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1 Charting the Triple Interface of Public–Private Partnerships, Global Knowledge Governance, and Sustainable Development Goals

Margaret Chon, Pedro Roffe, and Ahmed Abdel-Latif*

In less than two decades, public–private partnerships (PPPs) have become an essential feature of the global development landscape and a fixation in development discourse and practice. The Sustainable Development Goals (SDGs) affirm their centrality in the implementation of the UN’s 2030 Sustainable Development Agenda (2030 Agenda).¹ However, it is only more recently that PPPs have emerged in intellectual property (IP) domains, primarily in relation to public health.

In this context, this book is the first attempt to have a closer look at PPPs and IP within a more capacious knowledge governance framework, not only in relation to public health but also in connection to other fields such as education, information and communications technologies (ICTs), libraries, agriculture, and climate change. Its chapters explore the relationship among three broad subjects: IP, PPPs, and the 2030 Agenda’s SDGs. Each area by itself would be a major undertaking. Analyzing all three simultaneously might be considered a long and possibly unmanageable reach. Yet it is the premise of this book that understanding the growing impacts at the interface of these three heretofore distinct areas is critically important. As argued recently:

[s]imilar to human rights, SDGs should be taken into account in shaping intellectual property rights, in the process of interpretation and compliance. SDGs today provide the most important contemporary standards of justice and equity in international economic law. . . . Many of their goals cannot be achieved without enhancing the effort, and new tools need to be developed, such as . . . framework rules for the operation of public–private partnerships (PPPs).²

To make the case for a thoughtful (and overdue) treatment of this triple interface, this chapter first canvasses relevant aspects of each of these three topics – IP, PPPs, and the SDGs – and the significance of their growing connections. It then examines more closely each of the “Ps” in PPPs, flagging the many unresolved issues and questions about these types of joint governance arrangements or collaborative partnerships, at the practical,

* This chapter is coauthored by Abdel-Latif in a personal capacity. The views expressed are those of the author and do not necessarily reflect the views of any institution with which he is affiliated.

¹ G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development (October 21, 2015; hereinafter 2030 Agenda) available at <https://sustainabledevelopment.un.org/post2015/transformingourworld>.

² Thomas Cottier, *Embedding Intellectual Property in International Law*, in CURRENT ALLIANCES IN INTERNATIONAL INTELLECTUAL PROPERTY LAWMAKING: THE EMERGENCE AND IMPACT OF MEGA-REGIONALS 33 (Pedro Roffe and Xavier Seuba eds. 2017).

policy, and conceptual levels. Finally, it situates each of the other chapters, providing brief synopses and locating their diverse perspectives within an emerging conceptual map of the triple interface.

I Unwinding the Triple Interface

IP systems and legal regimes are experiencing enormous challenges and change in a period that some are starting to call the fourth Industrial Revolution.³ Many converging factors are forming this proverbial perfect storm. These include the acceleration of technological development overall, the appearance of “disruptive” business models,⁴ the manifestation of wholly new technological realms such as artificial intelligence, block chain technology, the so-called Internet of things, nanotechnology, robotics, and analytics driven by “big data,” as well as digitally driven developments in biology and the life sciences. This current technological lunge is taking place parallel with the rapid and controversial expansion of core functions of IP, from incentive to commodity to asset,⁵ combined with numerous challenges to the multilateral IP legal regime by a burgeoning number of bilateral, mega-regional, and plurilateral treaties.⁶

In addition, IP must cope with the rapid emergence of hybrid forms of governance, which involve not only agreements and actions coordinated among states but also among multi-stakeholder partnerships within transnational legal frameworks. These partnerships among intergovernmental organizations and/or their member states with the private sector – whether nonprofit or for-profit – are now rampant and embedded within the global IP landscape. The historical and too often still prevailing attitude of IP’s “splendid isolation”⁷ seems increasingly obsolete in this era characterized by extreme technological development, rapid globalization, hybrid governance arrangements, and cross-cutting regime linkages.

³ See generally Klaus Schwab, *THE FOURTH INDUSTRIAL REVOLUTION* (2016), available at www.weforum.org/about/the-fourth-industrial-revolution-by-klaus-schwab.

⁴ The term “disruptive innovation” has evolved in different directions. See, e.g., Clayton M. Christensen & Derek van Bever, *The Capitalist’s Dilemma*, 92 HARV. BUS. REV. 61, 62 (Jun. 2014) (“The seminal concepts of *disruptive* and *sustaining* innovations were developed . . . studying competition among companies. They relate to the process by which innovations become dominant in established markets and new entrants challenge incumbents. The focus of this article, however, is the *outcome* of innovations – their impact on growth.”).

⁵ Rochelle Cooper Dreyfuss & Susy Frankel, *From Incentive to Commodity to Asset: How International Law is Reconceptualizing Intellectual Property*, 36 MICH. J. INT’L L. 557, 560 (2015); see also Cottier, *supra* note 2, at 22 (“Despite legal justification by the needs of innovation and consumer welfare, intellectual property protection is in reality as much motivated by market segmentation and the promotion and protection of investment. These motives have increasingly influenced the application and interpretation of intellectual property rights.”).

⁶ See generally, Pedro Roffe & Xavier Seuba eds., *Current Alliances in International Intellectual Property Lawmaking: The Emergence and Impact of Mega-Regionals 2017* (Int’l Ctr. for Trade & Sustainable Dev. (ICTSD) & Ctr. for Int’l Intell. Prop. Studies (CEIPI), Ser. No. 4).

⁷ Cottier, *supra* note 2, at 23 (“IPRs can no longer be dealt with in splendid isolation, but need to be construed and applied in the general context of law. . . . It is most difficult under the auspices of public international law – thus on the level where harnessing globalisation and effective checks and balances are most needed. The lack of a constitutional framework and the fragmentation of international law are major impediments in addressing balancing across different agreements.”); cf. Graeme B. Dinwoodie & Rochelle C. Dreyfuss, *A NEOFEDERALIST VISION OF TRIPS: THE RESILIENCE OF THE INTERNATIONAL INTELLECTUAL PROPERTY REGIME* (2012).

More generally, the growing involvement of multiple stakeholders across public and private sectors in the form of PPPs and other multi-stakeholder partnerships illustrates the rise of more complex global governance dynamics⁸ where global governance is:

First, ... deliberately associated with globalization. ... Second, ... an ongoing conceptual and descriptive enterprise ... Third, ... enunciated against the backdrop of a perceived thinning of state sovereignty and *the emergence of multivalent non-state or sub-state entities and new networks of actors on the global stage that, together, have assumed the nature of disaggregated sovereignty*. ... Fourth, unfolds more in the sense of a concerted horizontal interaction of actors at the global level without the necessity of an overarching hierarchical authority.⁹

The discernible pivot toward PPPs in global governance generally can be traced to several factors. At a time when traditional sources of public funding are under strain, PPPs offer possible synergies among partners – leveraging their talents, technologies, resources, expertise, and convening power. These partnerships also respond to the current realities of the global development system, which has moved to frameworks “beyond aid” and is experiencing challenges in development funding, including overseas development assistance.¹⁰ In short, PPPs can provide significant means of implementation for addressing development challenges not adequately covered by existing institutional arrangements, which may be constrained by finances, mission, or reach.

The partners within these global governance arrangements in turn impact global *knowledge governance*, whether by encouraging innovation, building innovation capacity,

⁸ Gráinne de Búrca, *New Governance and Experimentalism: An Introduction*, 210 WISC. L. REV. 232 (2011); Benedict Kingsbury, Nico Krisch, & Richard B. Stewart, *The Emergence of Global Administrative Law*, 68 L. CONTEMP. PROB. 15, 20 (2005). These transnational legal orders or various forms of legal pluralism are characterized by “informal arrangements developed by ad hoc coalitions of powerful states and transnational governance networks [that] give rise to a new informality in governance.” A. Claire Cutler, *Legal Pluralism as the “Common Sense” of Transnational Capitalism*, 3 *Oñati Socio-legal Series* 719, 725 (2013), available at <http://ssrn.com/abstract=2327501>.

⁹ Chidi Oguamanam, *INTELLECTUAL PROPERTY IN GLOBAL GOVERNANCE: A DEVELOPMENT QUESTION* 27–28 (2012) (emphasis added) (“Fifth, of necessity and logic, the tensions ... implicated in globalization also unravel in global governance. Finally, like globalization, global governance cannot be wished away.”) More recently, global governance has been summarized as “increasingly characterized by flexible structures, greater tolerance for informality, and, most strikingly, an openness to public–private partnerships and an increasingly active role for a wide range of nonstate actors. While the embrace of nonstate actors is not uniform – the governance of global trade differs markedly on this score from the governance of the global environment, for instance – many international regimes now feature substantial participation by private actors. In short, traditional multilateralism remains alive and well[, but] multilateral governance is increasingly supplemented, and in some cases even supplanted, by *multi-stakeholder* governance.” Kal Raustiala, *Public Power and Private Stakeholders* (original emphasis), UCLA School of Law, Public Law Research Paper No. 17–26 (Aug. 21, 2017), available at <https://ssrn.com/abstract=3023598>.

¹⁰ Jomo Kwame Sundaram, Anis Chowdhury, Krishnan Sharma, & Daniel Platz, *Public–Private Partnerships and the 2030 Agenda for Sustainable Development: Fit for Purpose?* 1 (UN Dept. of Econ. & Soc. Affairs, DESA Working Paper No. 148, ST/ESA/2016/DWP/148, February 2016) (“The Addis Ababa Action Agenda (AAAA) of the recently concluded Third International Conference on Financing for Development (Addis Ababa, 13–16 July 2015) recognizes that ‘both public and private investment have key roles to play in infrastructure financing, including through (...) public private partnerships’ ... However, the AAAA also highlights the need to ‘build capacity to enter into PPPs, including as regards planning, contract negotiation, management, accounting and budgeting for contingent liabilities.’ It further stresses the need to ‘share risks and reward fairly, include clear accountability mechanisms and meet social and environmental standards’”).

engaging in technology transfer, or otherwise ensuring dissemination and diffusion of the results of innovation across borders. Taken together, these important activities are referred to here as *knowledge governance* or *innovation activities*. PPPs often contend with the IP-intensive nature of these innovation activities.

Within knowledge economies, especially within IP-intensive industries, high uncertainty, risk, and cost are often associated with developing complex innovations, whether for industrialized or developing country sectors – thus PPPs may be a response to particular market failures, for example, in the area of poverty-related neglected diseases (PRNDs).¹¹ Moreover, the public sector may lack sufficient resources to provide full support for innovation activities – thus PPPs may also address insufficient government capacity and/or support for the production and dissemination of public goods, including many key innovation activities related to sustainable development.¹² Additionally, knowledge governance includes the growing participation of nonstate actors such as nongovernmental organizations (NGOs) or nonprofit organizations (NPOs), which may be primarily mission-driven rather than profit-driven. These newer stakeholders encourage innovation activities and knowledge governance goals traditionally associated with the public sector and the public interest. And the increasingly complex nature of knowledge production and sharing means that diverse partners in global collaborative networks can be essential to productive cross-border innovation activities.

But as part of a global innovation picture, IP-related partnerships are no longer narrowly confined to the research and development (R&D) of new technologies, nor to the development of national or local innovation capacities, nor even to technology transfer across borders. These partnerships also directly and indirectly impact myriad areas involved in the production and delivery of many global public goods¹³ crucial for human flourishing and global sustainable development,¹⁴ such as agriculture and food security, climate change adaptation and mitigation, knowledge provision through ICTs, and public health through the widespread dissemination of pharmaceuticals and vaccines. Thus, PPPs involved in innovation activities may address – while perhaps also simultaneously contributing to – the immense regulatory coordination issues inherent in the production and distribution of global public goods.¹⁵

The rise of cross-sector or multi-stakeholder partnerships such as PPPs is especially notable in the realm of global health, but these newer hybrid institutions have also

¹¹ Poverty-related neglected diseases are sometimes alternatively referred to as neglected diseases or neglected tropical diseases.

¹² For a succinct summary of the distinction in economic literature between public goods and private goods, see Brett M. Frischmann, *INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES* 24–49 (2012).

¹³ See generally *GLOBAL PUBLIC GOODS: INTERNATIONAL COOPERATION IN THE 21ST CENTURY* (Inge Kaul et al. eds., 1999); *PROVIDING GLOBAL PUBLIC GOODS: MANAGING GLOBALIZATION* (Inge Kaul et al. eds. 2003).

¹⁴ The Brundtland Report defined sustainable development as “development that meets the needs of the present without compromising future generations to meet their own needs.” *UN WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE* (1987). In doing so, it emphasized a “much greater recognition of the interdependence of environmental, social and economic systems.” Norichika Kanie, Steven Bernstein, Frank Biermann, & Peter M. Haas, *Introduction: Global Governance Through Goal-Setting, in GOVERNING THROUGH GOALS: SUSTAINABLE DEVELOPMENT GOALS AS GOVERNANCE INNOVATION* 1, 9 (Norichika Kanie & Frank Biermann eds., 2017).

¹⁵ Oguamanam, *supra* note 9, at 133–35 (discussing interventions of PPPs in the context of agricultural development and food security).

emerged decisively in other areas. Multilateral organizations have been increasingly relying on partnerships to tackle a number of issues and challenges they are facing. In the UN context, the World Health Organization (WHO) has been involved in the establishment of several PPPs to tackle communicable diseases such as malaria and tuberculosis (TB), for instance.¹⁶ The World Intellectual Property Organization (WIPO) is aligning some of its strategic goals and activities within the institutional frameworks of PPPs.¹⁷ And the UN Framework Convention on Climate Change has recognized the role of PPPs for purposes of encouraging technology transfer.¹⁸ Outside of the UN system, other intergovernmental organizations (INGOs) and individual member states have multiple initiatives involving PPPs for development.¹⁹ Additional stakeholders include philanthropic organizations, which also contribute to this trend by encouraging the formation of PPPs for purposes of product development as well as distribution of drugs for PRNDs and vaccines; in some cases, their budgets rival or even exceed those available in the public sector. As this book's chapters document and discuss, PPPs have a number of social purposes, including but not limited to capacity-building, technological learning, and technology sharing – and even the promotion of human rights – within global knowledge governance.²⁰

PPP's have become an important feature of global regimes shaping sustainable development goals set forth in the 2030 Agenda and its seventeen accompanying SDGs.²¹ As described in some chapters in this book, the role of partnerships had gained tremendous prominence from preparatory work undertaken in connection with the World Summit on Sustainable Development (WSSD), which took place in Johannesburg in 2002. At this conference, two hundred partnerships were launched as a so-called Type II outcome of this multilateral conference – a historic moment that is widely seen as ushering in the current era of development PPPs.²² Commentators observe that “[j]ust as the [1992 United Nations Conference on Environment and Development, also known as the] Rio Conference was as much about the legitimizing of NGOs in global governance as it was about the environment, Johannesburg was about the legitimacy of the role of business in development.”²³ Since then, the role of the private sector (whether for-profit or non-profit) in development-oriented activities has expanded enormously.

¹⁶ See Frederick H. Abbott, Chapter 2, *infra*; Estaban Burrone, Chapter 5, *infra*.

¹⁷ See Anatole Krattiger et al., Chapter 3, *infra*; Katy M. Graef et al., Chapter 4, *infra*; Jens Bammel, Chapter 7, *infra*; Sara Bannerman, Chapter 8, *infra*; Susan Isiko Štrba, Chapter 9, *infra*; and Ahmed Abdel-Latif, Chapter 11, *infra*.

¹⁸ See Joshua D. Samoff & Margaret Chon, Chapter 12, *infra*; Aysem Mert & Philipp Pattberg, Chapter 13, *infra*.

¹⁹ See Hilde Stevens & Isabelle Huys, Chapter 6, *infra*; Melissa Levine, Chapter 10, *infra*; Irene Calboli & Delphine Marie-Vivien, Chapter 14, *infra*; and David J. Maurrasse, Chapter 16, *infra*.

²⁰ See Padmashree Gehl Sampath, Chapter 15, *infra*; Chidi Oguamanam & Jeremy De Beer, Chapter 17, *infra*; and Peter K. Yu, Chapter 18, *infra*.

²¹ 2030 Agenda, *supra* note 1.

²² Kanie et al., *supra* note 14 at 9; Felix Dodds, David Donoghue, & Jimena Leiva Roesch, NEGOTIATING THE SUSTAINABLE DEVELOPMENT GOALS: A TRANSFORMATIONAL AGENDA FOR AN INSECURE WORLD 142–43 (2017); Benedicte Bull, *Public–Private Partnerships: The United Nations Experience 480*, in INTERNATIONAL HANDBOOK ON PUBLIC–PRIVATE PARTNERSHIPS (Graeme A. Hodge, Carsten Greve, & Anthony E. Boardman eds., 2010).

²³ Benedicte Bull & Desmond McNeill, DEVELOPMENT ISSUES IN GLOBAL GOVERNANCE: PUBLIC–PRIVATE PARTNERSHIPS AND MARKET MULTILATERALISM 10 (2007) (quoting Zadek).

The UN also acknowledged and endorsed the importance of partnerships in its Millennium Development Goals (MDGs), in effect from 2000 to 2015.²⁴ Unlike the predecessor MDGs, which were formed rather quickly within a relatively closed process,²⁵ the current SDGs are the result of extensive input

[t]hroughout 2012 and 2013, [in which] the United Nations facilitated what seemed like the first exercise in global participatory democracy, organizing fifty-plus country consultations, multiple global thematic consultations, and a worldwide online citizen survey – all of which were accompanied by numerous parallel NGO, expert, and state initiatives. Likewise, the General Assembly took seriously its deliberative task . . .

The open nature of the process also permitted civil society organizations, UN agencies, and private corporations to engage at multiple points and stages in the drafting. A staggering range of diverse interests were promoted and defended by these actors.²⁶

The relatively participatory and open nature of this deliberative process has several consequences. One of these is the inclusion of international human rights measures, which is a significant evolution from the previous MDGs; another is the disruption of the MDG's distinction between developed and developing countries.²⁷ Broader stakeholder involvement also resulted in a proliferation of development metrics.²⁸ The end result is a surprisingly broad array of goals, targets, and indicators: 17 current goals (as opposed to 10 MDGs), 169 current targets (compared to 18, later expanded to 21, under the MDGs), and 232 current indicators (compared to 48, later expanded to 60, under the MDGs).²⁹

Thus, the SDGs encompass a much broader and certainly much more detailed set of activities related to sustainable development, including the production of key global public goods impacted by IP and knowledge governance. They give global governance considerably more content, albeit in the language of goal-setting rather than norm-setting.³⁰ This decisive turn toward goals, targets, and indicators as benchmarks of progress toward sustainable development in turn raises profound questions of measurement, monitoring, and evaluation – all major topics beyond the scope of this book.³¹ Many of the book's chapters do, however, seek to achieve a better understanding of

²⁴ MDG 8: Develop a Global Partnership for Development, UN Dep't of Econ. and Soc. Affairs, 2017, available at www.un.org/millenniumgoals/global.shtml.

²⁵ Ved P. Nanda, *The Journey from the Millennium Development Goals to the Sustainable Development Goals*, 44 DENV. J. INT'L L. & POL'Y 389, 398 (2016).

²⁶ Malcolm Langford, *Lost in Transformation? The Politics of the Sustainable Development Goals*, 30 ETHICS & INT'L AFF., 167, 170–71 (2016); Kanie, et al., *supra* note 16 at 3, 16–17.

²⁷ Stephen Browne, SUSTAINABLE DEVELOPMENT GOALS AND UN GOAL-SETTING 138–54 (2017) (“This larger movement away from a uni-directional transfer of development aid (from so-called ‘developed’ to ‘developing’ sectors) is also reflected in the emphasis on individual state accountability (of both developed and developing states) for the achievement of the SDGs”).

²⁸ *Id.* at 171.

²⁹ For MDGs, see *Millennium Indicators*, UN, available at <https://millenniumindicators.un.org/unsd/mi/pdf/mdglist.pdf>. The total number of SDG indicators is 244, but some of those are repeated under several targets. See *SDG Indicators*, UN DEP'T OF ECON. & SOC. AFF., available at <https://unstats.un.org/sdgs/indicators/indicators-list/>. See also UN, Sustainable Development Report 2017, available at <https://unstats.un.org/sdgs/files/report/2017/TheSustainableDevelopmentGoalsReport2017.pdf>.

³⁰ Kanie et al., *supra* note 16 at 1–2.

³¹ Browne, *supra* note 27, at 143–49; see generally POVERTY AND THE MILLENNIUM DEVELOPMENT GOALS (Alberto D. Cimadamore, Gabriele Koehler, & Thomas Pogge eds., 2016).

**Box 1.1. UN Sustainable Development Goal 17³²
Strengthen the means of implementation and revitalize the global partnership
for sustainable development.**

[TARGETS:] Multi-stakeholder partnerships

- 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology, and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries
- 17.17 Encourage and promote effective public, public–private and civil society partnerships, building on the experience and resourcing strategies of partnerships

effective implementation, by discerning the characteristics of PPPs associated with constructive progress toward the goals.

Of key importance to this book, SDG 17 proposes to “[s]trengthen the means of implementation and revitalize the global partnership for sustainable development.” (See Box 1.1 for the key relevant target and accompanying indicators.) This seventeenth goal is viewed as a cross-cutting goal, which encourages partnerships as a primary if not exclusive approach toward implementation of all the other sixteen goals. Several of SDG 17’s targets are grouped under the rubric of “Technology,” including a target to “[e]nhance North-South, South-South and triangular regional and international cooperation on and *access to science, technology and innovation and enhance knowledge sharing* on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.”³³

The dynamics underlying the simultaneous emergence of partnerships for sustainable development and for knowledge governance can be attributed in part to the powerful need for linkages across different domains to effectuate development goals, and particularly innovation-related development goals. This is very apparent in the global fight against communicable diseases, which do not recognize borders. Partnerships could be described as “regime-straddling” because they cut across distinct development policy areas with their accompanying and typically siloed legal regimes, as well as across public and private sectors.³⁴

Rather than treating each development issue (e.g., global health) as a self-contained problem, PPPs and other forms of multi-stakeholder governance anticipate that more inclusive collaboration, interdisciplinary cooperation, and multifaceted approaches are necessary to tackle complex, cross-border issues. The emphasis in the SDGs on the interdependence and interconnectedness of problems – that is, “how systems are coupled

³² SDG 17, *supra* note 34.

³³ SDG 17: Revitalize the global partnership for sustainable development (emphasis added), UN, available at www.un.org/sustainabledevelopment/globalpartnerships/.

³⁴ Margaret Chon, *PPP in Global IP (Public–Private Partnerships in Global Intellectual Property)*, in *METHODS AND PERSPECTIVES IN INTELLECTUAL PROPERTY* 296 (Graeme B. Dinwoodie ed., 2013). Cf. Laurence R. Helfer, *Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking*, 29 *YALE J. INT’L L.* 1 (2004).

and the need for integrative policies”³⁵ – is another key difference between the prior MDGs and the current SDGs.³⁶ PPPs are situated across different disciplines, sectors, and regimes, including IP legal regimes. Regime straddling requires new and possibly out-of-the-box forms of governance disciplines and mechanisms, whether through management choices (in the private sector) or regulatory policies (in the public sector). This is all the more critical because the new benchmarks for progress on the SDGs are accompanied by very few binding commitments, not to mention “specific responsibilities, obligations, or associated compliance mechanisms.”³⁷

The relationship of PPPs to global governance, whether or not in the context of the SDGs, can be viewed along two or even three different dimensions: partnerships require some type of effective internal governance or management to coordinate the differing approaches of partners internally, and they also require mechanisms to interface with any external stakeholders within their immediate networks. Finally, individual PPPs are stakeholders themselves within decentralized governance models; as such, they necessarily contend with both national and multilateral funding and regulatory institutions. The interactions of the various actors, whether partners or stakeholders, are expected to result in specified outcomes, or goals, in the case of the SDGs.

Especially relevant to knowledge governance activities, the partnerships envisioned through SDG 17 are tied to the promise of greater innovation for sustainable development. SDG 9 directly addresses this linkage (“Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”) with its accompanying targets.³⁸ As noted earlier, the early harbingers of this connection between sustainable development and IP were apparent in the global health policy space, which had been highly polarized because of differential access to treatment for global communicable diseases such as HIV/AIDs. Partners within public health-oriented PPPs are in the position to act instrumentally through their deployment of tangible and intangible proprietary rights for non-commercial ends.³⁹ These partners (often NGOs or NPOs) sometimes leverage IP for social mission either defensively (“to preclude commercial use of protected materials”) or offensively (“to promote non-commercial creative exchange and adaptation”), as Antony Taubman observes, and “this is the essence of IP management in public–private partnerships.”⁴⁰ A few of the SDGs reflect explicit affiliations

³⁵ *Id.* at 14.

³⁶ Kanie et al., *supra* note 16 at 10–11.

³⁷ Kanie et al., *supra* note 16 at 18; *see also* Oran R. Young, Conceptualization: Goal-Setting as a Strategy for Earth System Governance, in *GOVERNING THROUGH GOALS: SUSTAINABLE DEVELOPMENT GOALS AS GOVERNANCE INNOVATION* 31, 35–37 (Norichika Kanie and Frank Biermann eds., 2017) (describing pitfalls of a goal-setting approach to governance).

³⁸ SDG 9: Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation, UN, *available at* <https://sustainabledevelopment.un.org/sdg9>.

³⁹ Chon, *supra* note 35, at 284; *see also* Steiner Andreson & Masahiko Iguchi, *Lessons from the Health-Related Millennium Development Goals*, in *GOVERNING THROUGH GOALS: SUSTAINABLE DEVELOPMENT GOALS AS GOVERNANCE INNOVATION* 165, 175–78 (Norichika Kanie & Frank Biermann eds., 2017) (outlining the achievements and criticisms of the GAVI Alliance).

⁴⁰ Antony Taubman, *A Typology of Intellectual Property Management for Public Health Innovation and Access: Design Considerations for Policymakers*, 4 *THE OPEN AIDS J.* 1, 12 (2010) (also discussing open innovation, open source, commons-based peer production and distributed innovation in drug development).

between IP and sustainable development;⁴¹ many more of the connections between IP and the SDGs, however, are implicit.

While the SDGs have been sparsely analyzed so far, the rise of development partnerships has not gone unnoticed. Various critiques of what has been called “market multilateralism”⁴² have articulated concerns about the financing of PPPs – whether the concern is with the defunding of public sector development, the lack of national capacity to effectively oversee transparent and efficient financing of PPPs, or the possibly self-interested priorities of the private sector.⁴³ Within multilateral institutions tasked with global knowledge governance, these add to long-standing concerns about possible multilateral priority-setting through funding influences by the private sector⁴⁴ as well as over-reliance on market mechanisms to optimize social welfare through innovation.⁴⁵ Observers of collaborative innovation state that while:

increasing numbers of ‘wicked problems,’ which cannot be solved by standard solutions or by spending more money, call[] for innovative solutions. . . . [including] multi-actor collaboration in spurring innovation relating to public policies, organizations[,] and services . . . [,] many things can go wrong in the contingent process of networking, collaboration[,] and innovation and the precarious links between them. As such, some kind of innovation management is required in order to remove barriers, enhance drivers[,] and keep the process of collaborative innovation on track.⁴⁶

Some observers voice skepticism about the ability of the SDGs to overcome deepening structural inequalities both within and across countries.⁴⁷ However, the current reality is that the SDGs represent part of a shift in the approach to development and development assistance, to emphasize greater private sector involvement (both nonprofit and

⁴¹ SDG Target 3b, for example, states: “Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.” See generally INTELLECTUAL PROPERTY AND INTERNATIONAL TRADE: THE TRIPS AGREEMENT (Carlos M. Correa & Abdulqawi A. Yusuf, eds., 2016).

⁴² Bull & McNeill, *supra* note 25.

⁴³ See Sundaram et al., *supra* note 12, at 12–19; María José Romero, WHAT LIES BENEATH? A CRITICAL ASSESSMENT OF PPPS AND THEIR IMPACT ON SUSTAINABLE DEVELOPMENT (2016); Manuel F. Montes, *Public-Private Partnerships as the Answer . . . What was the Question?*, Inter Press Service 4 (Sep. 26 2017); Civil Society Reflection Group, *Spotlight on Sustainable Development 2017: Reclaiming Policies for the Public* (Report of the Reflection Group on the 2030 Agenda for Sustainable Development 2017) available at www.2030spotlight.org/sites/default/files/download/spotlight_170626_final_web.pdf.

⁴⁴ Cf. Carolyn Deere Birkbeck, THE WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO): A REFERENCE GUIDE 184–85 (2016); cf. Carolyn Deere, *The Politics of Intellectual Property Reform in Developing Countries: The Relevance of the World Intellectual Property Organization*, in THE DEVELOPMENT AGENDA: GLOBAL INTELLECTUAL PROPERTY AND DEVELOPING COUNTRIES 111, 121–22 (Neil Netanel ed., 2008).

⁴⁵ Keith E. Maskus & Jerome H. Reichman, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, in INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME 3 (2005).

⁴⁶ Jacob Torfing, *Collaborative Innovation in the Public Sector*, in HANDBOOK OF INNOVATION IN THE PUBLIC SERVICES 301 (2013) (emphasis added).

⁴⁷ Gillian MacNaughton, *Vertical Inequalities: Are the SDGs and Human Rights up to the Challenges?*, 8 INT’L J. HUM. RTS., 1050 (2017); see also Cimadamore, et al., *supra* note 33.

for-profit) and less reliance on overseas development assistance.⁴⁸ They are part and parcel of the trend in some countries towards shrinking the state and expanding the market. This movement in turn has major implications for IP regimes, whether national and international, which provide the basic rules and flexibilities for the deployment of market-based IP rights.

These larger trends are also accompanied by a greater emphasis in the SDGs on state responsibility for ensuring the human rights and other structural pre-requisites for successful development.⁴⁹ SDG 16, for example, declares that states should “[p]romote peaceful and inclusive societies for sustainable development, provide access to justice for all[,] and build effective, accountable and inclusive institutions at all levels.”⁵⁰ This goal foregrounds the question of the kinds of knowledge governance policies that will contribute to this overall push towards just societies. As many IP scholars have argued elsewhere, the human rights and human development frameworks, among others, should guide global knowledge governance.⁵¹

How IP regimes participate in and are impacted by this multi-stakeholder governance approach within transnational legal ordering is the primary focus of this book. While governed by analytics such as goals, targets, and indicators, the SDGs also normatively represent “institutional cosmopolitanism”⁵² whereby the

[d]eveloped states and their citizens recognize their own contributions to global harm: for example, excessive consumption, secretive financial regimes, and harsh migration policies. Yet the approach the [SDGs] take is preventative rather than remedial. The root causes are identified in global structures and are to be tackled at the source. Some universal targets are also grounded instrumentally in the idea of global public goods. Global action to preserve and promote certain goods – such as the environment, health, economic growth, safe and secure migration – will benefit the citizens of all states.⁵³

⁴⁸ See Sundaram et al., *supra* note 12, at 12–19.

⁴⁹ Langford, *supra* note 28, at 172 (“The SDGs thus recognize explicitly that progress on development will require internal and domestic institutional reform. By way of example, the target on enhanced foreign aid in Goal 17 is now preceded by a target on improved domestic tax and revenue collection. Legally, the human rights movement has demanded greater coherence between development policy and human rights treaties. This was acknowledged by states in the 2012 Rio Declaration, which set out the framework for drafting the agenda. The upshot is that international human rights law emerged as an important source of inspiration for new targets.”)

⁵⁰ SDG 16: Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for all and Build Effective, Accountable and Inclusive Institutions at all Levels, UN (2017) available at <https://sustainabledevelopment.un.org/sdg16>. See generally Ingo Keilitz, *The Trouble with Justice in the United Nations Sustainable Development Goals*, 7 WM. & MARY POL’Y REV. 1–30 (2016).

⁵¹ See, e.g., Laurence R. Helfer, *Toward a Human Rights Framework for Intellectual Property*, 40 U.C. DAVIS L. REV. 971 (2007), available at <https://ssrn.com/abstract=891303>; J. Janewa Osei-Tutu, *Human Development as a Core Objective of Global Intellectual Property*, 105 KENTUCKY L.J. 1 (2016), available at <https://ssrn.com/abstract=2896342>; Brett M. Frischmann, *Capabilities, Spillovers, and Intellectual Progress: Toward a Human Flourishing Theory for Intellectual Property*, CARDOZO LEGAL STUD. RES. PAPER NO. 442 (Sep. 23, 2014), available at <https://ssrn.com/abstract=2500196>; Aura Bertoni, *Research and “Development as Freedom” – Improving Democracy and Effectiveness in Pharmaceutical Innovation for Neglected Tropical Diseases*, 43 IIC: INT’L REV. OF INDUS. PROP. AND COPYRIGHT L. 771–797, (Jan. 2012); Madhavi Sunder, *From Goods to a GOOD LIFE: INTELLECTUAL PROPERTY AND GLOBAL JUSTICE* (2012).

⁵² Langford, *supra* note 28, at 172.

⁵³ *Id.*

Addressing the triple interface is certainly an ambitious scope. But recognizing the current role of IP in its movement from “splendid isolation” toward “institutional cosmopolitanism” is not only extremely timely but also essential to ensuring better knowledge governance management and policy decisions. Recognition, however, is just the first step. The next section of this chapter raises some of the conceptual challenges associated with a closer look at the interface.

II The Uncharted Territory: “Ps” in PPPs

This section grapples with the many omissions and refractions in our understanding of the PPPs that are tasked to implement the SDGs. Given the extraordinary reach of PPPs, it is indeed surprising how few systematic analyses or assessments exist of their impacts, outcomes, and outputs. As a UNDESA Working Paper recently pointed out, even the basic definitions and contours of development PPPs are without broad consensus.⁵⁴ One definition describes PPPs of a transnational character generally as:

institutionalized cooperative relationships between public actors (both governments and international organizations) and private actors beyond the nation-state for governance purposes. By governance purposes, we mean the making and implementation of norms and rules for the provision of goods and services that are considered to be binding by [these actors].⁵⁵

While this loosely fits many of the PPPs described in this book, PPPs are rapidly evolving hybrid institutions of global governance; their characteristics vary from partnership to partnership and from sector to sector. It is difficult to draw general conclusions about them, perhaps because they are ad hoc and flexible by design. PPPs are interventions that are unlike either market or hierarchy, and that is indeed one reason for their proliferation.

Each of the three “Ps” in PPPs (public, private, and partnership) have unresolved definitional and functional boundaries, with often intertwined descriptive and normative dimensions. They raise many questions of first impression or first principles. To begin with a foundational (and contested) question, how does (or should) the “P” representing the public – whether national governments or INGOs – participate as a “partner”?⁵⁶ No longer do states have exclusive power over norm-setting, norm interpretation, or even

⁵⁴ Sundaram et al., *supra* note 12, at annex 1.

⁵⁵ Tanja A. Börzel and Thomas Risse, *Public–Private Partnerships: Effective and Legitimate Tools of Transnational Governance?*, in *COMPLEX SOVEREIGNTY: RECONSTITUTING POLITICAL AUTHORITY IN THE TWENTY-FIRST CENTURY* 195, 196 (Edgar Grande & Louis W. Pauly eds., 2005). See also Marco Schäferhoff, Sabine Campe, and Christopher Kaan, *Transnational Public–Private Partnerships in International Relations: Making Sense of Concepts, Research Frameworks, and Results*, 11 *INTERNATIONAL STUDIES REV.* 451, 455 (2009) (defining “transnational PPPs as institutionalized transboundary interactions between public and private actors, which aim at the provision of collective goods.”). This volume does not address PPPs within primarily domestic contexts even if they have impacts beyond borders. See, e.g., Susan Ginsburg & Ann Davis, *THE SOURCEBOOK OF PUBLIC–PRIVATE PARTNERSHIPS FOR SECURITY AND RESILIENCE 2018: A COMPENDIUM OF LAWS AND POLICY DOCUMENTS* (ABA Publishing 2018).

⁵⁶ Economic Commission for Europe, Committee on Economic Cooperation and Integration, *Draft Guiding Principles on Good Governance in People-First Public–Private Partnerships for the UN Sustainable Development Goals*, ECE/CECI/PPP/2016/CRP.1 (Oct. 19, 2016).

norm implementation. As a consequence, what impact does this decentralized policy-making process have on the policy space of knowledge governance? Should the “P” in public include non-state actors with public interest-oriented missions, allowing states to cede their primary if not exclusive role in providing public goods? What is the role of individual states or INGOs in providing policy coordination among diverse and possibly fragmented PPP initiatives? And will effective functioning of PPPs require more regulatory streamlining across borders in order to decrease burdens and obstacles?

As to the second “P,” what is or should be the ambit of the “P” representing the private? Does (or should) the “P” in private include nonprofit as well as for-profit partners? What are the differing motivations and strategies of NPOs and corporate partners? Within the for-profit “private” sector, what are the significant distinctions between the concerns over multinational involvement versus the activities of small and medium sized enterprises often associated with innovation? Within the nonprofit sector, is it fair to assume that the lack of a profit motive can be equated to the public interest? What is or should be the role or mission (as opposed to profit) in motivating nonprofit partners?

And finally, how do these first two “P”s relate not only to each other, but also to the third “P” of partnership? Is there an optimal point on the spectrum of collaboration or joint governance by the first two “P”s in any given partnership? Can the public partner effectively steer the partnership within a soft hierarchical, even regulatory, mode toward the production of public goods?⁵⁷ Should we anticipate and safeguard against private capture of the public interest within partnerships? Which policy flexibilities exercised within PPPs should be constrained, shaped, or steered within a larger multilateral framework? How do PPPs complement and enhance the development activities of the public sector, which all observers agree still have important roles within governance by goal-setting?⁵⁸ And within knowledge governance or innovation activities specifically, how does technology generation and sharing between partners occur? PPPs have at least two kinds of impacts: direct impacts by filling gaps where market distortions occur, and indirect impacts, by sharing technologies that can lead to further innovation. Under what conditions and when should a partnership be deployed to optimize these impacts?

Adding to the conceptual morass, PPPs do not operate on a blank slate but rather within multilateral legal and regulatory regimes where norm-setting and norm implementation are already rife with complex networks, relationships, and other forms of heterarchical, pluralistic governance – what some have referred to as the fragmentation of global governance.⁵⁹ Embedded within these distributed multilateral and multi-stakeholder governance regimes operating within transnational legal frameworks is a preexisting and arguably deep normative incoherence around the relationship of innovation activities to development, to wit, whether IP and innovation activities inevitably and “naturally” lead to development or whether, instead, development objectives should

⁵⁷ Steven Bernstein, *The United Nations and the Governance of Sustainable Development*, in *GOVERNING THROUGH GOALS: SUSTAINABLE DEVELOPMENT GOALS AS GOVERNANCE INNOVATION* 213 (Norichika Kanie & Frank Biermann eds., 2017) (describing steering by the UN).

⁵⁸ *Id.* at 218–20 (concluding that public partners have an important role to ensure coherence, orchestration, and legitimacy); *id.* at 228–30 (asserting that important direct government functions within goal-setting include the provision of science, monitoring, and review).

⁵⁹ See Dinwoodie and Dreyfuss, *supra* note 9; see generally Rakhyun E. Kim, *The Nexus Between International Law and the Sustainable Development Goals*, 25 *REV. EUR. CMTY. & INT’L ENVTL. L.* 15 (2016).

lead, shape, and steer IP norms.⁶⁰ One perspective could be characterized as a more categorical and formalistic – or even technocratic – approach towards IP’s role within knowledge governance. The other perspective could be viewed as relying on the insight that IP cannot be viewed in “splendid isolation”⁶¹ or as an end in itself, but is necessarily part of pluralistic dialogues across regimes so as to optimize social welfare through knowledge governance.⁶²

Leading multilateral institutions such as WIPO and the World Trade Organization (WTO) have been grappling with this conceptual difficulty for decades, most recently through the so-called WIPO Development Agenda as well as the WTO Doha Development Round, respectively. The latest attempts at integrating development goals and initiatives within WIPO has resulted in significant structural changes since the Development Agenda was first implemented in 2007,⁶³ yet the integration of the 2030 Agenda’s SDGs with the overall work plan at WIPO and/or its Development Agenda has been arguably sporadic so far rather than holistic.⁶⁴ Meanwhile, at the national level, both developing and developed country sectors are re-landscaping the geography of global intellectual property to meet domestic welfare demands more explicitly throughout the public law regimes. Ruth Okediji views these efforts as significant “legal innovations,” which she describes as

new techniques, institutions, or methods specifically designed in the light of [WTO] TRIPS obligations, and that facilitate implementation of those obligations in a manner consistent with or that reconcile national welfare goals as the primary justification for IP protection . . . Across developed and developing countries, legal innovation offers a fine instrument for defining sovereign responsibility for the effects of IP rights in society.⁶⁵

How do or should PPPs fit into these policy debates about IP and sustainable development? Will PPPs address the policy incoherence around IP and development or worsen it? Can they advance effective, efficient, and equitable joint governance through partnerships engaged in innovation activities, or do they supplant more optimal forms of

⁶⁰ See generally INTELLECTUAL PROPERTY, TRADE AND DEVELOPMENT: STRATEGIES TO OPTIMIZE ECONOMIC DEVELOPMENT IN A TRIPS-PLUS ERA (Daniel Gervais ed., 2d ed. 2014); INTELLECTUAL PROPERTY RIGHTS: LEGAL AND ECONOMIC CHALLENGES FOR DEVELOPMENT (Mario Cimoli, Giovanni Dosi, Keith E. Maskus, Ruth L. Okediji, Jerome H. Reichman, and Joseph E. Stiglitz eds. 2014); INTELLECTUAL PROPERTY AND SUSTAINABLE DEVELOPMENT: DEVELOPMENT AGENDAS IN A CHANGING WORLD (Ricardo Meléndez-Ortiz & Pedro Roffe eds., 2009); INTELLECTUAL PROPERTY AND DEVELOPMENT: LESSONS FROM RECENT ECONOMIC RESEARCH (Carsten Fink & Keith E. Maskus, eds., 2005).

⁶¹ Cottier, *supra* note 4.

⁶² See, e.g., Claudio Chiarolla, *The Work of the World Intellectual Property Organization (WIPO) and Its Possible Relevance for Global Ocean Governance*, in COMPREHENSIVE STUDY ON EFFECTIVE AND SUSTAINABLE GLOBAL OCEAN GOVERNANCE: UN SPECIALIZED AGENCIES AND GLOBAL OCEAN GOVERNANCE, (D.J. Attard & M. Fitzmaurice eds., 2016), available at <https://ssrn.com/abstract=3002489>.

⁶³ World Intellectual Property Organization, *Report on the Independent Review of the Implementation of the Development Agenda Recommendations*, at 27–28, WIPO Doc. CDIP/18/7 (Aug. 15, 2016); cf. Jeremy de Beer, *Defining WIPO’s Development Agenda*, in IMPLEMENTING THE WORLD INTELLECTUAL PROPERTY ORGANIZATION’S DEVELOPMENT AGENDA I (Jeremy de Beer ed., 2009); THE DEVELOPMENT AGENDA: GLOBAL INTELLECTUAL PROPERTY AND DEVELOPING COUNTRIES, (Neil Weinstock Netanel, ed., 2008).

⁶⁴ Peter K. Yu, *Five Decades of Intellectual Property and Global Development*, 8 WIPO J. 1–10 (2016), available at <https://ssrn.com/abstract=2872682>; see also WIPO Committee on Development and Intellectual Property (CDIP) Reports, available at www.wipo.int/policy/en/cdip/.

⁶⁵ Ruth Okediji, *Legal Innovation in International Intellectual Property Relations*, 36 U. PA. J. INT’L L. 191 (2014).

knowledge governance? And how will overall policy coordination, either at the national or multilateral level, occur among these decentralized initiatives? PPPs can potentially play an important role in ensuring that norm-setting happens in a democratic fashion, by encouraging and integrating greater input from a broad range of stakeholders. But they can also fall prey to a number of different challenges, including potential policy capture, fragmentation, and/or laundering.

With regard to technology sharing, in particular, at least two types of potential obstacles can be discerned: first, within a PPP itself, among its partners, and second between a PPP and its broader environment. To overcome these obstacles, what are the major policy choices with respect to complementarity between public and private responsibilities, and what is the correct design mix of proprietary (exclusive) and open (inclusive) innovation access and use? Relatedly, what kinds of outcomes are expected with regard not only to the innovation activities of the three “P”s, but other public policy goals of IP, such as the related three “A”s of knowledge diffusion and dissemination, that is, availability, accessibility, and affordability?⁶⁶ Social licensing strategies to promote the three “A”s may matter much more to the NGO or NPO partner than to its other partners. And correspondingly, some partners within PPPs may not have sufficient leverage over the other PPP participants to push their partners toward social licensing goals outside of a short-term trajectory set by funding cycles for public agencies or private foundations, profit cycles for commercial partners, and/or budgetary concerns of governments.⁶⁷

These definitional and functional ambiguities around PPPs involved in innovation activities reflect lack of consensus around basic goals and implementation practices. What we do know so far is far outweighed by what we do not know. We do know that on a *practical* level, PPPs vary in terms of their approaches to innovation activities and sustainable development more broadly. On a *policy* level, we know that PPPs have the potential to generate critical information regarding aspects of global knowledge governance, such as best practices for IP licensing, as well as for financing, regulatory coordination and oversight, and technology dissemination. And on a *conceptual* level, we know that knowledge governance arrangements involving PPPs in development inevitably raise issues around accountability, representation, and transparency – especially where the expected output is a development-oriented public good that is intended primarily to contribute to overall social welfare. All of these insights operate, however, at a very high level of abstraction.

III Rewinding the Triple Interface

The myriad unanswered questions in the previous section confirm that PPPs remain under-examined, under-evaluated, and under-researched, despite their growing importance in global governance for sustainable development generally, and knowledge

⁶⁶ Steve Brooke, Claudia M. Harner-Jay, Heidi Lasher, and Erica Jacoby, *How Public–Private Partnerships Handle Intellectual Property: The PATH Experience*, in *INTELLECTUAL PROPERTY MANAGEMENT IN HEALTH AND AGRICULTURAL INNOVATION: A HANDBOOK OF BEST PRACTICES 1775* (Anatole Krattiger, Richard Mahoney, Lita Nelsen, Jennifer Thomson, Alan Bennett, Kanikaram Satyanarayana, Gregory Graff, Carlos Fernandez, and Stanley Kowalski eds., 2007), available at: www.iphandbook.org/.

⁶⁷ Chon, *supra* note 35, at 293.

governance specifically.⁶⁸ This book's primary goal is to contribute toward a better understanding of the diversity of multi-stakeholder partnerships, including PPPs, operating at the juncture of IP and sustainable development, and to build a larger picture of their knowledge governance activities through case studies and other analysis.

In this regard, the book's chapters examine innovation activities across a variety of development fields, assess the current landscape of exemplary PPPs, and suggest possible directions for future policy and research. Together, these chapters explore the various benefits and costs of partnership-driven knowledge governance strategies through a representative range of PPPs across various development domains. The book's four sections cover PPPs operating in public health, education, ICTs, and libraries; climate change-related technologies as well as agriculture. The final section presents perspectives on knowledge governance and institutional design of PPPs.

This book's chapters span many kinds of partnerships.⁶⁹ In order to address the diversity of PPPs in IP, we do not impose a common definition of PPPs upon the authors or readers. Nor do the chapters adhere to shared methodology regarding any aspect of the triple interface. In other words, the authors here engage with freedom to explore those facets of the triple interface they find most compelling to convey and analyse, and with whatever methodological tools they feel appropriate. Authors who are involved in the PPPs they present here were encouraged to take a critical approach towards them, beyond enumerating their achievements and successes. We leave it to the readers to assess the extent to which this has been the case.

In addition, this book is deliberately designed to stake out various perspectives, whether generally supportive or critical, of the triple interface. An important value added is that it brings together authors from various backgrounds, thus representing a broad diversity of views on the issues at hand. In this regard, we hope the book will ultimately foster a dialogue among key PPP stakeholders, policymakers, and scholars, with the goal of facilitating knowledge gap-filling, knowledge sharing, and possible knowledge levelling about this important arena of global governance and sustainable development. A brief description of each chapter follows.

A Public Health

The section on public health begins with a legal and policy overview of PPPs in global health by **Frederick Abbott**. He focuses on the role of PPPs in possibly transforming funding models for R&D of pharmaceuticals. His chapter explores the boundaries

⁶⁸ Analyses of the double interface of PPPs and development, or of PPPs and IP are few and far between. See, e.g., David J. Maurrasse, *STRATEGIC PUBLIC PRIVATE PARTNERSHIPS: INNOVATION AND DEVELOPMENT* (2013); Philipp Pattberg, Frank Biermann, Sander Chan & Aysem Mert (eds.), *PUBLIC-PRIVATE PARTNERSHIPS FOR SUSTAINABLE DEVELOPMENT: EMERGENCE, INFLUENCE AND LEGITIMACY* (2013). A literature search of SDGs and partnerships and/or SDGs and intellectual property revealed very few published materials on either topic. This scholarly gap is evident in the business and management literature as well. See Ans Kolk, Arno E. Kourula, and Niccolò Pisani, *Multinational Enterprises and the Sustainable Development Goals: What Do We Know and How to Proceed?*, 24 *Transnational Corporations* 9 (2017), available at <https://ssrn.com/abstract=2988607> (analyzing the nature of the private for-profit partners in PPPs).

⁶⁹ Dodds, *supra* note 24, at 143 (Development partnerships can be categorized as those organized by the UN, those facilitated or supported by the UN, and those that have no involvement by the UN).

between public and private R&D, surveys key PPPs in the public health arena, describes the advantages and disadvantages of PPPs, and then proposes ways in which PPPs might lead into alternative models of funding pharmaceutical R&D. Abbott describes various contradictions of existing financial structures and emphasizes delinkage (defined as “separating the R&D function from the production, sale and distribution function”) as an important fulcrum between public and private interests in generating R&D moving forward.

Anatole Krattiger, Thomas Bombelles, and Ania Jedrusik then present the INGO partner perspective on WIPO Re:Search. Their chapter reviews the multi-stakeholder partnership landscape for public health in the context of the SDGs as well as broader innovation incentive schemes for PRNDs (or what these authors call neglected tropical diseases). They then examine some economic determinants of innovation and how different partnership models such as PPPs endeavor to address related challenges. This case study includes a detailed examination of various characteristics of WIPO Re:Search, including its structure and governance, funding, and other critical components.

A complementary chapter follows about BIO Ventures for Global Health, co-authored by **Katy M. Graef, Jennifer Dent, and Amy Starr**. They explore two open innovation platforms co-led by BVGH – the Pool for Open Innovation against Neglected Tropical Diseases and WIPO Re:Search – that encourage and support biopharmaceutical companies’ contributions to PRND R&D through PPPs. Their contribution also discusses the necessity of a partner responsible for proactively establishing collaborative projects between participating organizations and managing established alliances to ensure that challenges are addressed and projects are successful. It concludes with a description of how the WIPO Re:Search consortium governs the sharing of IP among organizations and the consortium’s alignment with the SDGs.

The next contribution, by **Esteban Burrone**, provides a legal and policy case study of a specific PPP, the Medicines Patent Pool (MPP), which is the first patent pool in public health designed to enhance access to affordable medicines in developing countries through the negotiation of access-oriented and transparent voluntary licences with the pharmaceutical industry. His chapter outlines the concept of patent pooling as it has evolved over recent years in the public health field. He then reviews its practical application in HIV R&D through the establishment of the MPP, and its subsequent expansion into hepatitis C and TB research. Burrone ends with an analysis of the potential applicability of the patent pooling model to other pharmaceutical R&D areas, by identifying the kinds of public health challenges that such a model could address in the context of meeting the health-related SDGs.

The final chapter in the public health section of the book, co-authored by **Hilde Stevens and Isabelle Huys**, is based on an in-depth study of the Innovative Medicines Initiative, Europe’s largest early-phase PPP. They map the ways in which IP is generated, protected, and managed within and beyond these types of research PPPs. The chapter reviews the relevant concepts and taxonomizes these PPPs as partnership-focused, open collaboration, or hybrid models. It then examines key issues, such as the boundaries of the precompetitive partnership, the role of trust within those PPPs, IP ownership and access rights (particularly with regard to foreground and background IP), the importance of transparent IP rules underlying knowledge sharing strategies, and the role of IP in the performance of PPPs. Their work also demonstrates the importance of acknowledging a broad range of IP performance measures related to knowledge sharing, including the

sharing of know-how, show-how, databases, and protocols. The authors conclude with some recommendations for best practices to facilitate efficient and equitable knowledge sharing via PPPs.

B *Education, ICTs, and Libraries*

This section leads off with a chapter written by **Jens Bammel**, who presents a case study of the Health InterNetwork Access to Research Information (HINARI), which is the World Health Organisation's PPP for facilitating access to scientific information to researchers in developing countries. He describes how this access can at times be achieved within the constraints of copyright and licences, by taking advantage of the role that publishers play in knowledge distribution and harnessing their added value and expertise. Bammel concedes that collaborative partnerships based on licensing are not a complete panacea to unequal access to information, but concludes that the track record of this partnership (one of several partnerships in the "Research for Life" family) demonstrates that there is value in exploring PPPs that make use of the publishing industry's skills rather than to oppose them. The chapter examines some of HINARI's structural characteristics, including qualifying countries and institutions, organizational and technical set-up, and legal agreements. It not only delves into various success factors, such as those that were required to enable publishers to engage fully, but also describes solutions to key obstacles, including the challenge of the transition from aid to trade.

Sara Bannerman provides an information policy case study of WIPO's "Access to Research for Development and Innovation" (ARDI) program, also part of the Research4Life family of PPPs. She first reviews the history of networked governance and PPPs at WIPO and asks more broadly whether, and how, PPPs can best be structured to work for sustainable development. Bannerman then evaluates the WIPO Development Agenda project entitled *Specialized Databases' Access and Support* (Phase I and II) as a case study of PPPs as they currently operate in WIPO. This part of her chapter examines the extent to which the ARDI program – a part of this WIPO-based project – contributes to policy participation by the users most affected by the program, and to important goals of equity and access. Critically examining the concept of development embedded in the ARDI program, she argues that if WIPO is to adopt a sustainable development agenda in which partnerships play a major role, consistent with the intent of the SDGs, it must adopt higher and more inclusive standards for PPP governance.

Next, **Susan Isiko Štrba** explores the contribution of the Accessible Books Consortium (ABC), a PPP initiative based at WIPO, in providing greater access to published materials to communities of visually impaired persons (VIP). Based on interviews conducted in 2016 with participating stakeholders in the ABC (including WIPO, representatives of libraries, VIP communities, and publishers), the chapter first maps the challenge of access to information by VIPs, highlighting the role of copyright. She describes the ABC in detail, and follows this with a detailed evaluation of the ABC as a partnership. Her chapter ends by discussing the achievements, shortcomings, and challenges of the ABC, highlighting lessons for implementing the Marrakesh Treaty to Facilitate Access to Published Works by Visually Impaired Persons and Persons with Print Disabilities, and suggesting how the IP goals of innovation and access to information may be realized through partnerships implementing the SDGs. The author concludes that the public law

treaty framework and private sector initiatives are interdependent; both are required to address issues of access.

From a US perspective, **Melissa Levine** provides a legal and information policy case study of HathiTrust, involving a partnership between Google Books and a consortium of university libraries, spearheaded by a public university, the University of Michigan. This case study demonstrates how PPPs can propel nonprofit mission, by helping libraries to better meet the informational needs implicit in the SDGs, and by improving global access to knowledge and information with more clarity for both copyright holders and cultural institutions. Following an exploration of the role of IP as a distinct challenge to the partnership goals, including the difficulties associated in locating the boundaries of the public domain, she concludes that similar PPPs cannot either form or function without an enabling environment of strong copyright exceptions and limitations. Levine provides some suggestions for adjusting both national and multilateral copyright legal and policy frameworks to better serve both public and private interests of PPPs with similar goals.

C Environmental Issues: Green Technologies and Agriculture

In the first of three chapters on climate change, **Ahmed Abdel-Latif** outlines how the multilateral regime governing climate change not only recognises the role of PPPs, but also seeks to enhance their contribution to global efforts to accelerate technology diffusion and innovation in green technologies. These efforts by PPPs connect the multilateral mechanisms for encouraging the production and dissemination of green technologies to the more comprehensive and holistic SDGs of the 2030 Agenda. He first summarizes the historical evolution of global climate and sustainable development discussions, then examines how climate change discussions have addressed IP issues to date. Following this examination, Abdel-Latif describes how PPPs in green technology have sought to approach IP matters in a pragmatic manner. He concludes with examples of PPPs at the multilateral level (WIPO GREEN) as well as at the bilateral level (the U.S.-China Clean Energy Research Center and the US-India Partnership to Advance Clean Energy).

The contribution by **Joshua D. Sarnoff** with **Margaret Chon** provides a taxonomy of innovation policy choices within climate change-related technology transfer, including legal, public policy, management policy, and government funding choices. Starting with a description of some global inequalities that likely will result from existing unequal patterns of creation and distribution of climate change technologies and associated ownership of IP rights, the chapter then explains how PPPs pose significant challenges for specific policy choices regarding innovation funding of climate change technologies and associated IP. It presents a typology of government choices in innovation funding and explains how these basic national policies may affect the nature, direction, and roles of PPPs in the climate change and energy development domains. In addition, it proposes several approaches to overcoming access and price constraints. These include both public sector policies and private sector (and/or governmental proprietary) choices to increase technology dissemination. The chapter concludes with a renewed call for greater public funding, and for more careful management of the innovation policy choices of climate change technology PPPs.

Ayşem Mert and Philipp Pattberg draw on a multiyear research project on the emergence and effectiveness of PPPs, which utilizes a large-N database called the Global Sustainability Partnerships Database, to understand better the role and relevance of PPPs in contemporary global environmental governance. The empirical focus in this chapter is on partnerships addressing climate change and/or energy. The chapter first defines partnerships as a case of network governance and briefly discusses the origins of partnerships for sustainable development. It then provides an overview of the status of technology innovation and technology transfer in multilateral environmental governance. After supplying this context, Mert and Pattberg present their findings from an empirical analysis of the performance of PPPs in the climate and energy subfield. The chapter concludes with suggestions for improving climate change-related partnerships moving forward as envisioned by the 2030 Agenda.

Irene Calboli and Delphine Marie-Vivien offer a comparative legal and policy study of agriculture-related geographical indications (GIs) in three jurisdictions: France, India, and Singapore. Agricultural GIs provide numerous public benefits through their contributions to agricultural and rural development. In their chapter, Calboli and Marie-Vivienne survey these different national approaches, to answer the following questions: What is the best GI governance model for achieving the public policy objectives of GI protection; specifically, should such a model be based primarily on state-driven action, or rather on the actions by the private sector? Ultimately, they conclude that a system in which either the state or the private sector has exclusive, or majoritarian, control may not be an optimal system for GI governance. Instead, coordination between both the state and private stakeholders work is a requirement – but not necessarily to the same degree, or even at the same time, given that national circumstances and needs may require different approaches. Thus, for successful shared governance between the public and private sectors, they posit that legal and policy flexibility is needed.

D Governance and Institutional Design Perspectives

Padmashree Gehl Sampath examines specific features of international PPPs, to characterise them within the broader landscape of PPPs and explain the key aspects that set them apart. Through a bibliometric review of the current state of existing empirical evidence on PPPs, IP, and technology transfer issues, she then evaluates the current state of empirical information available on these PPPs in the context of technological sharing and capacity building. Drawing on these results, Sampath critically analyses the treatment of technology transfer in PPPs, positing an urgent need to understand the ways in which technology-related objectives and achievements of existing PPPs differ as well as what precise advantages and limitations they pose in practice. Lastly, her chapter raises a set of critical issues on whether existing models and solutions devised thereunder address the question of technology transfer in a satisfactory manner. It concludes with some suggestions for future institutional design to address capacity-building, technological learning, and technology sharing goals, which the SDGs have prioritized for development.

With the Open African Innovation Research (Open AIR) network as a case study of a cross-regional research platform, **Chidi Oguamanam** and **Jeremy de Beer** link empirical and conceptual perspectives on PPPs to the key operational elements of this networked

platform, including its core driving factors relevant to development issues associated with IP and knowledge governance in Africa. The chapter posits that insights from Open AIR's construct and research findings, which flow from its activities as a research-driven rather than a product-driven initiative, can shine light on how PPPs (or cross-sector partnerships in general) can be better exploited and reengineered beyond their current and ad hoc interventionist outlook, and therefore serve more effectively as sustainable development vehicles. It summarizes multiple examples of successful collaborative research fostered by Open AIR across different development domains.

Drawing on lessons from the MDGs and a case study of the Millennium Development Villages, **David J. Maurrasse** offers a policy study of PPPs. He situates what he calls cross-sector partnerships, including PPPs, in the context of their influence on the current SDGs and their former counterpart, the UN MDGs. Specifically, the chapter discusses the lessons learned from the involvement of cross-sector partnerships in the progress made towards the MDGs. In assessing the impact of partnerships on the implementation of both the SDGs and MDGs, the chapter draws on examples from agricultural and rural development for poverty reduction. While not discussing PPPs in relation to knowledge governance specifically, Maurrasse concludes by providing guidelines for future cross-sector partnerships in addressing global governance and development challenges generally.

Peter K. Yu closes this final section of the book with a key legal and policy exploration of human rights law and its relation to PPPs. The incorporation of human rights into the SDGs is an advance from the previous MDGs, but also raises new challenges in implementation through PPPs. Yu focuses on the roles and responsibilities of IP-related PPPs in the international human rights regime. In doing so, he examines the "protect, respect, and remedy" framework and the Guiding Principles on Business and Human Rights, which John Ruggie presented to the UN Human Rights Council in his capacity as the UN Secretary-General's Special Representative on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises. After evaluating the strengths and weaknesses of Ruggie's proposed framework and the Guiding Principles, this chapter explains why partnerships should assume greater human rights responsibilities. This chapter concludes with three specific examples illustrating how PPPs can be utilized to foster a more appropriate balance between IP and human rights, including possibilities and constraints of private partner involvement in implementing the SDGs.

And in a concluding chapter to the entire volume, **Margaret Chon** synthesizes the lessons learned. She summarizes the chapters' findings according to four thematic sections: (1) aligning with public policy objectives; (2) coordinating with other knowledge governance efforts; (3) managing the partnership boundaries; and (4) enhancing sustainable development. Based on these findings, she then suggests multiple items for future policy analysis and scholarly research.

The chapters contained in this book provide early guideposts to the still largely uncharted territory of the triple interface of IP, PPPs, and sustainable development. They add scholarly inquiry and policy analysis from both private and public perspectives about and from governmental, INGO, NGO, NPO, as well as for-profit partners and stakeholders. Ultimately, the book provides a provisional but important map to the multiple roles of PPPs in global knowledge governance and sustainable development. It should generate further policy analysis and scholarly research about this rapidly emerging and evolving, yet already embedded and impactful, triple interface.

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