22

Technology Diffusion in the Triangle of China, the West and Developing Countries

The Contribution of Common Concerns of Humankind

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I Introduction

Technology drives the law, and the law inherently tends to lag behind specific technological innovations and changes. International conflicts arise due to alleged and real deficiencies in the law and legal protection. The US-China tariff war was initiated by the Trump Administration in 2017. Still unsettled today, concerns of inadequate protection of intellectual property and losing leadership in the field of information technology mainly induced it, in particular in the field of information technology. The alleged theft of intellectual property rights has been paramount (Eberhard Tundang, 2020). The row on the banning of G5 equipment originating in China but jointly developed with western companies (Malkin, 2020) was fuelled by fears of espionage and national security concerns. It strongly added to the geopolitical tensions, resulting in random hostage takings and incarceration by Chinese authorities of two innocent Canadian nationals in response to arresting the financial CEO of Huawei in Canada on behalf of the United States over alleged violations of sanctions. While the persons concerned have been released in the mean-time, tensions and concerns have further increased. The problem is unresolved. Differences in handling electronic data and data protection create uneven conditions for developing artificial intelligence, much to the advantage of China, given the mass of data available. Large technology companies are increasingly regulated in China to respond to the needs and aspirations of the communist party and the government. China seeks losing dependence on imported advanced technology, while the US is increasingly concerned about national security and the effort to rebuild an industrial base and repatriating production (see Chapters 8–10, 17, 21).

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These concerns much influence bipartisan US trade policy today and restrict multilateralism. Unilateral measures, based upon safeguards are of increasing importance and explain the failure to restore the Appellate body in the WTO. The rows over Taiwan, the South China Sea, systematic human rights violations in Xinyang province, the suppression of civil liberties in Hong Kong, and the war in Ukraine offer a grim background to this paper. Epochal tensions between democracy and increasingly autocratic and oligarchic regimes inform the debate. Geopolitically, it would seem that there is no or little common ground left to reflect on issues of technology diffusion between the US and China, as well as the rest of the World affected by rivalry and conflict.

At the same time, many Western companies remain invested in China and hope to make large profits in a huge and increasing domestic market. China, vice versa, while increasing home markets, continues to depend upon foreign exports and needs to protect her foreign direct investment, securing access to advanced technologies and research. Global value chains strongly integrate China also in technology development (Malkin, 2020) and make it an important partner. Consumers around the world benefit from these arrangements and international trade offering enhanced competition and lower prices.

Thus, geopolitical and commercial interests in East and West alike are not in line. Ideological differences between the US and China and competing systems of governance rival economic interdependence and business and consumer interests (Wu, 2016). Most countries find themselves uneasily caught in between the struggle of the two superpowers. This is also true for the European Union. Germany in particular strongly depends upon exports to, and investments in, China in order to protect the welfare of its economy. The same is true for Switzerland. Developing countries cannot afford to take sides. Unlike the Cold War with the former Soviet Union and Eastern Europe, strong economic interdependence forces governments to maintain economic cooperation and ties wherever this is possible. Rationally, common interests persist, despite ideological differences. Common concerns, in particular abating and mitigating the pandemic and climate change make such cooperation indispensable and a necessity. The revolution in energy supply and the containment of pandemics cannot be addressed and succeed without cooperation and joint action in technology diffusion.

Technology has been the main driver not only of the law but also of international trade and investment over centuries. It will continue to do so despite political tensions. It opens channels of communication and

cooperation. Technology diffusion is not a one-way street. It is a complex human transaction. Advanced technologies often depend upon local adaptation and recognition, in particular in agriculture. They benefit from recourse to traditional knowledge and expertise. They depend upon servicing and thus the transfer of knowledge and education. It offers the hope and potential to bridge differences, much to the advantage of individuals and families around the world which, at the end of the day, international law and relations must serve.

With this backdrop, the paper discusses the importance and potential of existing WTO law in multilaterally regulating the transfer and diffusion of technology. It seeks to identify shortcomings and common grounds which provide the basis for talks, negotiations, and amendments. The paper is less concerned with specific bilateral US-Sino relations. It focuses on what is of interest to the global community, including China and the US, in particular in the context of climate change mitigation and adaptation, biodiversity, and the global pandemic. While the basic struggle is about the epic tension between democracy, oligarchy, and tyranny ever since the typology was set out in classical Greek philosophy and history, the challenge in trade amounts to interfacing different systems of mixed economies within the multilateral trading system, including preferential trade and cooperation agreements.

II Taking Stock of WTO Law

It is worth recalling at the outset that WTO law, developed over a number of trade rounds, has increasingly addressed non-tariff barriers and thus issues of technology affecting international trade. WTO law, supplemented by preferential agreements building upon the common law of international trade (Cottier, 2015), has built a very substantial body of binding international law, comprising principles and rules applicable to technology (for a comprehensive analysis see Cottier, 2017). It essentially covers all areas of technology in the field of agriculture, industry, and services. It includes energy from electricity to fossil fuels. The constitutional principles of transparency, MFN, and national treatment in GATT apply to these fields. They allow addressing many problems relating to market access in the proliferation of technology, in particular where a new field has not been addressed by a more specialized agreement. Rules on tariffs and tariff reductions brought about greater access to foreign technology, and in some areas, such as information technology or chemical and pharmaceutical products, medical equipment, and information technology,

members removed tariffs by means of sectoral initiatives and plurilateral agreements based upon critical mass. The following areas are of particular importance for the transfer and dissemination of technology.

(i) Intellectual Property

The WTO Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS Agreement) sets out the basic rules on ownership of technology in patent law and copyright (software) and the protection of trade secrets (see also Chapter 4). It establishes the legal framework for voluntary transfers by way of licensing. It allows countries to operate restrictions on contractual relations and abuse of dominant positions in competition law and policy. Fair use and compulsory licensing allow governments to protect public interests, mainly with their own territories. Overall, the multilateral IP system, including 26 WIPO treaties, offers a solid foundation for domestic law and commercial transactions, provided the law is properly implemented domestically and companies dispose of the necessary finance and funding (Lybecker and Lohnse, 2015). While skepticism against strong IP standards having adverse effects on to transfer of technology persists (Eberhard Tundang, 2020: 954), the TRIPS Agreement can be applied and construed in support of environmentally sound technologies (Zhuang, 2017). Unresolved challenges relate to developing and least-developing countries whose access to technology cannot be sufficiently secured by the TRIPS Agreement. Likewise, disciplines of protecting traditional knowledge supporting biodiversity have not yet materialized.

(ii) Technical Regulations

The Agreement on Technical Barriers to Trade (TBT Agreement) entails detailed disciplines on standards and regulations. It ensures that regulatory prescriptions and restrictions do not go beyond what is necessary to achieve a particular policy goal as defined by government and law. The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) addresses food standards and thus technology related to this sector. The Agreement on Government Procurement (GPA) offers a framework for defining technologies requirements and non-discriminatory procedures with which government purchases need to comply. The Agreement on Subsidies and Countervailing Duties (SCM Agreement) defines the scope and range of governmental support

in the research and development of new technologies. The Agreement on the Implementation of Article VI of the General Agreement on Tariffs and Trade (Anti-dumping Agreement) and the Agreement on Safeguards allow for the protection of domestic industries threatened by imports of cheaper competitive products. Finally, the Agreement on Services (GATS) includes disciplines and conditions of market access for technology-related services, such as engineering or telecommunications.

The WTO is not itself a standard-setting organization. Technical standards and regulations are the subjects of specialized organizations, such as ITU or the Codex Alimentarius of WHO/FAO, to which WTO rules relate too. Most of the technical standards, essential for interoperability and the quality of products, are enacted by private standardization organizations, such as CEN, CENELEC, or ETSI (Delimatsis, 2015). Compliance with such norms essentially presumes compliance with basic security standards set out by law. More specific sectors of technology, such as navigation or aviation are addressed by specialized international standard-setting organizations, such as IATA and IMO. These standards, in turn, inform the application of WTO rules and principles.

(iii) Committees, Trade Policy Review, and Dispute Settlement

Overall, existing WTO law and additional agreements offer a broad and sound basis and guidance for regulating technology in domestic law. The work of Committees, reviewing the operation of Agreements, discusses and explores the implications for newer technologies. New issues are flagged in the process of periodical trade policy review. It offers the possibility of dispute settlement between Members of the WTO, in particular in applying special agreements and foremost general principles of non-discrimination to newer fields of technology so far unregulated in greater detail.

Geopolitical tensions should not obscure the potential of peaceful dispute resolution in the WTO as a way and means to address technology-induced differences and maintain peaceful relations among different political systems. Both the US and China as technological rivals have used it extensively (see Chapter 11). Dispute settlement offers a bridge that must not be withdrawn. It is able to address the interface of different governmental and administrative systems, all of which today are characterized as mixed economies entailing the role of government and the state which varies from country to country and from sector to sector. Dispute settlement offers a detailed analysis of the regulatory framework of a Member in a

particular context. It allows applying the law and gaining insights also for areas not yet addressed by particular rules and disciplines. Jurisprudence relating to the protection of the environment convincingly demonstrates that WTO law is able to address new issues within the bounds of existing agreements. For example, discrimination relating to new technologies can be addressed by recourse to existing law. Or, claims of theft of intellectual property can be properly addressed on the basis of existing protection of undisclosed information, to the extent that the transfer does not result from joint ventures voluntarily engaged into by companies investing abroad. Recourse to unfair competition rules of the Paris Convention and incorporated in the TRIPS Agreement can be made.

The case law of the WTO strongly contributed to consolidating the law on technology and offering guidance in addressing emerging conflicts and difficulties, such as renewable energy. It allows for making new distinctions in product and production which will be crucial in addressing climate change mitigation and adaption (Conrad, 2011). Taxation and tariffs can be shaped accordingly (Cottier, 2014b; Holzer, 2014). It has come a long way and is not static. The law is a living thing even within the bounds of particular agreements. Recourse to general principles of law and other, relevant agreements further widen the potential to address new challenges in dispute settlement while fully respecting existing commitments.

(iv) Prospects

Today's WTO law essentially emerged from the 1995 Uruguay Round of multilateral trade negotiations, building upon eight previous rounds. Ever since, further progress in negotiations has been limited to government procurement, the revision of the TRIPS Agreement, and a new Agreement on Trade Facilitation. The Doha Development Agenda largely failed, leaving the impression of substantial loopholes and lacunae in the system. This in return informs the view that binding dispute settlement can only be resumed once these lacunae are successfully addressed. Current efforts, largely due to technological changes, no longer work on the basis of broad and comprehensive trade rounds, but incrementally address particular issues, such as fisheries subsidies. Some efforts are made formally outside the WTO, such as TISA or negotiations on electronic commerce and efforts for a framework of investment promotion. In sum, the law is not up to date, and much remains to be done on WTO reform (see Chapter 12) and, as suggested below, in developing a proactive agenda for negotiations on technology regulation and diffusion relating

to climate change (Brewer, 2016; Brewer and Falke, 2012; Condon, 2009, 2017; Delimatsis, 2016). Yet, it is important to emphasize that the existing body of law amounts to an important solid foundation. It not only informs preferential trade agreements but also largely the legal status of new and emerging technologies.

Political stalemate, due to geopolitical tensions and a multipolar world dominated by US-Sino tensions, and the lack of progress in developing new disciplines in multilateral agreements today leads the US to reject binding dispute settlement by allowing for appeals to the void. The failure to reappoint Members of the Appellate Body, mainly induced by US criticism of a narrow reading of trade remedies, weakens the rule of law also in the field of technology management and diffusion. While panels continue to operate, binding arbitration today is limited to Members of the MPIA, the Multi-party Interim Appeal Arbitration Arrangement, to which 53 States, including the EU, today are members of and which is based on the arbitration clause of Art. 25 DSU. The first appeal based on the model took place in 2022. The US policy on WTO dispute settlement and all those following it ignore that both negotiations and dispute settlement work in tandem and are not a matter of sequencing, in particular in addressing issues of technology. They both contribute to solutions in tandem. Withdrawal from binding dispute resolution misses the potential to use international law in addressing tensions and differences. It forecloses a channel of communication in the courtroom and an instrument to apply rules and principles to emerging technologies in binding arbitration. It undermines multilateralism and fosters unilateralism and nationalism.

III A Focus on Common Concerns of Humankind

Given the geopolitical constraints and tensions among major powers and the end of an agenda dominated by a transatlantic alliance, which enabled the successful conclusion of multilateral trade rounds up to 1995, careful consideration should be paid to areas of common interest and concern shared by the global community. Specific bilateral and plurilateral problems among powers may be left to unilateral trade policy measures within the bounds of WTO law. Safeguards, the protection of human rights and labor standards, and recourse to national security are likely to increase unilaterally, in particular in areas of strategic importance to the balance of powers. In the field of technology regulation, cyberspace and the internet come to mind. Regulations strongly depend upon constitutional settings and political beliefs. It will be difficult to find common ground between

democracy and autocracy in defining the rights and protection of individuals, or access to the internet and globally operating services. It will be difficult to agree on general and comprehensive rules of competition and antitrust, in particular for tech companies if such rules, on the one hand, protect markets and democracy, and control and primacy of state and party on the other hand. Perhaps, bilateral or plurilateral settlements may be found among those mainly affected by specific issues.

These caveats do not exclude addressing competition law and investment in future WTO negotiations. But here and elsewhere, the focus would need to be on shared and common interests in the fields and sectors of the economy where common ground and landing zones can be found. Foremost, the fields should be of interest to all the members of the WTO, and not limited to big powers.

It is submitted that the emerging principle of Common Concern of Humankind offers a foundation for future WTO negotiations. Areas covered by the principles inherently represent common problems and preoccupations, independently of a political system. All states share an interest to find common solutions. They cannot be found in isolation. Here, states inherently depend upon cooperation, comparable to the doctrine of comparative advantage which essentially relies upon reciprocity of trade concessions and is hardly sustainable in going unilateral and alone. Areas of common concern inherently require cooperation in producing global public goods (Cottier et al., 2014a). They are more narrowly defined than the shared and important principle of sustainability, balancing ecological, economic, and social interests (Bürgi-Bonanomi, 2015), or the broadly defined and comprehensive 2015 Sustainable Development Goals (SDGs). It is about addressing specific threatening problems, including by means of recourse to technology diffusion.

(i) Expressions in Treaty Law

The United Nations Framework Convention on Climate Change (UNFCCC) recognized climate change as a common concern of humankind. It was affirmed by the 2015 Paris Agreement and the 2021 Glasgow Climate Pact. The same holds true for the protection of biodiversity, and of preservation of cultural diversity. The WTO health regulations recognize the protection from pandemics a global concern. Other areas, such as the protection of the atmosphere, the problem of global migration, marine pollution, financial and monetary stability, or gross inequality within states come to mind (Cottier, 2021a). All these areas share the risk of

serious threats to international peace and stability if left unattended. Most of them also share the trait of being transnational and cannot be addressed in isolation. It is of fundamental importance to note that measures are taken to benefit all and not only a single country. Vice versa, measures omitted harm all countries and the globe alike. Common Concern offers a fundamentally different logic from mercantilism and reciprocity underpinning the international trading system.

So far, the doctrine of Common Concern has been without any impact. A legal principle has not emerged, despite pressing needs. Policies on climate change have remained national and without sufficient coordination. Essential cooperation among the main emitters responsible for global warming, that is China, the United States, and the European Union, has not materialized in coordinating decarbonization and emission trading. As a result, the World in 2021 is heading for a 2.7°C increase in average global temperatures – far beyond the target of 1.5°C of the 2015 Paris Accord. In combating the pandemic, nations took recourse to trade restrictions and nationalism. Covax, the multilateral vaccine program of the World Health Organization is grossly underfunded and short of supplies, while industrialized countries have been hoarding vaccines way beyond their needs. It is obvious that neither climate change and biodiversity, nor the pandemic can be contained unilaterally and without effective international cooperation and coordination.

(ii) Toward a Legal Principle

It will be a long way to implement, recognize and establish a legal principle of Common Concern of Humankind (CCH) in response to policy failures and the fact that national jurisdictions cannot successfully address and solve certain problems on their own. Prospects are dim, but the principle as applied to specific areas is the only hope in times of increased international rivalry and nationalism. In anticipation of further failures detrimental to human welfare, it is imperative to push to the doctrine of common concern of humankind in civil society and politics, stress its recognition in respective fields, and work out legal implications, in particular for technology diffusion in fighting climate change and the pandemic. If States live up to commitments on human rights and sustainable development goals, much more needs to be done to disseminate essential vaccines and related technology to lower-income countries. Governments need to be reminded that they have accepted the areas of climate change, biodiversity, and international health as common concerns in treaties and are

bound by them. The following legal implications are suggested and were developed (Cottier, 2021b):

Once a problem is recognized as a CCH in a process of claims and responses, legal doctrine suggests linking it to three types of obligations also applicable to technology diffusion (Ahmad, 2021a, 2021b) First, it entails an obligation to enhance cooperation beyond general public international law in addressing the shared problems. Secondly, it entails undertaking the necessary homework in addressing the problem at home; many of them require action locally, nationally, and internationally. Common Concerns are not limited to the realm of international law and relations. Climate change obviously informed this requirement. Thirdly, it entails obligations in compliance with international obligations. Failure to comply with obligations may trigger countermeasures and thus does not exclude unilateral measures against free-riding countries.

IV An Agenda of Common Concerns for the WTO

We submit that a future agenda for WTO negotiations should be placed under the realm of Common Concerns of Humankind. This essentially entails climate change mitigation and adaptation (Ahmad, 2021a, 2021b). It entails efforts in fighting global pandemics and diseases threatening mankind. It entails the protection of biodiversity. Fisheries negotiations, including technology and subsidy issues, made a good start.

The point is that in these areas all nations, despite the ideological divide, share a common problem. They share common interests to cooperate in trade and investment. They all are indirectly and directly affected. They cannot solve the problem on their own. They all depend upon cooperation and contributions made by others to successfully create public goods in the field. All benefit from negotiated results. They all share a common interest in compliance. Under the principle of Common Concern, WTO should develop a proactive agenda and take the lead on trade issues. Trade regulation amounts to a central, but not exclusive, component of an overall regime. Much of it entails access to, and dissemination of modern technology.

It is not a matter of addressing common concerns comprehensively and exclusively in the WTO. Goals and standards are set in other bodies and agreements. It is a matter of asking what contribution trade regulation can make. It is a matter of shaping the angles of international trade and investment in such areas of common interest with a view to supporting the attainment of goals and standards defined elsewhere. Principles

and rules on trade and investment, subsidies, intellectual property, and possibly competition essentially address non-discrimination to, and on, foreign markets. This inherently entails disciplines on tariffs and taxation. They foster trade in products addressing the common concern and allowing for restrictions on harmful products. They make sure that restrictions are not overly broad and respond to the principle of necessity and proportionality. They focus on interconnecting different regulatory systems allowing for appropriate interfaces of technology. They contribute by fostering the dissemination of technology supporting sustainability by means of trade and investment abroad. While existing trade rules offer a solid basis, new disciplines are of particular importance in bringing about a proactive trade agenda and for the new field of sustainable investment promotion.

(i) Climate Change Mitigation and Adaption

Much of the issues on climate change mitigation and adaption relate to low-carbon technology (Ahmad, 2021a, 2021b, Brewer and Falke, 2012; Ockwell and Mallet, 2012; Ockwell et al., 2010). This is particularly true for energy, driving economies and the World, transportation, and agriculture. Central efforts on decarbonization and fostering renewable energy should be made at the WTO, in close cooperation with specialized international organizations. Such negotiations have not yet taken place as of 2021.

Decarbonization of the energy sector and the economy:

- The gradual reduction and elimination of fossil fuel subsidies in return for tangible benefits to consumers in health care and education of children. The agenda can build upon the model and modalities of the Agreement on Agriculture and negotiations on fisheries subsidies.
- Common Anti-trust rules on producer cartels in energy production and supplies.
- Defining the policy space for the financial support of research and development of renewable energy beyond the disciplines of the SCM Agreement. It entails the reactivation of well-defined non-actionable subsidies.
- Rules on the interconnection of renewable energy and the framework for a global electricity grid, enabling the rebalance of supply and demand of renewable electricity (wind, solar, hydropower, biomass, possibly nuclear energy) and derivatives (hydrogen, carbon-free kerosene, LNG).

- The creation of a multilateral framework on carbon tariffs for heavily polluting traded products, including reforming the HS, for border tax adjustment, and the interface of different emission trading systems or carbon taxes.
- Interfacing and mutual recognition of fuel efficiency standards of transportation (road, aviation, marine transportation).
- Policy space for tax incentives based upon carbon footprints.
- Policy space for the reduction of methane in agricultural production and tariffs based upon footprinting.
- The introduction of tax incentives for the transfer of technology to developing countries as a flanking measure to PPM-based measures (see below).
- Framework for the promotion of investment in technologies reducing greenhouse gas emissions in developing countries (see below).
- Liberalization of energy-related services (consulting, engineering), including mode 4.
- Framework on investment in renewable energy (see below).
- Modes of Cooperation with IEA, the Energy Charter, and other organizations.

Climate Change adaption in agriculture, trade in foodstuffs and nutrition:

- Climate change adaption requires negotiations revising the Agreement on Agriculture, bringing about better risk management, greater reliance on food imports, and equitable distribution in times of shortages, sourced from globally diverse sources.
- Disciplines on export restriction and fair sharing of food stuffs among countries in need.
- Support measures should be redirected to bring about diversity in crops, away from endangered monocultures in traded goods.
- A framework for trade in genetically engineered crops and food stuffs.
- Support of research and development for climate change-resisting plants.
- Disciplines on risk assessment and risk management in biotechnology regulation.
- Framework for investment in sustainable agriculture (see below).
- Liberalizing related services (consulting, engineering) including Mode 4.
- Modes of cooperation with FAO and other organizations.

(ii) Protecting Biodiversity

Trade-related efforts on protecting biodiversity have been limited at the WTO to intellectual property (Wager, 2008). They have not produced results, so far. Moreover, the list of issues to be addressed exceeds IPRs and entails rules on goods and services:

- Gradual reduction and phase out of fossil fuel subsidies for fisheries.
- Recognition of PPM-based rules on fishing techniques.
- Recognition of PPM-based rules on agricultural products, for example, palm oil production.
- Protecting traditional knowledge and cultural diversity in intellectual property.
- Recognition of agreed trade restrictions on endangered plant species.
- Disciplines on marine plastic pollution by way of limiting plastic packaging in international trade.
- Framework for rules and principles relating to the use and trade of pesticides and fertilizers in agriculture and trade products.
- Framework to encourage diversity of traded crops.
- Framework for labeling diversified foodstuffs.
- Framework of investment in crop and animal diversity (see below).
- Liberalizing related services (consulting, genetic engineering, plant, and animal breeding) including Mode 4.
- Modes of cooperation with UNEP, FAO, WIPO and Washington Treaty.

(iii) Combatting COVID-19 and Future Pandemics

A high-level dialogue between WTO and WHO commenced in 2021 (WTO, 2021a). A number of issues should be contemplated.

- Tightening rules on export restrictions on medical products and pharmaceuticals.
- Framework for financial support for research and development of vaccines.
- Regulatory and intellectual property framework for the production and international trade of vaccine and pharmaceutical components, value chains, and final products.
- Developing a legal framework for Private-Public-Partnerships (PPPs), in particular on IPRs.
- Recognition of framework requiring equitable distribution of, and access, to vaccines in terms of trade regulation.

- Liberalization of hospitals and services and access to jobs under Article VII:2 GATS, including mode 4.
- Liberalization of related services (vaccination, analytical, and testing), including mode 4.
- Framework for investment in health care services (see below).
- Modes of cooperation with WHO and International Health Regulation, international risk assessment, and national risk management in managing trade in medical products and equipment and movement of personnel.

V Strengthening Transfer and Dissemination of Technology to Developing Countries

Many of the issues and activities listed depend upon technology diffusion. Fundamental questions relating to access to technology have not been properly addressed in WTO law. While the framework is workable for commercial transactions, it fails to address the needs of lower-income countries short of finance and funding and a private sector able to engage forcefully by means of commercial acquisition of technology (Barton, 2017; Lybecker and Lohnse, 2015; Zhuang, 2017). As the dissemination of technology is at the heart of addressing common concerns of humankind, these issues move center stage. Two types of measures should be contemplated next to concessionary support programs:

(i) Tax Rebates for Technology Dissemination

Commitments and pledges on the transfer of knowledge and technology in international agreements ignore that governments rarely dispose of the technology that pertains to the private sector. Article 66:2 of the TRIPS Agreement obliges developed members "to provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer least-developed countries in order to enable them to create a sound and viable technological base." This provision has largely remained a dead letter. Special and differential treatment here has remained an empty promise. This is because most governments making such promises do not legally dispose of the technology. It is in the hand of companies and the private sector. Financial incentives may be qualified as export subsidies beyond export credits and thus contrary to the SCM Agreement (Ahmad, 2021a). It is submitted that industries engaging in low-income countries by investment or trade should benefit from

domestic tax reductions, in order to offset financial risks and difficulties encountered. This idea, introduced by Hoekman et al. (2005) still awaits implementation. Climate change is an excellent field, as such rebates can account for abatement measures abroad, contributing to agreed targets. It can also apply to other fields recognized as a common concern of humankind. This in return would require appropriate revisions in the SCM Agreement. A similar scheme could be extended to developing countries in general, or limited to particular sectors which are essential to commitments under the principle of common concern of humankind.

(ii) Tax and Tariff Revenues for Technology Dissemination

Tax revenues generated from import carbon tariffs and border tax adjustment should be used to fund technology dissemination to low and lower-income country producers with the aim to meet sustainable production standards and thus avoid further import restrictions. These funds could be accountable to abatement goals agreed upon by countries imposing tariffs and import restrictions in addressing the respective Common Concerns of Humankind. In addition, part of such income could be used to fund international programs supporting lower-income countries in readjusting to sustainable production standards.

VI Investment Promotion

While trade addresses cross-border activities, globalization entails the division of labor in producing components to products and thus the operation of global or regional value chains. Some 60% of all trade today is trade in components, sourced from a multitude of different sites and countries around the world. China plays a particularly important role in protecting corresponding investments (see Chapters 18–20, 21). Existing WTO rules on goods are almost silent on investment, while disciplines on services and intellectual property equally address and protect the foreign direct investment. Bilateral investment treaties address the protection of investment. In doing so, they indirectly promote investment. But they fall short of actively supporting it with a view to bringing about the sustainable production of exported products. Conditions of investment are largely left to transactional arrangements and projects, and multilateral disciplines are lacking. Developing countries are exposed to conditions imposed by major investors.

In superpower rivalry, it will be of interest to developing countries to develop a multilateral framework for investment and investment promotion which secures long-term benefits for their economies and people. Programs such as the Road and Belt Initiative of China, or the US response to the Build Back Better World Partnership should be subject to multilateral disciplines addressing conditions of investment for land use and natural resources, technology transfer and dissemination, local work content securing benefits accruing to the population. Developing countries – the vast majority of WTO members – are interested in bringing about the necessary safeguards against exploitation. Industrialized countries caught in between power blocks equally share an interest in creating level playing fields from the point of view of investors. Incentives and terms for sustainable technology diffusion in the context of global value chains and division of labor must be at the heart of the effort.

While negotiations, building upon the TRIMS Agreement, failed during the Doha Development Agenda, investment was taken up in bilateral cooperation and trade agreements. Since 2020, plurilateral negotiations on a framework of investment facilitation for development (MFIFD) are under way among WTO Members. They are supported by developing countries, China, and the EU. The effort addresses S&D, technical assistance, cross-border cooperation, facilitation of stay of personnel, and home country obligations for sustainable development (WTO, 2021a, 2021b). A comprehensive agreement should set the framework conditions which all investors need to respect and comply with in transactional agreements and investment programs in a transparent manner. Given geopolitical rivalries, this will be difficult to achieve. The framework agreement, however, could focus on recognized Common Concerns of Humankind, and expound on particular disciplines applicable to areas captured by this principle. The commonality of interests in addressing the concern should facilitate overcoming resistance to giving up power-based policy space and unilaterally imposing conditions to the benefit of addressing the concern, in particular climate change mitigation and adaption, the protection of biodiversity, and access to vaccines. An agreement addressing common concerns would address framework conditions for funding and returns, servicing loans, land rights, and use, labor conditions and mobility, protection of basic human rights, and finally for the transfer and dissemination of sustainable technology.

VII Conclusions

The existing body of multilateral trade rules offers a solid foundation for addressing the commercial dissemination of technology. Binding dispute settlement is able to authoritatively apply principles and rules to governmental regulation of emerging and new technologies. It offers a bridge to overcome superpower rivalries and protect the rights of Member States of the WTO, all being mixed economies in their own way. Shortcomings of the law relate to the dissemination of technology to developing countries lacking resources in the private sector. It is here that new disciplines are required and need to be developed. Given geopolitical rivalries, it is submitted that these efforts should focus on recognized Common Concerns of Humankind. It is here that we can identify globally shared common interests beyond power politics where Members of the WTO need to cooperate beyond unilateralism with a view to address these concerns effectively in their very own interest and thus allow for the dissemination and funding of appropriate technologies.

The WTO thus should develop a proactive trade and investment-related agenda for negotiations enabling and supporting recognized Common Concerns of Humankind, that is climate change mitigation and adaption, the protection of biodiversity, and the containment of global pandemics. Other topics may eventually be recognized and inform future negotiations. A substantial amount of topics for a proactive trade agenda of the WTO can be identified, and each of them is able to make a substantial contribution. They may result in amending existing agreements or bring about new treaties, in particular on energy and electricity, the reduction of fossil fuels subsidies, or the packaging of traded goods. Or they link up WTO law to agreements developed in other fora. Trade rules will increasingly distinguish products on the basis of sustainable modes of production. At the heart of this transition will have to be a mechanism to compensate for the necessary imposition of PPM-based trade restrictions by funding and allowing access to sustainable technology by developing countries with a view to leaving conventional modes of production behind. Such mechanism, using tax rebates or return of tax and tariff revenues will be accounted for the effort made in addressing the Common Concern and therefore is also in the interest of major markets and powers.

Given the structure of the world economy, additional rules need to address investment promotion for the benefit of developing countries, caught otherwise in between superpower rivalries. Agreed framework conditions, applicable to areas of Common Concern of Humankind,

will create a level playing field for home countries, host countries, and investors. They secure that foreign direct investment is sustainable, non-exploiting with reasonable returns, and to the benefit of the population of the developing country concerned. Again, at the heart of this effort is that modern and sustainable technology is being deployed by foreign direct investors or donor countries in a cooperative manner and equally to the benefit of local welfare. Since such investment or financial support accounts for addressing a Common Concern, differences of interests and unilateralism, otherwise paramount in a World shaped by geopolitical rivalry, should rationally make way for international cooperation within the World Trade Organization and other international bodies. The emerging principle of Common Concern of Humankind offers the hope and potential that ideological differences and power play can cede to cooperation in limited areas of inherently shared interests and necessary cooperation in creating public goods in the pursuit of domestic and global welfare.

References

Ahmad, Z. (2021a). *WTO Law and Trade Policy Reform for Low-Carbon Technology Diffusion: Common Concern of Humankind, Carbon Pricing, and Export Subsidy Support*. Leiden/Boston: Brill.

Ahmad, Z. (2021b). 'Trade related measures to spread low carbon technologies: a common concern based approach'. In Thomas Cottier (ed.), *The Prospects of Common Concern of Humankind in International Law*. Cambridge: Cambridge University Press, pp. 95–152.

Barton, J.H. (2017). *Intellectual Property and Access to Clean Technologies in Developing Countries*. Geneva: ICTSD.

Brewer, T. (2016). 'International technology diffusion in a sustainable energy trade agreement'. In Gary C Hufbauer, Ricardo Melendenz-Ortiz and Richard Samans (eds.), *The Law and Economics of a Sustainable Energy Trade Agreement*. Cambridge: Cambridge University Press.

Brewer, T., Falke A. (2012). 'International transfers of climate friendly technologies: how the world trade system matters'. In David Ockwell and Alexandra Mallet (eds.), *Low Carbon Transfer: From Rhetoric to Reality*. London: Routledge.

Bürgi-Bonanomi, E. (2015). *Sustainable Development in International Law Making and Trade: International Food Governance and Trade in Agriculture*. Cheltenham: Edward Elgar.

Condon, B.J. (2009). 'Climate change and unresolved issues for climate change in WTO law'. *Journal of International Economic Law* 12: 895.

Condon, B.J. (2017). 'Disciplining clean energy subsidies to speed the transition to a low carbon world'. *Journal of World Trade* 51: 675.

Conrad, C.R. (2011). *Processes and Production Methods (PPMs) in WTO Law: Interfacing Trade and Social Goals*. Cambridge: Cambridge University Press.

Cottier, T. (2015). 'The common law of international trade and the future of the World Trade Organization'. *Journal of International Economic Law* 18: 3–20.

Cottier, T. (2017). 'Technology and the law of international trade regulation'. In Richard Brownsword et al. (eds.), *The Oxford Handbook of Law, Regulation and Technology*. Oxford: Oxford University Press, pp. 1017–51.

Cottier, T. (ed.). (2021a). *The Prospects of Common Concern of Humankind in International Law*. Cambridge: Cambridge University Press.

Cottier, T. (2021b). 'The principle of common concern of humankind'. In Thomas Cottier (ed.), *The Prospects of Common Concern of Humankind in International Law*. Cambridge: Cambridge University Press, pp. 1–94.

Cottier, T., Aerni, Ph., Karapinar, B., Matteotti, S., de Sépibus, J., Singal, A. (2014a). 'The principle of common concern and climate change'. *Archiv des Völkerrechts* 52: 293.

Cottier, T., Nartova, O., Shingal, A. (2014b). 'The potential of tariff policy for climate change mitigation: legal and economic analysis'. *Journal of World Trade* 48: 1007–37.

Delimatsis, P. (ed.). (2015). *The Law, Economics and Politics of International Standardisation*. Cambridge: Cambridge University Press.

Delimatsis, P. (ed.). (2016). *Research Handbook on Climate Change and Trade Law*. Cheltenham: Edward Elgar.

Eberhard Tundang, R. (2020). 'US-China trade war: an impetus for new norms on technology transfer'. *Journal of World Trade* 54: 943–60.

Hoekman, B.M., Maskus, K.E., Saggi, K. (2005). 'Transfer of technology to developing countries: unilateral and multilateral policy options'. *World Development* 33: 1587, 1593–94.

Holzer, K. (2014). *Carbon-Related Border Adjustment and WTO Law*. Cheltenham: Edward Elgar.

Lybecker, K.M., Lohnse, S. (2015). *Innovation and Diffusion of Green Technologies: The Role of Intellectual Property and other Enabling Factors*. Geneva: WIPO Global Challenges Report.

Malkin, A. (2020). *Getting beyond Technology Transfers: Analysis of and Recommendations on Intangible Economy Governance in China*. Waterloo: CIGI Papers 239.

Ockwell, D. Haum, R., Mallett, A., Watson, J. (2010). 'Intellectual property rights and low carbon technology transfer: conflicting discourses of diffusion and development'. *Global Environmental Change* 20: 729–38.

Ockwell, D., Mallett, A. (eds.). (2012). *Low Caron Technology Transfer: From Rhetoric to Reality*. London: Routledge.

Wager, H. (2008). 'Biodiversity, traditional knowledge and folklore: work on related IP matters in the WTO'. *International Human Rights Law Review* 3: 215.

WTO (2021a). 'WHO-WTO dialogue steps up efforts for increased COVID-19 vaccine production and equitable access'. www.wto.org/english/news_e/news21_e/igo_21jul21_e.htm (accessed October 29, 2021).

WTO (2021b). 'Investment facilitation for development news archives'. www.wto.org/english/news_e/archive_e/infac_arc_e.htm (accessed October 29, 2021).

Wu, M. (2016). 'The "China, Inc." challenge to global trade governance'. *Harvard International Law Journal* 57: 261–323.

Zhuang, W. (2017). *Intellectual Property Rights and Climate Change: Interpreting the TRIPS Agreement for Environmentally Sound Technologies*. Cambridge: Cambridge University Press.