trata de una concepción integradora y multidimensional del desarrollo, que permita que los disímiles actores sociales desplieguen sus potencialidades, en aras de alcanzar niveles de participación que permitan alinear proyectos individuales y familiares con el proyecto social.”

strengthening the internal integration of the economy.

243. g) Professional services, in particular doctors.

244. h) Non-sugar agro-industry and food industry, with emphasis on integrating industry with the primary agricultural sector and raising the value added of food products.

245. i) Pharmaceutical, biotechnological and biomedical products.

246. j) Sugar and sugar industry, with emphasis on energy conversion.

247. k) Light industry, principally aimed at satisfying the demands of the population in the domestic market.

Beyond these, PNDES also posits complementarity in economic development (§ 248). These focus on the creation of a well-managed private sector that is meant to service the basic consumer needs of the population. This accords with the fundamental line of the *Conceptualización* and the *Lineamientos* that both posited a controlled private sector economy (the managed markets approach) but one the borders of which would be quite strictly drawn around the consumer sector (§§ 248–251). With respect to the rest, and especially with respect to the development of internationalization, the state would play a singular role.

But more importantly, PNDES appears to structure the planning for the targeted sectors around the principles and objectives elaborated—especially in Section IV around the conceptual themes. And these, in turn, will serve as instructions to the National Legislature for the enactment of legislation necessary to create a legal basis for economic development, and to state ministries for the elaboration of necessary regulations. It will also likely guide national entities—both SOEs and ministries, in the way in which they approach issues of administration—that is of the discretionary decisions that will be at the heart of any oversight of a marketless economy grounded in administrative decisions, projections and objectives. Most important, these planning guidelines will provide the template—and the language—through which the Cuban state will negotiate the terms, conditions and structures of foreign investment within Cuba. It will be critically important for foreign inves-

tors to understand that approach if they are to effectively communicate with Cuban officials and if they expect to understand and manage the risks of business with Cuba. Ultimately, the ability of foreign investors to “speak” this language in their interactions with the Cubans might well make investing easier. At the same time the conceptual framework of PNDES makes it very clear that economic development—and the role of foreign markets and foreign investment within it—is not understood as solely an economic project. To the contrary, the Cubans are being quite transparent about their conflation of economics and politics—that economic development, and foreign investment decisions (along with decisions about projections of Cuban economic power abroad)—is essentially a political issue. More than that, economic development must be understood as directed not just to politics, but also to social transformation. Investment will need to contribute to political and social ends, and these as understood by Cuban officials. These are considerations that may pose challenges for foreign investors and for the foreign business partners of Cuba in some sectors. Yet for several areas of strategic investment, it is less clear that these considerations will substantially and adversely impact business deals, at least at a conceptual level.

### Definitions and Glosses on Key Terms

The importance of understanding the conceptual basis for Cuban approaches to macro-economics, and to their objectives in seeking to embed themselves in global trade and open up to foreign investment is underscored by a reading of the inclusion in PNDES of an important gloss on key terms that were introduced in the 7<sup>th</sup> PCC and that occur as key elements of both the *Conceptualización* and PNDES itself. Among the thirty-three glosses offered, several are worth closer examination.

The most important, especially for foreigners seeking investment in Cuba and states seeking to understand the way that Cuban officials “think” (at least officially), is the definition of a prosperous and sustainable socialist society (*Sociedad socialista próspera y sostenible*).<sup>11</sup> The definition is founded on a negative—it is to be measured against and in opposition to what the authors understand (in their own way) to

be the “capitalist” system. By this they appear to mean their understanding of the system in place in the United States, filtered through the ideological lenses of nearly a century of Soviet “analysis”. It characterizes the capitalist system (and therefore the system they are not) as one driven by individual interest and consumption in which social production is undertaken at the cost of producing alienation and social differentiation as a result of which individuals are dehumanized and reduced to instruments that serve capital. The irony, of course, is that one might be tempted to argue that PNDES in its effort to create the model worker finding fulfillment through labor and consumption that reflects state tastes has also been reduced to an instrument that serves the state (rather than capital as doing exactly the same thing, only the dehumanization comes in the service of capital which has now merged with and become the state; but that is the essence of the fundamental argument between Adam Smith and Karl Marx (not about the preeminence of capital but rather about the siting of its control and its character as economic or socio-political). And, indeed, when one moves from the statement of what a prosperous and sustainable socialist society is not to what it is, one sees the irony better. “Its strategic purpose is the integral development of the human being, with high values and ethical principles, being essential to progressively consolidate the bases of the new social relations.”<sup>12</sup> Within that context, prosperity—the object of policy—is defined as attaining the satisfaction of the spiritual and material needs of individuals that encourages their capabilities, initiative and creativity that can help transform economic structures to reach new heights of competitiveness, sustainability and social justice.<sup>13</sup>

Socialist development (*desarrollo socialista*) is also an important term the gloss on which is worth consider-

ing. Again, the gloss starts with a negative—socialist development by definition is what capitalist or markets based development is not. First socialist development conflates the economic and social as a political issue requiring evaluation in conformity with the ruling ideology. The idea of autonomous economic determinism is rejected in favor of political and ideological determinism which is served by economics. That requires first the rejection of the autonomy of the individual as an economic actor. The objective of socialist development, then, is aggregate societal advancement along the lines compatible with the ideological values of the state undertaken for society through the state. Socialist development, then, serves to reinforce the notion that central planning is necessary to avoid the error of aggregating individual choices in markets—as these do not (in their view) serve the interests of society or the state.

Understanding “socialist development” then is a key to understanding the relationship between the state and the means of production, that is, of all productive capacity. This is made clear in the glosses on ownership of the means of production, common ownership of productive forces and non-state property.<sup>14</sup> The gloss makes clear that the old European Marxist view is still very much dominant. The starting point is the assumption that the state owns everything, and that only what the state cedes can be regarded as devolved to individuals—for as long as the state finds it useful. But it also suggests that economic value must be measured in terms not just of economic gains (as understood in the West) but also in its value added to the social construction projects of the state. As a result, devolving the means of production to individuals, or even loosening the control of productive capacity, can only be undertaken where and only to the extent that there is no alternative.

11. PNDES, “Acepción de algunos términos utilizados en los documentos que se presentaron al 7mo Congreso del Partido.”

12. In the original: “Su finalidad estratégica es el desarrollo integral del ser humano, con elevados valores y principios éticos, siendo imprescindible consolidar progresivamente las bases de las nuevas relaciones sociales.”

13. In the original: “Se define como próspera porque se aspira a un desarrollo económico y social que logre satisfacer integralmente las necesidades espirituales y materiales del ser humano, fomentando sus capacidades, iniciativa y creatividad, lo que supone la transformación de la estructura económica hacia niveles superiores de competitividad sostenible y justicia social.”

14. Items 4–6 in the definitional glosses.

The ideal state is one in which all ownership rests in the state. Deviation makes either a need to adopt the forms of ownership as necessary as a temporary measure to assure transition to the ideal state, or as a necessary concession to communication and commerce with foreigners.

It follows that negotiation will be based on valuation systems that are not in some ways comparable to Western valuation of “deals” and transactions. To that end, the definition of social cohesion makes clear that it plays a role in the way that decisions must be considered for their value to the state and the society building project to which it is committed under its present ideological line. That such values are to be applied by and for the state as the proxy holder for communal power is made clear in the definitional gloss of instruments for the direction of the economy (*instrumentos de dirección económica*). These instruments, then, are meant to reference all modalities of direction employed by the state to coordinate and manage economic actors to further the strategic interests of the state.

To dismiss this as rhetorical or ideological flourishes is to miss the critical point that these serve as the patterns of thinking and the language of discourse of the Cuban state in its interactions both internal and external (Crawford and Ostrom 1995: 583). Whether or not this is believed by those actors (and the same could be said for those serving the interests of the myriad sectors that constitute the “West”), it helps shape their thinking and the routes of their logic and valuation in interaction with others. And this is made clear by the gloss on competitive international insertion (*inserción internacional competitiva*). These are understood as necessary only to the extent it serves the interest of the state—either because it serves as a means of acquiring technology and know-how (a matter of state policy especially after the 1960s for developing states, though with substantially mixed results), or because it can be integrated into internal economic needs (principally job generation or profit to state sector enterprises that control internal economic activity).

## HOW DOES PNDES INFORM APPROACHES TO THE DEVELOPMENT OF THE TOURISM AND PHARMA SECTORS?

If PNDES provides the basis for understanding the structures and valuations of economic planning, then how does one jump from the principles and high concepts of PNDES (and the even more theoretical orientation of the *Conceptualización*) to the parameters around which concrete decisions will be made about targeted sectors? In other words, high concept language is like honey to academic bees but they are (at first blush) irrelevant to the administrators and business people who must convert these high ideas to specific economic decisions through transactions within the internal and in negotiations with external actors. PNDES itself provides at least the start of the answer. It serves to identify those sectors that are to receive special attention (and resources from the state apparatus—though how much is ambiguous). It also serves to provide the basis for exercising discretion. It provides the means for ascertaining value among options, and it determines the objectives toward which all discretionary decisions are to be made. It also provides the language within which these determinations are to be made and defines what is valuable and what may be ignored in the process of decision making. Lastly, all of these together provide the basis for assessment. That is, they provide the basis from which decision makers can be assessed with respect to the “success” of their leadership, measured against the crude algorithms inherent in the PNDES. This is easy to say—and harder to demonstrate. This section considers these notions in the context of Cuba’s tourism and pharma sectors. It first attempts to recast the language of PNDES in algorithmic form. That is, *can one recast PNDES as something like a precise set of instructions that ought to be followed to achieve a desired result?* This exercise produces a crude set of relational equations that might help clarify the way that PNDES elaborates structures of decision making and incorporates valuations (though the values themselves cannot be supplied for the coefficients). It then tests the power of that algorithm against the realities of Cuban efforts in both tourism and pharma sectors. Thus recast, these measures are used to rethink and explain Cuban approaches in both sectors as inher-

ently tied to the normative and values laden framework of PNDES, though with a substantial margin for administrative discretion in that regard.

### Extracting and Restating PNDES as Algorithm

PNDES, along with the *Conceptualización* and the *Lineamientos* of 2011, together provide an invaluable source of information about the way the Cuban Party-State apparatus understands itself and the world in which it operates. Its narratives—sometimes quite opaque and given sometimes to sloganeering—set out in quite logical form the premises that define the conceptual universe that is the constraints of the realities that drive Cuban leadership. The narrative of PNDES is especially useful for the exposition of system of principles that together constitute the totality of the reality from within which the world is seen and understood. It is also useful as a lexicon—providing the reference source for the meaning given to words and concepts. From these, *it is possible to extract value*, the value of principles and concepts, and *map relationships among ordering concepts*. This is not merely a matter of philosophy (even political philosophy). The understanding of the way that Cuban see the world, the way they think, the way that the Cuban elite value options and the quite distinct limits of their vision of the acceptable (and its characterization in relation to the (American) unacceptable, *is essential not merely for the business of economic relations among public and private actors, but also central to the effectiveness of any state to state negotiations among the United States (and others) and Cuba*.

But narrative also masks. The 251 paragraphs and 33 definitions that make up PNDES can be forbidding. And it is unhelpful, in itself, for sorting through how Cuban decision makers would approach any specific issue. That is, PNDES, as narrative, does little to help others understand the way it is important as a means of constraining and guiding the exercise of administrative discretion in the exercise of state power in any specific instance. And yet, PNDES itself suggests a narrative form of algorithm. Its ordered and systemic quality for decision making (as well as for explaining a world ordered in accordance with its basic premises as elaborated more fully in the *Concep-*

*tualización*) suggests a process not merely for understanding the world, but also for making decisions.

Let me attempt to transform the narrative of PNDES into a master algorithm for the exercise of administrative discretion in decision making with respect to resource allocation and choices among the form and targeting of foreign investment.

*1. Core Vision.* PNDES starts with an initial set of framing factors. This Vision Core focuses on the most generalized objectives (components) of central planning and serve as both guide and as normative valuation. In the latter sense, these must be understood as describing the set of highest value objectives of the State and the PCC, to which everything else ought to be bent. These include: (1) Establish core themes for work groups; (2) Diagnosis and determination of qualitative gaps; (3) Establish guiding principles to elaborate development strategies; (4) Identify strategic sectors; (5) Political action to implement core strategies; (6) Establish indicators to evaluate objectives; (7) Set goals for objectives; (8) Determine quantitative development gaps; (9) Create planning systems; (10) Develop budgets for these plans; and (11) Create mechanisms for evaluation and feedback.

This structure of the central planning model offers a sense of the approach of the Cuban state to all issues of economic, social, cultural and international consequence to the utilization of all means of production. It sets the state firmly at the center of a control matrix of every aspect of the life of the nation as necessary for the attainment of development. Just as the 20<sup>th</sup> century produced concepts of total war, so European Marxist vanguard parties view the entirety of society as factors in the production of objectives—in this case development to produce a moderately prosperous society in accordance with the meaning given those terms by the vanguard party. Those meanings, of course, determine value and the mechanics of choosing among alternatives. It is necessary to understand those to get into the minds of administrators exercising discretion at every level of planning in Cuba—especially as it might affect the terms and consequences of inbound investment, and foreign partnerships.

What is clear is that many of the factors identified contain no inherent value. They do not appear to relate to each other in explicit ways, though it is easy enough to develop relationships. What it does suggest is that the Vision embedded in PNDES will be realized—over the longer term—only if each of the eleven (11) tasks are completed. But there is no way to measure success because the objectives are vague. Some of them have been accomplished through PNDES itself, but not all of them. Yet each of them is embedded within the more specific core themes and strategies that serve as the baseline for the implementation of PNDES as well as for the framework within which quite specific determinations of policy choices and approvals of specific projects, partnership's and economic activities are considered. The key here is that the consequences of planning will have a determinative effect on choices (and the exercise of administrative discretion), and that the power to make (and remake) those choices rests with the state. It is not clear the extent to which such determinations are protected against changes that occur after. This sets up the central risk of Cuban policy—there is little protection against changes in policy unless that is built into the terms of the relationship and guaranteed in ways that cannot be interfered with by the state. This fundamental risk is then structured and made manageable (but not eliminated) by the values based decision structures that serves as the heart of PNDES.

At the level of the state and macro planning, then, the core objective of PNDES is to achieve conformity to the PNDES aggregate core vision. That can be understood in the following way:

Vision Success = sum of the eleven objectives

But that does not prove to be very helpful. It is not clear how meeting the objectives is measured. It is not clear how partial success (however measured) will impact the overall assessment. It is not clear what the relationship is between the eleven objectives. While it would be possible to measure, and value these eleven objectives—and assess the progress of the state in meeting them; it is also clear that the objectives were deliberately structured to avoid any quantifiable element. Success, then, will be determined by fiat of the

highest level of the PCC in due course. The only measures of accountability are the objectives themselves—whether they have been attempted and operationalized or not. Beyond that, the internal measures are opaque to outsiders.

2. *Second Order Calculus for Discrete Decision Making.* And yet the more specific determinations guided by PNDES may be easier to measure, or assess. These include Normative Themes, Guiding Principles, Core Strategies and Strategic Economic Sectors. It may be possible to develop a calculus for the exercise of discretion or the value of a policy by understanding the relationship between these factors as follows:

*No positive exercise of discretion may be made unless the sum of:*

$$\text{Values} + \text{Specific Contribution} > 0$$

Where:

1. Values = ([a] [Normative Themes] + [b] [Guiding Principles])
2. Specific Contributions = ([c] [Core Strategies] + [d] [Strategic Economic Sectors])
3. The coefficients a, b, c, and d equal the multiplier factor (that is the weight this factor will be given) in relation to the other variables. That is a determination is itself a subject of discretion but bounded by the qualitative premises of the *Conceptualización* and the gross objectives of the objectives comprising Vision success.
4. The variables have the following meaning: NT= Normative Themes; GP = Guiding Principles; CS = Core Strategies; and SES = Strategic Economic Sector

For discretion to be exercised each of NT, GP, CS and SES must be greater than 0. That is, if any of the basic objective categories has a zero or negative value then positive discretion will not be exercised. Where fewer than all projects considered may be selected, discretion will be exercised in favor of those projects whose overall score is highest. Central to the determination of discretion, then, is a calculation of Values and specific contribution. These in turn require calculation of the variables NT, GP, CS and SES.

*Values: Normative Themes (NT).* Normative Themes are described in PNDES but with no relational valuation to each other.

The contributory value of NT (PNDES ¶ 37) can be calculated as the sum of contributions by normative themes:

NT = Environment + Social impacts + Territorial integrity + Demographic impacts + Infrastructure + External sector + Monetary policy and finance + Productive potential + Defense and internal security.

At its simplest one can assign a value of 1 to each factor that is positively embedded in the decision, 0 where the value is absent, and -1 where the value is negative (e.g., the proposal would have a negative effect on territorial integrity). In that case NT can be any value between 9 and -9. But that calculation assumes the state gives equal value to each of the eleven factors in making every decision. But that cannot be the case. Though PNDES does not elaborate on approaches to valuing these factors (in absolute and relational terms), it is possible to factor that into the calculus. Rewriting the above equation:

NT = a(Environment) + b(Social impacts) + c(Territorial Integrity) + d(Demographic impacts) + e(Infrastructure) + f(External sector) + g(Monetary policy and finance) + h(Productive potential) + i(Defense and internal security).

Where:

1. the coefficients a, b, c, ... i represent a multiplier factor (that is, the weight this factor will be given) in relation to the other variables. This determination is itself a subject of discretion but formally bounded by the qualitative premises of the *Conceptualización* and the gross objectives of the objectives comprising Vision success.
2. Each of the terms are qualitative measures that are not defined with any degree of precision. There will be a large space for administrative discretion respecting the interpretation of the terms and their applicability to specific context.

Yet this does not get to the value of the strength or weakness of the contribution of each of the variables to NT. Thus, for example, it may be necessary to reflect that the social value of a choice is weak but the environmental value of a choice is strong (either positive or negative). To capture that variation, it might be necessary to further refine the equation as follows:

NT = a(x<sub>1</sub> Environment) + b(x<sub>2</sub> Social impacts) + c(x<sub>3</sub> Territorial Integrity) + d(x<sub>4</sub> Demographic impacts) + e(x<sub>5</sub> Infrastructure) + f(x<sub>6</sub> External sector) + g(x<sub>7</sub> Monetary policy and finance) + h(x<sub>8</sub> Productive potential) + i(x<sub>9</sub> Defense and internal security).

Where:

1. the coefficients a, b, c, ... i represent a multiplier factor (that is the weight this factor will be given) in relation to the other variables. This determination is itself a subject of discretion but formally bounded by the qualitative premises of the *Conceptualización* and the gross objectives of the objectives comprising Vision success.
2. The coefficients x<sub>1</sub> ... x<sub>9</sub> represent some percentage contribution strength of that variable.

Adding the x<sub>1</sub> . . . x<sub>9</sub> coefficients may be redundant, however. These coefficients may be better captured by the application of the Guiding Principles to the value of the decision or policy.

The contribution of a project to these core normative themes adds to the value of the project and militates in favor of positive exercise of discretion. Likewise, presenting a project for foreign investment or international cooperation in these terms facilitates discussion in ways that Cuban officials can directly relate to their discretionary choice frameworks.

*Value: Guiding Principles (GP).* The same structures can be applied to the calculation of conformity to or contribution of the decision of policy) to the Guiding Principles.

GP = sum of the twenty-three (23) Guiding Principles (PNDES ¶¶ 14–36):

1. Increase the gross domestic product

2. Protect the public ownership of the fundamental means of production and consolidate the socialist economic and social development model conducive to the efficacious functioning of the state and its SOEs embedded in popular participation in decision making.
  3. Sustainable increases in effectiveness, efficiency, and competitiveness
  4. Contribute to the national defense
  5. Contribute to a climate of security and internal order especially with respect to issues of corruption, external subversion, and other anti-social activities.
  6. Augment and stimulate science, technology and innovation.
  7. Contribute to move toward renewable energy sources
  8. Positive impact on infrastructure (recovery, preservation, modernization, augmentation).
  9. Assure demographic sustainability by attenuating the negative effects of demoraophic realities
  10. Exploit comparative advantages in economic activities especially with respect to international trade.
  11. Preference for identified strategic sectors.
  12. Strive toward agricultural self sufficiency
  13. Strive toward coherence in monetary policies in the service of other state policies.
  14. Increase national savings
  15. Augment and diversify sources of foreign investment and financing but which actively contribute to national development and to ensure the sustainability of foreign debt.
  16. Understand foreign investment as an integral part of strategies for and especially among identified strategic sectors.
  17. Augment and diversify external commerce and international cooperation with the object of increasing its contribution to national and local internal development.
  18. Expand the development of the internal market to better align demand and supply of consumer goods of acceptable quality.
  19. Consolidate the Revolution's accomplishments vis-a-vis health, social welfare, education, culture, sport, recreation, and the security and protection of citizens.
  20. Assure sources of employment that favor jobs in the productive sphere and sustained growth of labor productivity.
  21. Ensure that work constitutes in itself not just a necessity but also the means of personal fulfillment for every citizen.
  22. Strive to achieve the adequate territorial distribution of productive forces to ensure the development of prosperous, ordered and sustainable modern cities, rural and mountainous areas.
  23. Assure the conservation and rational use of natural resources, so that the protection of the environment serves as a factor that contributes to sustainable economic and social development.
- Where:
1. Each of the Guiding principles is assigned a value of 1, 0, -1 (referencing their contribution to value). At its simplest one can assign a value of 1 to each factor that is positively embedded in the decision, 0 where the value is absent, and -1 where the value is negative.
  2. Each is multiplied by a coefficient that equal the multiplier factor (that is the weight this factor will be given) in relation to the other variables. That is a determination is itself a subject of discretion but bounded by the qualitative premises of the *Conceptualización* and the gross objectives comprising Vision success and NT.
  3. Each of the terms are qualitative measures that are not defined with any degree of precision. There will be a large space for administrative discretion respecting the interpretation of the terms and their applicability to specific context.

*Specific Contribution: Core Strategies (CS).* Core strategies consist of six "intimately interwoven and sys-



tematically designed” core strategic themes around which economic planning will be undertaken (§ 44): (1) efficient and socialist government and social integration (§§49–77), (2) transformation and internationalization of production (§§ 78–101), (3) infrastructure development (§§ 102–129), (4) developing human potential through science, technology and innovation (§§ 130–157), (5) development of natural resources and environmental concerns (§§ 158–184), and (6) human development, equality and justice (§§ 185–220).

$$CS = a(\text{ESCGI}) + b(\text{TIP}) + c(\text{ID}) + d(\text{DHP}) + e(\text{DNR}) + f(\text{HDEJ})$$

Where:

- (1)  $CS \neq 0$  or negative value; and
- (2) the coefficients (a . . . f) that equal the multiplier factor (that is the weight this factor will be given) in relation to the other variables. That is a determination is itself a subject of discretion but bounded by the qualitative premises of the *Conceptualización* and the gross objectives comprising Vision success and NT.

This produces the most complex calculus because the six core strategies is itself made up of a smaller number of general objectives and a sometimes substantially greater number of specific goals.

Thus for each category, the value depends on the aggregation of the values of the general and specific objectives, e.g.:

$$\text{ESGSI} = a_{1 \dots n} [\text{general objective}_{1 \dots n}] + b_{1 \dots n} [\text{specific objective}_{1 \dots n}]$$

Where ESGSI = efficient and socialist government and social integration (§§49–77).

The same calculus is necessary for each of the six strategies, and the sum of these sub- calculations then produce an aggregate value for CS

*Specific Contribution: Strategic Economic Sectors (SES).* PNDES is meant to be targeted to a set of eleven (11) Strategic Economic Sectors (§§ 221–251). Activities that are embedded in any one or more SES add positive value, other investments are either neutral or negative value investments. But it is not clear that all SES are valued equally. It is possible

that in context an SES project will have a greater or lesser value than other SES projects.

SES = 0 where the activity or policy makes no contribution to any of the listed SES.

SES > 0 where the activity or policy contributes to one or more SES.

Where:

1. The value of each of the 11 SES is modified by a coefficient equals the multiplier factor (that is the weight this factor will be given) in relation to the other variables. That is a determination is itself a subject of discretion but formally bounded by the qualitative premises of the *Conceptualización* and the gross objectives of the objectives comprising Vision success.
2. Each of the 11 SES represents the sum of the positive, neutral, or negative effect of the activity on each of the general and specific objectives of the SES.
3. Each of the terms are qualitative measures that are not defined with any degree of precision. There will be a large space for administrative discretion respecting the interpretation of the terms and their applicability to specific context. This is particularly relevant in this calculus. Each of the specific and general objectives are ambiguous enough to perhaps flexibility in interpretation of application.

Strategic Economic Sectors are not fixed in stone. They represent a flexible aggregation of industries that appear to maximize value per unit invested. Specific sectors are added or removed by reference to a ten (10) factor formula (§§ 223–232): (1) relative importance of the sector to the economy, (2) the extent of the value added of the sector, (3) the extent to which it contributes positively to balance of payments, (4) the extent to which they enhance both supplier development and value added along the production chain, (5) their ability to generate indigenous jobs, (6) their positive impact on local economies, (7) their connection to innovation and new technologies, (8) the extent to which they can overcome infrastructure challenges, (9) the extent to

which they contribute to national sovereignty and security, and (10) the environmental effects.

Thus, in the event that a discretionary decision or negotiation touches on a non-SES project, the initial issue might be whether the issue can also be added to the SES list. That involves a discretionary decision balancing the ten factors. PNDES, however, leaves it to the discretion of the decision maker with respect to the way that each factor is calculated and valued, and the relative weights each factor receives. Administrative discretion might formally be constrained by the GP; NT and Vision Core, but those are themselves multi-factor aggregations of discretionary determinations.

*3. Putting the equations together.* It is now possible to more rigorously apply PNDES to decisions. PNDES can be seen to define the valuation of factors and then to identify those factors of most relevance for decision making. *The weight of each of these factors, and the application of relative values remains ambiguous*—and subject to administrative and political discretion in individual cases. It must also be emphasized that each of the terms are qualitative measures that are not defined with any degree of precision. There will be a large space for administrative discretion respecting the interpretation of the terms and their applicability to specific context. But the universe of factors and the structures of decision making now become clearer. Even an entire conceptual universe of ambiguous and flexible terms can still serve two important functions. First it illuminates the manner in which the decision maker thinks about the exercise of discretion. Taken together the PNDES describes a method of thinking (factors that are important, those that are ignored, etc.) that is substantially different from those of decision makers in Western governments or enterprises. That in itself is important information. Second, it specifies a basis for attaching value to factors that is critical for negotiation and for understanding the way discretionary decisions may be made.

How might these cumulating determinations help describe the structures of analysis and identify the spaces within which administrative discretion may be exercised? Let us assume that an administrator has

been asked to consider an investment application. The administrator might start by extracting an initial value by calculating SES. If SES is less than or equal to zero, then the administrator might calculate (depending on the value of the proposal relative to the cost in terms of his time and reputation and career advancement) the possibility of adding an SES sector that includes the proposal. Yet that would be an exceptional act and likely one that is referred to a higher level of state. Assuming that SES is greater than 0, the administrator would (1) assess the value of the proposal and (2) determine the approach to negotiation of final terms, on the basis of her calculation of CS. CS produces both an approximation of the value of the proposal generally as well as identify those specific areas (general and specific objectives) of the most relevant strategies that can serve as a baseline for negotiations to maximize the value of the proposal to the Cuban state (and the administrator). She will then test those calculations against GP and NT. Perhaps, in some cases, GP and NT values will inform the coefficients of CT and the way in which SES is ordered as a hierarchy of relative value to the state (in the context of the particular proposal, the place where it is to be located, and the political conditions that the proposal represents). These determinations will likely then be checked or approved by higher level officials (depending on the significance of the proposal to the state) and ultimately checked for political and social coherence (a policy based calculation of NT and GP in the context of maximizing the value added to Vision).

There are significant caveats.

First, none of these calculations will actually be done overtly and formally. Not yet at any rate. But one begins to see the possibilities of constructing algorithms that substantially incorporate these decision and value calculation processes for more consistent assessment. PNDES speaks to the importance of data in the operationalization of its legal, economic, political and societal projects. And yet there is virtually no reference to data, its organization and its use.

Second, the assessments are all laced with discretionary choices. These discretionary choices can, at its limits, substantially subvert any sort of rationality in

the construction and application (formally or informally) of decision matrices. More importantly they can make accountability, monitoring and assessment substantially impossible in any effective way. For the state, the control of discretionary choices in like circumstances, to produce coherence in the calculation of benefit, is implicit in the organization of PNDES, but is wholly absent from its operationalization. Again a more conscious and constrained universe of discretionary possibilities built into algorithms would aid in organizing the calculus in a more consistent way.

Third, the complexity of the formulas inherent in PNDES will prove challenging for any sort of rational application other than at and for the benefit of highest level decision making, and only at the macro level. PNDES lends itself to data driven complex interactions among relational factors. But it lacks a rational way for assigning values either for the coefficients that it has painstakingly identified, or for the variables themselves.

Fourth, the variables identified (and there are a lot of them which is no surprise since the purpose is to organize national markets in a complex society with international connections) in PNDES are inherently relational. Some of them exist in vertical relationships (for examples those that make up NT, GP and especially the six strategies that make up CS). Some of them are arranged in vertical relations (CS and SES cannot contradict GP, and GP must be interpreted in light of the constraints of NT). And yet PNDES does little to suggest the relative values among these—or even a means of calculating the relational values among these in context. The coefficients identify the issue but do not resolve them. In a Leninist State, as in a large multinational corporation, it is essential to structure the calculus of coefficients (once identified within algorithms) as it is to identify the values of the variables themselves.

Fifth, PNDES most egregious gap is in its failure to recognize the algorithmic nature of its construction. Worse, it does little to begin to develop the capacity to substantially quantify all of the calculations that are inherent in the model it itself has elaborated. That creates a contradiction and ultimately will pro-

duce the sort of challenges that tend to produce failures of planning. The ultimate object inherent in PNDES is indeed its character as social credit—in the Chinese sense. The great consequence of PNDES is its recognition that neither law nor regulation will be sufficient as a basis for managing the decisions that in the aggregate are necessary over time to operationalize the Cuba Vision 2030. More importantly, it recognizes the inherent inseparability between social, political and economic objectives that require the management of behaviors at both the macro and micro levels. PNDES develops the framework for such management but not the mechanics through which it can be effectuated. “To understand the shaping of law today (and soft law as well) one must understand social credit. To understand social credit, one must understand the evolving structures of the relationships, in law and politics, of the relationships between states, its masses, and the institutions through which it operates” (Backer 2017).

Sixth, PNDES may better lend itself to treatment as a decision tree rather than as a set of algorithms. That is—PNDES might be better understood as nodal points in decision paths than as instructions grounded in data. And certainly, one could make a case for a decision tree model. The difficulty is that decision tree analysis tends to go toward the consequences or outcomes among choices, and in the PNDES context in a way that lends itself to algorithm. That is, that PNDES is meant to guide the exercise of discretion by projecting possible outcomes, for which a decision tree approach would suit. Yet PNDES may require more—not just mapping outcomes but guiding discretion in a more positive way.

Seventh, the algorithms may apply quite distinctly to planning and to individual decisions on investment projects. Thus it may be necessary to treat as distinct the algorithmic relations that constitute planning at a macro level, and those that are used in making micro decisions (that is to green or red light an individual investment project). PNDES itself conflates the two in sometimes mysterious ways. That may suggest that the flabbiness of conception might creep into and weaken the utility of algorithms built on them. These require data and extensive testing.

In sum, for Cuba, the fundamental choices are made by state functionaries, operating within the government or through SOEs. That fundamental choice is to choose among alternatives or to make choices about the terms of deals (especially with foreigners). PNDES may help explain both why state authorities may make some choices and reject others, but also why they take the positions they do in negotiations (with respect to terms they value and arguments that resonate, and those that don't).

## CONCLUSION

Are Cuba's long and sometimes tedious, jargon filled, central planning ideological conceptualization documents worth reading, and if so to what ends? I have suggested that these documents are worth careful reading. They are keys to understanding the way in which Marxist vanguard parties make meaning. They expose the way in which such vanguards construct the normative universe from within which they understand the world. That is of interest not merely to academics with nothing better to do. It is the central element for unpacking the way in which the vanguard collective mind thinks—and speaks. It provides a dictionary of meaning for words that may sometimes have quite different meaning in Western ideological frameworks. But most important, they serve to unmask the algorithms within which decision-making (and deal-making) is undertaken by these Leninist collectives. To understand the algorithms embedded within the central planning docu-

ments of a Leninist state is to understand the way they approach relationships with outsiders. For enterprises, this serves as an invaluable tool for making deals with the state. For other states, this serves to avoid the usual errors when they assume that all words and concepts that sound the same have the same meaning and are imbued with the same values (including relational values to other principles) everywhere. The Cuban national vision for 2030, and especially its PNDES, when read together with the more theoretical *Conceptualización*, provide a map of both objectives and method for Cuban approaches to order.

But much needs to be done to move from hypothesis and sketch. The hypothesis must be tested against real world decision making, and its predictive potential remains unexplored. More importantly the crude algorithms merely suggest the outline of the decision-making structures inherent in Cuban macro-economic planning. In the end, these may provide little more than a rhetorical show of solidarity with foundational theories of the state, even as they mask the realities of a process that is effectively entirely driven by administrative discretion the parameters of which are linked to personal politics. In a real sense, then, the object may be to determine whether algorithm constrains administrative discretion or whether it merely rationalizes decision making constrained by political rather than economic factors.

## REFERENCES

- Larry Catá Backer, "Central Planning versus Markets Marxism: Their Differences and Consequences for the International Ordering of State, Law, Politics, and Economy," *Connecticut Journal of International Law* 32(1):1–47 (2017). Available at SSRN: <https://ssrn.com/abstract=2819231> or <http://dx.doi.org/10.2139/ssrn.2819231>
- Larry Catá Backer, Transnational Legal Orders and Global Regulatory Networks, Prepared for the International Francqui Symposium Global and Transnational Law Today (May 15, 2017).
- Larry Catá Backer, China's Social Credit Initiative in a Global Context: Introduction and the Problem of Transparency," *Law at the End of the Day* (June 11, 2017), available <http://lcbacker-blog.blogspot.com/2017/06/the-problem-of-transparency.html>.
- Larry Catá Backer, "The Rule of Law, the Chinese Communist Party, and Ideological Campaigns:

- Sange Daibiao (the ‘Three Represents’), Socialist Rule of Law, and Modern Chinese Constitutionalism,” *Transnat'l L. & Contemp. Probs.* 16:29 (2006).
- Larry Catá Backer and Augusto Molina, Cuba and the Construction of Alternative Global Trade Systems: Alba and Free Trade in the Americas, *U. Pa. J. Int'l L.* 31:679 (2010). Available at: <http://scholarship.law.upenn.edu/jil/vol31/iss3/2>
- Johannes Bisshop and Alexander Meeraus, “On the Development of a General Algebraic Modeling System in a Strategic Planning Environment,” *Applications: Part of the Mathematical Programming Study* 20:1–29 (1982).
- Jan M. Broekman and Larry Catá Backer, *Lawyers Making Meaning: The Semiotics of Law in Legal Education II* (Dordrecht: Springer, 2013).
- John M. Bryson, *Strategic Planning for Public and Non Profit Organizations: A Guide for Strengthening and Sustaining Organizational Achievement* (4<sup>th</sup> Ed., Wiley 2011).
- S. Crawford, and Elinor Ostrom, “A Grammar of Institutions.” *American Political Science Review* 89(3): 582–600 (1995).
- Richard E. Feinberg and Richard S. Newfarmer, “Tourism in Cuba: Riding the Wave Toward Sustainable Prosperity,” Latin America Initiative at Brookings, Kimberly Green Latin American and Caribbean Center December, 2016.
- R.H. Hayes, “Strategic Planning—Forward in Reverse,” *Harvard Business Review* 63(6): (1985).
- Bob Jessop, “The governance of complexity and the complexity of governance: preliminary remarks on some problems and limits of economic guidance,” in A. Amin and J. Hausner, eds, *Beyond Markets and Hierarchy: Interactive Governance and Social Complexity*, Cheltenham: Edward Elgar, 111–147, 1997. Preprint version available at <https://bobjessop.org/2013/12/02/the-governance-of-complexity-and-the-complexity-of-governance-preliminary-remarks-on-some-problems-and-limits-of-economic-guidance/>.
- Leszek Kolakowski, *Main Currents of Marxism: The Founders, the Golden Age, the Breakdown* (Norton, 2005 (OUP 1978)).
- Henry Mintzberg, “The Fall and Rise of Strategic Planning,” *Harvard Business Review* 107–114 (Jan.-Feb. 1994).
- Rana Mitter, “The Mystery of China’s Eagerness to Own the Term ‘Democracy,’” South China Morning Post (July 15, 2017). Available <http://www.scmp.com/week-asia/society/article/2102330/mystery-chinas-eagerness-own-term-democracy>.
- Partido Comunista de Cuba. April 18, 2011. VI Congreso del Partido Comunista de Cuba, *Lineamientos de la política económica y social del partido y la Revolución* (aprobado el 18 de abril de 2011). <http://www.scribd.com/doc/55084818/Folleto-Lineamientos-VI-Congreso-Partido-Comunista-de-Cuba>.
- Partido Comunista de Cuba. *Conceptualizing del modelo económico y social Cubano de desarrollo socialista: Plan nacional de desarrollo económico y social hasta 2030: Propuesta de vision de la nación, ejes y sectores estratégicos* (hereafter the Conceptualización or PNDES). Available <http://www.thecpe.org/wp-content/uploads/2016/05/Conceptualizacion-del-modelo-economico-PCC-Cuba-2016.pdf>.
- Frank Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information* (Harvard University Press, 2015).
- S. Procopovicz, “Soviet Russia’s Five Year Plan,” *Annals of Public and Cooperative Economics* 6(1):28–95 (January 1930).
- Manuel Raices, “The Organization of the Cuban Biotechnology Industry: Business Opportunities,” presentation to Pennsylvania State University Students, Havana, Cuba, March 8, 2017.
- Diane Richards, “Coordination and Shared Mental Models.” *American Journal of Political Science* 45(2): 259–276 (2001).
- Oscar Sánchez Serra, “A year later, the 7th Party Congress continues,” *Granma* April 19, 2017,

available <http://en.granma.cu/cuba/2017-04-19/a-year-later-the-7th-party-congress-continues>.

Peter Temin, "Soviet and Nazi Economic Planning in the 1930s," *Economic History Review* 44(4): 573–593 (1991).

Jenö (Eugen) Varga, *Twentieth Century Capitalism* (Moscow: Foreign Languages Publishing House, 1964).