

**EVOLVING INDIA'S FTA STRATEGY: ADDRESSING TBTS  
AND STRENGTHENING INSTITUTIONAL CAPACITY FOR  
SUSTAINABLE EXPORT GROWTH**

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**PRITAM BANERJEE  
AMIT RANDEV  
DEEKSHA YADAV**

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**CENTRE FOR WTO STUDIES  
CENTRE FOR RESEARCH IN INTERNATIONAL TRADE  
INDIAN INSTITUTE OF FOREIGN TRADE  
NEW DELHI, INDIA-100014**

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## ***Evolving India's FTA Strategy: Addressing TBTs and Strengthening Institutional Capacity for Sustainable Export Growth***

### **Abstract**

*The WTO TBT Agreement aims to ensure that technical regulations, standards, and conformity assessment procedures are non-discriminatory and do not create unnecessary barriers to trade. This paper explores the importance of strengthening institutional capacity and addressing the challenges faced by businesses due to Technical Barriers to Trade (TBT) to fully realize the benefits of trade liberalization. As India negotiates Free Trade Agreements (FTAs) the paper emphasizes the growing significance of strategically using TBT related disciplines in FTAs to address barriers arising from TBTs that often restrict market access and increase trade costs. Utilizing the World Bank's Deep Trade Agreement Database 2.0, we conduct a comparative analysis of TBT provisions in FTAs across seven economies, including India, to understand global trends in development of disciplines and associated rule-making to address TBT issues. Based on this analysis, the paper goes on to suggest a forward-looking approach for India in negotiating TBT chapters with potential FTA partners. The paper also advocates leveraging obligations arising from TBT related provisions to push for reforms of India's domestic eco-system of rule-making, implementation, and monitoring of standards. This includes capacity building leading to development of strong institutional frameworks and adoption of risk management systems and effective surveillance mechanisms to ensure effective compliance and build trust with global partners. By prioritizing these efforts, India can more effectively leverage FTAs, enhance export capabilities, and foster economic growth in a competitive global trade environment.*

**Keywords:** TBT, FTA, International Standards, MRAs, Enhancing Institutional Capacity

## **Executive Summary**

Governments possess the sovereign authority to regulate international trade to safeguard public health, environmental safety, and national security. However, when regulatory measures become excessively restrictive or are applied with protectionist objectives, they transform into non-tariff barriers (NTBs). NTBs can considerably limit market access for exporters, impose substantial compliance burdens on importers, and escalate trade-related costs. Often, Small and medium-sized enterprises (SMEs) are disproportionately affected, as they often lack the resources to manage complex regulatory requirements that larger firms navigate with relative ease.

A significant category of NTBs is technical barriers to trade (TBTs), which include standards, technical regulations, and conformity assessment procedures. Standards and regulations establish technical specifications for products, such as safety requirements for pharmaceuticals or fertilizers, while conformity assessment procedures ensure compliance with these standards. Although intended to ensure product safety, quality, and effectiveness, variations in these requirements across countries can create significant trade obstacles. Exporters may face increased costs to adapt their products to comply with different regulations, making TBTs a critical challenge in international trade when not addressed properly.

Addressing TBTs effectively in Free Trade Agreements (FTAs) is crucial for maximizing the advantages of trade liberalization. Comprehensive TBT provisions facilitate market access, strengthen regulatory cooperation, reduce business costs, and foster deeper economic integration. By minimizing the impact of technical barriers, FTAs can provide a more stable and efficient trading environment, promoting growth and competitiveness for all parties.

The present study explores the role of TBTs in India's ongoing FTA negotiations, assessing their potential to either facilitate or hinder market access. The study utilizes the World Bank's Deep Trade Agreement Database 2.0 and compares TBT provisions across seven economies—EFTA, EU, ASEAN, Japan, USA, Korea, and India—to identify global trends in the development of disciplines in this area and assess their practical utility and enforceability<sup>2</sup>.

The analysis reveals that while all economies considered for the study refer to the WTO TBT Agreement, deeper integration approaches remain limited. The adoption of Mutual Recognition Agreements (MRAs) for standards is sparse, with moderate commitment levels undertaken in some of the agreements involving Korea and the EU. However, EU, Japan, and Korea demonstrate stronger commitments to mutual recognition when it comes to technical regulations and conformity assessment.

It needs to be noted that most major economies, with the exception of EFTA and India, have established robust MRA commitments for conformity assessments in their FTAs. Additionally, the EU, Japan, USA, and Korea exhibit high standards in transparency and dispute settlement mechanisms.

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<sup>2</sup> The deep trade agreements database of the World Bank examines TBTs within 269 Preferential Trade Agreements (PTAs) implemented between 1960 and 2017 that provide insights into how regional agreements have evolved beyond WTO standards.

As India progresses in negotiates with major economies such UK and EU, and takes up review of agreements with major economies with which it has existing agreements such as Japan and Korea, addressing TBTs in these agreements is vital to achieving trade benefits. However, India's limited institutional capacity, largely a result of resource constraints, has hindered its ability to adopt ambitious TBT provisions such as MRAs and enhanced transparency. We shall subsequently discuss in greater detail on this linkage between relatively poor institutional capacity of relevant agencies responsible for standard setting, technical regulations and enforcement (at the border, and domestically) which includes conformity assessment.

To strengthen its position in international trade, India should focus on enhancing its institutional capacity. This involves improving its Risk Management Systems (RMS) and developing a robust market surveillance mechanism to ensure compliance and build credibility. Establishing a reliable monitoring framework for both imports and domestic markets, aligned with international best practices, is crucial. An effective RMS at border checkpoints, along with market surveillance through random sampling, can streamline procedures for compliant exporters while maintaining necessary regulatory oversight. Additionally, India should actively pursue MRAs, especially MRAs related to technical regulations and conformity assessments, which can reduce the time and costs associated with product testing and certification, thereby facilitating smoother trade.

Focusing on MRAs in standards, technical regulations, and conformity assessments, especially in sectors where India has competitive advantages, can be beneficial. By using transition periods, India can gradually build the required capacity before fully committing to MRAs, allowing it to maintain its competitive edge in the global market.

India must also prioritize transparency and ensure that any deviations from international standards within TBT chapters are well-justified and non-discriminatory. This is particularly important as deviations by advanced economies often create barriers for Indian exporters. Addressing these inconsistencies would allow Indian firms to adapt more efficiently to various standards and help reduce compliance costs, thereby enhancing their market access. Furthermore, India should advocate for greater transparency in conformity assessment fees within its FTAs, ensuring that these fees correspond to the actual cost of services provided. This is especially critical for Indian SMEs, which are more vulnerable to high fees imposed by developed markets. Transparent fee structures would level the playing field and enhance the competitiveness of smaller Indian exporters.

Finally, India can leverage public-private partnerships (PPPs) to boost its conformity assessment capabilities. By combining the expertise and resources of both public and private sectors, PPPs can streamline testing and certification processes, support adherence to international standards, and lessen compliance burdens on exporters. This model has proven successful in sectors such as electronics and pharmaceuticals, offering a viable pathway for India's trade capacity-building efforts.

As India engages in FTA negotiations, prioritizing TBT chapters with a focus on building institutional capacity, aligning with international standards, and adopting robust commitments is critical for sustainable trade benefits. By improving regulatory governance, enhancing transparency, and using FTAs as tools for capacity building, India can strengthen its position in the global trade landscape. A strategic approach to TBT provisions will help India mitigate trade



barriers, advance economic integration, and enhance the global competitiveness of its exporters, contributing to long-term economic growth.

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# **EVOLVING INDIA'S FTA STRATEGY: STRENGTHENING INSTITUTIONAL CAPACITY AND ADDRESSING TBTS FOR SUSTAINABLE EXPORT GROWTH**

## **1. Introduction**

In recent years, India has finalized Free Trade Agreements (FTAs) with Mauritius, the UAE, Australia, and the EFTA (European Free Trade Association) group. Additionally, considerable progress has been made in FTA negotiations with the UK and Oman, and ongoing negotiations with the EU, Peru, and other countries. Given the significant investment of resources and time required to negotiate these agreements, it is crucial to recognize that FTAs should be seen as vital instruments for boosting India's exports. However, India's FTA strategy must evolve to acknowledge that modern FTAs encompass more than just trade flows. They increasingly include provisions on a wide range of non-trade issues, often at the insistence of developed countries.

Studies show that non-tariff measures (NTMs) contribute more to trade costs than tariffs.<sup>3</sup> NTMs come in various forms, including quotas, complicated customs processes, price controls, and technical barriers to trade (TBTs), which involve standards, technical regulations, and procedures for conformity assessment. Standards and technical regulations outline a product's required technical features, like the safety standards for a food product. Conformity assessment procedures describe the testing needed to confirm that products meet these standards.

Thereby, addressing TBTs in FTAs is essential for maximizing the benefits of trade liberalization. Effective TBT provisions facilitate market access, enhance regulatory cooperation, reduce costs for businesses, and promote greater economic integration. By mitigating the impact of technical barriers, FTAs can create a more predictable and efficient trading environment, fostering growth and competitiveness for all parties involved.

India's FTA strategy should emphasize leveraging these agreements and to enhance the institutional capacity of India's Participating Government Agencies (PGAs). While there are existing institutional gaps and challenges faced by Indian regulatory bodies, the strategy should not be constrained by these weaknesses. Instead, it should aim to serve India's long-term export interests by incorporating disciplines that reduce cost and complexity of compliance for Indian exporters with reference to such non-tariff measures imposed by the FTA partner. In order to do so, India will have to ensure that it develops the institutional capacity to implement these disciplines and adapt the procedural changes and new regulatory approaches required in order to

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<sup>3</sup> World Trade Organisation. World Trade Report 2012: Trade and Public Policies: A Closer Look at Non-Tariff Measures in the 21st Century. Geneva: World Trade Organization, 2012.

do so.

## 2. Significance of TBT in FTAs

In the evolving landscape of international trade, non-tariff measures (NTMs) have emerged as a prominent feature, especially as tariffs have seen steady reduction across most countries. It is well recognized that Governments have the sovereign right to regulate in order to protect public health, safety, the environment, and national security. However, when such regulatory measures become excessively restrictive or are enacted with protectionist objectives in mind they transform into non-tariff barriers to trade (NTBs).

These NTBs can significantly hinder market access for exporters, impose onerous compliance requirements on importers, and escalate trade-related costs. Notably, NTBs disproportionately impact small and medium-sized enterprises (SMEs), which often struggle with the financial and regulatory burdens that larger firms can more easily manage.<sup>4</sup> Addressing the importance of TBTs in FTAs is critical and serves several purposes.

### 2.1. The WTO Agreement on TBT serves as the primary international framework for regulating technical barriers to trade

The World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement) serves as the primary international framework for regulating technical barriers to trade. The TBT Agreement aims to ensure that technical regulations, standards, and conformity assessment procedures do not create unnecessary obstacles to international trade while allowing member countries to adopt measures to achieve legitimate policy objectives, such as the protection of human health and safety, the environment, and national security. Article 2.1 mandates that members ensure that in respect of technical regulations, products imported from the territory of any member shall be accorded treatment no less favourable than that accorded to like products of national origin and to like products originating in any other country.<sup>5</sup> Article 2.2 requires that technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking into account the risks non-fulfilment would create. Such legitimate objectives include, inter alia, the protection of human health or safety, animal or plant life or health, or the environment. According to Article 2.4, members shall use relevant international standards as a basis for their technical regulations except when such international standards would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued. Article 5 emphasizes that members shall ensure that conformity assessment procedures are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary

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<sup>4</sup> Christoph Herrmann, *European Yearbook of International Economic Law 2017: Non-Tariff Barriers to Trade: What are We Talking About?* (Marc Bungenberg and Christoph Herrmann eds., 2017), 51.

<sup>5</sup> World Trade Organization, "Agreement on Technical Barriers to Trade," April 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120.



obstacles to international trade. It further requires that such procedures shall be no stricter or applied more strictly than is necessary to give the importing member adequate confidence that products conform with the applicable technical regulations or standards. The TBT Agreement provides a comprehensive legal framework aimed at balancing trade liberalization with regulatory autonomy, thus facilitating international trade while safeguarding legitimate public policy objectives.

So, the question remains that if countries have signed on to the WTO TBT and SPS agreements that incorporate all the relevant principles to encourage objective, fair and transparent rules to regulate trade at the border, while also requiring regulatory standards to be aligned to global benchmarks are already, then why is there any further need for disciplines in FTAs.

TBT and SPS agreements are frameworks that define principles. They do not delve into specific policy pathways through which individual member states can choose to engage so as to reduce the cost and time of compliance with regulatory requirements associated with individual products and sectors at the border. Given the multiplicity in terms of specific approaches on development of standards, defining such standards, developing specific technical regulations for such standards and putting in place the conformity assessment procedures associated with the said regulations.

Countries can remain fully compliant with the principles contained in the WTO TBT and SPS agreements, while having very different eco-systems of regulations associated with product standards, labelling or other requirements, and the implementation and certification regimes associated with conformity assessment.

If the focus on negotiations on these issues is to ensure that such regulations do not act as barriers to trade, i.e., they impose minimum costs on business to comply and conform to these regulatory requirements, the countries need to go into much more of the specifics above and beyond the broad principles of the WTO TBT and SPS agreements. In other words, the WTO TBT agreement provides the broadly accepted governance framework within which countries have to operate. More detailed bilateral or regional agreements on the other hand can potentially address specific issues of governance and implementation, including at very detailed sectoral level to ensure minimum transaction costs being imposed on trade. This makes TBT provisions of FTAs an extremely important tool for facilitating trade and reducing the costs of trading, and a strategic opportunity to reduce any barriers to effective market access.

## **2.2 Enhancing Multilateral Commitments Through Free Trade Agreements**

A specific subset of NTMs, technical barriers to trade (TBTs), includes obstacles arising from technical regulations, standards, and conformity assessment procedures. TBTs can pose substantial barriers to international trade if not properly managed. The strategies to prevent and mitigate such TBTs vary widely between developed and developing nations, reflecting

differences in regulatory capabilities and resources.<sup>6</sup> Indian PGAs such as the Food Safety and Standards Authority of India (FSSAI), the Bureau of Indian Standards (BIS), and the Directorate General of Foreign Trade (DGFT), are tasked with dual mandates. These agencies must regulate products within the domestic market while also enforcing standards at borders to ensure that imports meet national requirements. This dual responsibility places significant strain on resources. For instance, the FSSAI, responsible for food safety, must oversee both, the domestic product compliance as well as the inspection of imported goods at entry points. Such overlapping duties frequently result in delays, as a single agency must manage both domestic oversight and import inspections. In contrast, developed countries like the US have specialized bodies such as the U.S. Department of Agriculture (USDA) for domestic food safety and U.S. Customs and Border Protection for border enforcement, resulting in more streamlined operations.

Further compounding the challenge, Indian PGAs often face significant infrastructure deficits, particularly in laboratory facilities necessary for timely product testing and certification. This is a critical issue in sectors like electronics, pharmaceuticals, and food safety, where rigorous testing is essential for both domestic and international trade compliance. For example, under the Electronics and Information Technology Goods (Requirement for Compulsory Registration) Order, 2012, imported electronic products must meet Indian standards. However, the BIS has been criticized for delays in certification, largely due to a lack of accredited laboratories capable of handling the volume of products requiring testing. By contrast, countries such as Germany maintain a robust network of accredited labs integrated into their regulatory frameworks, enabling efficient enforcement of TBTs.

In addition to infrastructure limitations, Indian PGAs are hindered by understaffing and strict budgetary constraints, which significantly impair their ability to pursue an ambitious regulatory agenda or upgrade infrastructure to align with international standards. These challenges limit their capacity to recruit additional personnel, invest in advanced technology, and implement comprehensive monitoring systems.

As a result, India's PGAs are currently facing substantial difficulties due to expansive mandates, inadequate technical infrastructure, budgetary constraints, and staffing shortages, all of which undermine their ability to effectively manage Technical Barriers to Trade (TBTs).

- a. *Regulatory Cooperation and Transparency:* FTAs disciplines can promote regulatory cooperation and transparency by encouraging nations to align their technical regulations and standards in line with international norms. This can be considered to be the optimal strategy to address barriers arising from technical regulations related to standards. Since both countries are aligned to international norms, it is easier to for both sides to pursue Mutual Recognition of their respective Standards. Post such recognition, it follows that

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<sup>6</sup> World Trade Organization, "Technical Barriers to Trade," World Trade Organisation, Accessed October 6, 2024, [https://www.wto.org/english/tratop\\_e/tbt\\_e/tbt\\_e.htm](https://www.wto.org/english/tratop_e/tbt_e/tbt_e.htm).

products meeting the standards in one country would comply with the requirements of the other, leading to seamless movement across borders. This creates a more predictable and stable trading environment. In addition, transparency in regulatory development and implementation ensures that all stakeholders are adequately informed about new or revised standards, reducing uncertainty and aiding businesses in preparing and complying effectively.<sup>7</sup> In addition, this can be considered to be overall the most cost minimizing strategy overall. With standards aligned across countries, there would be no need to tweak production processes in order to meet different requirements and standards in different markets, thus allowing optimal leveraging of economies of scale and lowering production costs at the shop-floor.

- b. *Streamlining Conformity Assessment Procedures:* FTAs often streamline conformity assessment procedures by recognizing results between partner countries, thereby minimizing redundant testing and certification. This can be considered to be the second-best option for addressing trade barriers due to technical regulations, especially if we are considering trade between a developed country and a developing one. Most developing countries would find it challenging to harmonize their standards with those in advanced economies, especially if such developed country standards are more rigorous compared to international norms. However, if tests and certification in the developing country, typically available to its exporters at a much lower cost, are accepted by the developed country regulator, this significantly lowers compliance costs but also boosts the efficiency and productivity of international trade operations.<sup>8</sup>
- c. *Harmonization of Standards and Regulations:* Harmonizing standards and regulations, or establishing mutual recognition agreements within FTAs, enables exporters to access foreign markets more seamlessly without bearing the high costs associated with adapting to diverse national standards. This approach facilitates smoother trade flows and reduces barriers to market entry.<sup>9</sup> While in theory this is the most optimal outcome, it suffers from a few disadvantages in relation to options a and b discussed above. Harmonization would typically involve a developing country having to adopt the higher standard of an advanced economy. This would impose significant costs on the developing country. It would have to invest in the institutional, enforcement and operational capabilities to ensure compliance with such higher standards. Such higher standards would also make the product more expensive and out of reach from less well-off consumers in developing countries. Finally, since this does not pre-suppose alignment with international norms, can lead to higher costs since production might have to be tweaked for those markets

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<sup>7</sup> World Trade Organization, “Transparency in Trade: A Fine Line Between Too Little and Too Much,” World Trade Organization, Accessed October 6, 2024, [https://www.wto.org/english/res\\_e/reser\\_e/ersd201004\\_e.htm](https://www.wto.org/english/res_e/reser_e/ersd201004_e.htm).

<sup>8</sup> Organization for Economic Cooperation and Development, *International Regulatory Co-operation and Trade: Understanding the Trade Costs of Regulatory Divergence and the Remedies 13-14*. OECD Publishing, Paris, 2017.

<sup>9</sup> United Nation Conference on Trade and Development, *Non-Tariff Measures: Economic Assessment and Policy Options for Development 7-8*. United Nation Conference on Trade and Development, 2013

that are not aligned to the standard and associated technical regulation.

- d. *Maintaining High Safety Standards:* If Effective trade facilitating provisions are negotiated in the TBT chapters of FTAs, the lead to a reduction of transaction costs of trade while also ensuring that high safety standards are upheld. This balancing of trade facilitation with regulatory objectives guarantees that public interests are safeguarded without unnecessarily obstructing trade.<sup>10</sup>
- e. *Economic Integration and Development:* Effective TBT provisions in FTAs support economic integration and development by enabling access to larger markets and attracting foreign direct investment. Harmonized standards and mutual recognition agreements foster a more interconnected economic area, promoting increased trade and investment flows.<sup>11</sup>

In this regard, to identify the plausible ways to effectively manage TBTs, the present paper made an endeavour to refer to parallel studies of other jurisdictions. One of the pioneer studies in this aspect has been done by New Zealand in the year 2018, the key highlights of the study has been tabulated below;

**Table 1: Learning from New Zealand's Comprehensive Research into Actual Practical Application of TBT Disciplines to help Exports**

Learning from New Zealand's Comprehensive Research into Actual Practical Application of TBT Disciplines to help Exports
<p>While the principles of leveraging TBT disciplines in FTAs to facilitate trade and help exporters are well known, there are very few good examples of comprehensive studies that provide a 360-degree view of a governments attempts to do so and their learnings from that experience. Studies typically deal with a single aspect, for example attempts at negotiating a specific MRA or a regional initiative to harmonize certain sectoral standards. A rare example of such a comprehensive public policy analysis with respect to the efforts for application of TBT disciplines of FTAs is a New Zealand report titled Technical Barriers to Trade (TBT) Strategy, issued by New Zealand's Ministry of Business, Innovation and Employment.</p>

<sup>10</sup> European Commission, *Trade and Safety Standards: Safeguarding Consumer Protection in a Global Economy*. 2020.

<sup>11</sup> World Bank, *Reforming Non- Tariff Measures to Boost Trade and Competitiveness*. (World Bank Group, 2018), 29.

This provides several key insights regarding the practical application and value for business and trade associated with specific obligations typically contained in the TBT chapters of FTAs. Firstly, the acceptance of equivalence in technical regulations stands out as one of the most impactful obligations for reducing trade barriers, although it requires significant levels of market integration, both overall but also at the sectoral level.

Similarly, mutual recognition of conformity assessment procedures is considered very useful and effective, particularly when mechanisms that enable such recognition between private accreditation bodies of the countries involved rather than government entities. This is largely due to the fact that private sectors have the wherewithal and flexibility to invest in infrastructure and Human Resources reflecting demand for their services in the respective economies, and from a trade operations perspective, obtaining adequate conformity assessment certification is an activity that requires cost and time, and therefore needs to be accessible and cost effective and provided for by an efficient and responsive service provider.

Harmonizing standards bilaterally or regionally is seen as less effective compared to harmonization with international standards, as the former may isolate countries from global efforts. It needs to be noted that adopting good regulatory practices between nations is also noted as a strong contributor to reducing trade barriers, and can therefore be considered a low-hanging fruit for TBT chapters of trade agreements. Interestingly, while transparency provisions are valued but can introduce complexity and additional costs.

The review recommends that New Zealand actively engage in broader WTO TBT Committee discussions, monitor emerging issues, and incorporate them into its TBT work programme. Regular engagement with regulators and industry is advised to better understand and identify national interests, especially detailed assessments at the sectoral level are seen to add value. Such a work programme of continue engagement should be evaluated annually for relevance, including reviewing whether key findings are being documented and followed through. Additionally, it should learn from the TBT programmes of like-minded countries and collaborate with academia and industry-based expertise to assess the impact of TBT chapters on its manufacturing sector.

As a responsible member India adheres to the principles and obligations outlined in the WTO TBT Agreement, which sets a baseline for good regulatory practices. However, India goes beyond these commitments by negotiating dedicated TBT chapters in its FTAs, often surpassing the WTO TBT Agreement requirements. The objective of these WTO plus disciplines in TBT chapters of FTAs is to promote transparent regulatory processes, establish robust procedures for conformity assessment and recognition of results, and promoting the exchange of information

between trade partners.<sup>12</sup> However, the main objective has to be to find the means to minimize the costs for exporters and address unnecessary barriers for Indian exports due to technical regulations imposed by the FTA partner country.

Thus, the primary objectives of the TBT chapters are to promote closer collaboration between regulatory authorities, leading to rationalization of standards and procedures to minimize transaction costs for trade. As discussed earlier, the optimal pathway to achieve this will depend on the situation and includes multiple options such as ensuring adherence to international norms by both parties, mutual recognition of conformity assessment procedures, or harmonization and recognition of standards.

Disciplines in TBT chapters can also help improve transparency in regulatory processes, making it easier for businesses to understand and comply with foreign regulations, thereby reducing trade barriers. By addressing and mitigating TBTs, they simplify international trade for businesses, benefiting both exporters and importers. Additionally, they support SMEs by simplifying regulatory processes and reducing compliance costs, helping these enterprises enter and compete in international markets. It is clear therefore that effectively addressing TBTs in FTAs is crucial for maximizing the benefits of trade liberalization. The recent rise of protectionism has further underscored the value of bilateral and plurilateral agreements that help enhance regulatory cooperation between partners.<sup>13</sup>

As mentioned earlier, effective TBT provisions also promote economic integration and development. By facilitating access to larger markets and attracting foreign direct investment, FTAs help integrate developing countries into global value chains. Harmonized standards and mutual recognition agreements contribute to a more interconnected economic area, promoting increased trade and investment flows.

Notwithstanding the above position, up to what length and extent the private standards has actually led significant improvement in either product quality or widespread improvement in environmental or socio-economic outcomes are yet to be tested. The table below discusses the challenges of private standards.

**Table 2: The Challenge of Private Standards**

**The Challenge of Private Standards<sup>14</sup>**

<sup>12</sup> Government of India, “Technical Barriers to Trade and India’s Free Trade Agreement,” Ministry of Commerce and Industry, Accessed October 6, 2024, <https://commerce.gov.in/wto-tbt-fts/>.

<sup>13</sup> World Trade Organization, “Technical Barriers to Trade: The Challenges Ahead,” World Trade Organization, Accessed October 6, 2024, [https://www.wto.org/english/res\\_e/publications\\_e/tbt\\_challenges\\_e.htm](https://www.wto.org/english/res_e/publications_e/tbt_challenges_e.htm).

<sup>14</sup> Material in Table-2 draws from Impacts of Private Standards on Global Value Chains: Literature Review Series on the Impacts of Private Standards Part I, International Trade Centre (ITC) and Liu, Pascal (2009) Private standards



Unlike standards developed by governmental (or inter-governmental bodies like the International Standards Organization) private standards are developed by a smaller, closed group of stakeholders and therefore not participatory or transparent. Development of such standards also do not have to adhere to strict benchmarks relating to scientific evidence or address concerns in terms of their socio-economic developmental impact.

Since such standards are largely developed with the needs of a small set of stakeholders in mind, addressing their concerns about quality, safety, environmental or socio-economic objectives, they tend to be unsuitable for adoption by a wider set of stakeholders. In many cases the cost of compliance requires a very high investment in capital, skills and institutions that are beyond the reach of many participants in the value-chain of trade for products where such private standards apply. Such private standards might also be unnecessarily stringent in its requirements.

If these private standards are imposed by lead players in global value-chains, especially buyer led value-chains in sectors such as food products, textiles and garments, and consumer goods such as toys, shoes, and furniture then these standards become the de-facto standards for these sectors. Thus, such private standards often end up competing with governmental standards and undermine any progress in terms of transparency, facilitation to support compliance or harmonization achieved through multilateral, regional or bilateral efforts by governments.

Growing consumer activism and awareness in major markets has necessitated the important players in buyer led value-chains to respond by developing private standards that satisfy their customers. These important players can include both global brands as well as major retailers. In an age driven by social media activism, such brands and retailers need to be extra sensitive to such consumer needs. There is also increasingly little room left to segregate markets and selectively apply such standards. For example, if a major garments brand tended to apply an environmental standard and associated labelling for products being sold only to its North American and European customers, social media outrage at such selective application would soon force its hand to uniformly apply this standard globally.

The development of such private standards results in vertical integration, i.e., several steps in the production, processing and distribution of a product controlled by one company), and therefore puts additional demands on producers and exporters, and

requires organizational and financial strength or support from other actors, either inside or outside the chain. This leads to increasing the dependency of suppliers on the lead buyers, and further reducing their negotiating capability within the chain.

Thus, while such product upgradation increases value-addition and value realization from end-customers, much of that increased value is captured either by lead players or other specialized service providers, and not by the producers. It is also interesting to note that most studies have found little evidence that proliferation of such private standards have actually led significant improvement in either product quality or widespread improvement in environmental or socio-economic outcomes, tending instead to create ‘islands of excellence’, i.e., limited number of firms that can adhere to these standards and therefore participate in these value-chains, while excluding a vast majority of others.

Such forced exclusion due to rising entry barriers erected by such private standards reduces competition thereby reducing overall consumer welfare. On the other hand, by reducing market opportunities for a large number of players deny them the resources for incremental improvements of their standards which would have eventually led to much wider adoption and thus improved product quality, environmental and socio-economic outcomes across the board.

Proliferation of private standards therefore represents a challenge. Next generation of FTAs need to find effective ways to address this challenge of private standards, especially if significant volumes of trade between two FTA partners are impacted by such private standards. Standardizing conformity assessments and making them subject to disciplines to streamline conformity assessment procedures could be one way of achieving this objective. Including measures that commit capacity building support including for private standards developed or being enforced by large firms based in their territories could be another.

### 2.3 Global trends in addressing TBT in FTAs

The world bank’s deep trade agreement database 2.0 provides detailed information on the content of a sub-sample of eighteen policy areas most frequently covered in a set of 400 agreements currently notified to the WTO between 1958 and 2023. For each agreement, the database covers the stated objectives and substantive commitments, as well as aspects relating to transparency, procedures and enforcement. Moreover, the database is the result of collaboration with experts in different policy areas from academia and from other international organizations such as the ITC, OECD, UNCTAD, and WTO.<sup>15</sup>

<sup>15</sup> Aaditya Mattoo, Nadia Rocha, and Michele Ruta, eds., *Handbook of Deep Trade Agreements*. (Washington DC: World Bank Publications), 2020.



Chapter 12 of the Deep Trade Agreement Database 2.0 explores Technical Barriers to Trade (TBT) within 269 Preferential Trade Agreements (PTAs) enforced from 1960 to 2017, as analyzed by Espitia, Pardo, Piermartini, and Rocha. The study uses a framework based on WTO TBT Agreement guidelines to assess how regional PTA rules on TBTs have evolved beyond WTO standards. It relies on legal texts for comparability across PTAs but does not cover practical implementation.

Our study leverages the World Bank's Deep Trade Agreement database 2.0. The mapping template used by these authors is based on the provisions of the WTO TBT Agreement, allowing for an easy assessment of how regional preferential rules on TBTs have evolved beyond WTO standards. The information collected by Espitia et al. relies solely on the legal texts of the agreements. The template identifies five types of provisions <sup>16</sup>:

Those that refer directly to WTO rules.

- a. Those that define the type of integration approach (harmonization or mutual recognition) chosen for standards, technical regulations, and conformity assessment procedures.
- b. Those that enhance transparency.
- c. Those that establish institutions or mechanisms to administer the agreement and resolve disputes.
- d. Those that anticipate cooperation among regional partners on standards-related issues beyond trade-related targets and technical assistance.

The template also includes a cross-cutting set of questions aimed at assessing the level of enforceability of each of the TBT provisions included in the PTAs. Five categories of enforceability are identified:<sup>17</sup>

- Level 0: Non-binding and best endeavour: these provisions represent the weakest level of enforceability; the language used in the TBT commitments (“may,” “might,” “should”) is not legally binding on the signatory parties.
- Level 1: Binding TBT commitments: these provisions use stronger language (“shall,” “will,” “agree,” “undertake,” “ensure,” “realize”) but are not subject to dispute settlement (DS).
- Level 2: Binding and subject to state-to-state dispute settlements: where the PTA provides for the use of state-to-state DS for TBT disputes, these disputes must be resolved directly between the countries without the involvement of any private parties
- Level 3: Binding and subject to private-to-private dispute settlements: in PTAs with these

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<sup>16</sup> See Data link at [https://datacatalogfiles.worldbank.org/ddh\\_published/0065624/DR0093604/DTA%202.0%20-%202012.%20Technical%20Barriers%20to%20Trade%20\(v2\).xlsx](https://datacatalogfiles.worldbank.org/ddh_published/0065624/DR0093604/DTA%202.0%20-%202012.%20Technical%20Barriers%20to%20Trade%20(v2).xlsx)

<sup>17</sup> Espitia Alvaro, Sharon Pardo, R. Piermartini, and Nadia Rocha. "Technical barriers to trade." *Handbook of Deep Trade Agreements* (2020), 343

provisions, the agreement's DS mechanism can be used to resolve TBT disputes involving private parties. These types of provisions are rare, as private agreements are usually regulated by contracts.

- Level 4: Binding and subject to state and private DS

Our study does not examine these aspects directly but utilizes the comprehensive mapping and insights provided by Espitia et al. in the DTA database to inform our analysis.

Utilizing this database, we conducted a comparative study of seven economies—EFTA, EU, Japan, USA, Korea, ASEAN, and India—in an effort to establish a global trend in the level of enforceability of TBT commitments. Refer to Annexure-1 for a comprehensive comparative analysis.

### **2.3.1 European Free Trade Association (EFTA)**

The EFTA agreements exhibit a distinct pattern in their approach to addressing Technical Barriers to Trade. The analysis of these agreements reveals several key trends and priorities, which can be elaborated upon as follows:

#### **i. Reference to International Standards**

The data indicates that the reference of international standards within the agreements is less consistent. The promotion of international standards is only explicitly noted in a few agreements, such as the EFTA-Philippines FTA. Most agreements (e.g., EFTA-Israel, EFTA-Mexico) do not go beyond basic references, indicating a low commitment to promoting international standards over technical regulations or conformity assessments.

#### **ii. Promotion of Mutual Recognition Agreements**

The data reveals a minimal promotion of MRAs across EFTA FTAs. Mutual recognition is largely absent in the context of standards, while in context of technical regulation and conformity assessments, only the EFTA-Philippines agreement has mutual recognition in force.

#### **iii. Provisions of Dispute Settlement**

The data shows a strong commitment to dispute settlement mechanisms in EFTA FTAs. 12 out of 13 FTAs have established regional bodies for dispute resolution, indicating a strong commitment to having a structured mechanism in place. Seven of the agreements have provisions for mandatory recommendations, further strengthening the dispute settlement framework.

#### **iv. Cooperation and Capacity Building Features**

EFTA FTAs include several cooperation and capacity-building features, demonstrating a

varying degree of commitment:

- **Administrative and Regional Bodies:** The presence of administrative bodies or regional oversight is common across agreements.
- **Contact Points and Consultations:** Four agreements establish contact points and regular consultations to facilitate information exchange and ensure transparency. However, some transparency measures show lower commitment, as they lack requirements for notifications and do not specify a time period for comments."
- **Technical Assistance and Further Cooperation:** No commitments on further cooperation among members like common policy, technical assistance or metrology.

### **Conclusion:**

Based on the data table analysis, EFTA Free Trade Agreements consistently refer the WTO TBT Agreement, indicating a cohesive approach to addressing technical barriers to trade. However, integration approaches like standards are not strongly promoted within these agreements. The support for Mutual Recognition Agreements is also limited, with the EFTA-Philippines agreement being a notable exception. Although the dispute settlement mechanisms are well-established and effectively resolve trade-related disputes, the agreements lack provisions for cooperation, transparency and capacity-building measures.

## **2.3.2 European Union (EU)**

### **i. Reference to International Standards**

The EU FTAs exhibit a vigorous commitment to aligning with international standards. The agreements extensively promote harmonization with existing standards and the use of regional & international standards (can be seen in 5 FTAs) reflecting the EU's strategic approach to creating a cohesive regulatory framework for smoother trade.

### **ii. Promotion of Mutual Recognition Agreements (MRAs)**

The EU FTAs exhibit a strong commitment to mutual recognition agreements, with multiple agreements including mutual recognition clauses. This highlights the EU's dedication to facilitating trade by acknowledging and accepting each other's regulations and standards.

However, the application of MRAs is limited to conformity assessment and technical regulations, rather than extending to standards.

### **iii. Provisions of Dispute Settlement Mechanism**

EU FTAs feature comprehensive institutional frameworks, including dispute settlement mechanisms. Thirteen out of fourteen FTAs have established regional dispute settlement bodies equipped to issue recommendations, with six of these agreements mandating

adherence to these recommendations. These mechanisms ensure structured processes for addressing and resolving trade-related issues, thereby enhancing predictability and stability in trade relations.

#### **iv. Cooperation and Capacity Building Feature**

EU FTAs extend beyond immediate trade concerns to include broader cooperation initiatives, showcasing a commitment to:

- **Administrative and Regional Bodies:** EU FTAs exhibit strong institutional framework and administrative bodies. 12 FTAs have a regional body established.
- **Contact Points and Consultations:** EU FTAs are distinguished by extensive transparency provisions compared to those of other countries, having requirements for specified time periods for comments on notifications and establishment of contact points for information exchange.
- **Technical Assistance and Further Cooperation:** A notable commitment to developing common policy programs, technical assistance, and metrology cooperation. 8 FTAs include commitments on metrology. The inclusion of these elements in several agreements indicates the EU's inclusive approach to fostering deeper economic ties and technical collaboration.

#### **Conclusion:**

Based on the analysis, EU Free Trade Agreements are characterized by a sophisticated approach to addressing Technical Barriers to Trade. These agreements reference the WTO TBT Agreement, with five FTAs surpassing the TBT agreement in terms of sector-specific commitments. EU FTAs exhibit a balanced use of mutual recognition and harmonization, with a strong emphasis on transparency and comprehensive institutional mechanisms. The agreements extend beyond mere trade facilitation to include broader cooperative initiatives, enhancing technical capacity and economic integration. This strategic focus underscores the EU's commitment to maintaining high standards and predictable trade practices while fostering deeper economic ties and technical collaboration.

### **2.3.3. The Association of Southeast Asian Nations (ASEAN)**

#### **i. Reference to International Standards**

The data indicates that two of the FTAs-ASEAN-Hong Kong, China and ASEAN Free Trade Area (AFTA) promotes use of international standards. But in rest of the FTAs like ASEAN-Japan, ASEAN-India, ASEAN-Australia, there is a noticeable absence of commitments to the promotion of international standards.

#### **ii. Promotion of Mutual Recognition Agreements**

The data indicates a relatively low level of effort in promoting mutual recognition and

harmonization within ASEAN FTAs. Only two agreements—the ASEAN-Hong Kong, China Free Trade Agreement (AHKFTA) and the ASEAN Free Trade Area (AFTA)—have mutual recognition in force. Furthermore, commitments to mutual recognition are limited to conformity assessments and technical regulations, with no such commitments observed for standards.

### iii. Provisions of Dispute Settlement

The ASEAN FTAs demonstrate strong commitments to effective dispute settlement mechanisms. Specifically, five out of the seven FTAs have established regional bodies dedicated to resolving disputes. Furthermore, six of these agreements include provisions for regional consultations designed to address disputes. Additionally, many of the FTAs incorporate mechanisms for issuing recommendations as part of their dispute resolution processes.

### iv. Cooperation and Capacity Building Features

ASEAN FTAs include several cooperation and capacity-building features, reflecting a notable commitment to cooperation beyond immediate trade concerns:

- **Administrative and Regional Bodies:** ASEAN FTAs often establish regional bodies to oversee implementation and compliance.
- **Contact Points and Consultations:** There are transparency requirements in place, such as notification periods for comments and consultations for the exchange of information, though the provision for notification period for comments is seen only in a few instances.
- **Further Cooperation among members:** ASEAN agreements include provisions for the development of common policy programs which are beyond trade related objectives, technical assistance, and cooperation in metrology, demonstrating a higher level of commitment to capacity building.

### Conclusion:

Based on the data analysis, ASEAN Free Trade Agreements reflect a varied and somewhat fragmented approach to TBT. While there is a basic reference to the WTO TBT Agreement, but commitments on integration approaches like standards, mutual recognition and harmonization efforts are limited. Dispute settlement mechanisms are generally well-established, contributing to a stable trade environment. Additionally, ASEAN FTAs show a notable commitment to cooperation and capacity building, with provisions for common policy programs and technical assistance, particularly in the ASEAN-Hong Kong, China, and AFTA agreements. However, there are significant variations in adherence to TBT provisions across agreements, indicating areas for potential improvement.

## 2.3.4 Japan

### i. Reference to International Standards

The data indicates that Japan's FTAs exhibit a low effort in promoting international standards. Only Japan-EU and Japan-UK have commitments on harmonization of international standards. Rest of the FTAs like Japan-Australia, Japan-Singapore, Japan-Switzerland, Japan-Viet Nam etc, does not focus on reference and promotion of international standards.

### ii. Promotion of Mutual Recognition Agreements

The data reveals only slight promotion of Mutual Recognition Agreements within Japanese FTAs. Only the Japan-EU and Japan-UK have mutual recognition in force. There are more commitments to MRAs related to technical regulations and conformity assessment compared to standards, reflecting a stronger focus on these areas. Also, the provision of “justifying non-equivalence by the importing country” can be seen in multiple Japan FTAs.

### iii. Provisions of Dispute Settlement

The data shows a significant commitment to dispute settlement mechanisms in Japan's FTAs. Many FTAs have a regional dispute settlement body established and a striking thirteen out of fourteen FTAs have provision of regional consultation to resolve disputes. One unique feature in nine of the Japan's FTAs is that the recourse to dispute settlement for technical regulations is disallowed, in other words, it is prohibited to use dispute settlement mechanisms to resolve disagreements or conflicts related to technical regulations in these FTAs.

### iv. Cooperation and Capacity Building Features

Japan's FTAs include several cooperation and capacity-building features, demonstrating a commitment to broader economic integration:

- **Administrative and Regional Bodies:** Regional bodies are established in 14 out of 15 agreements, indicating a strong administrative mechanism.
- **Transparency, Contact Points and Consultations:** Contact points for information exchange are present in 13 agreements, though the time period allowed for comments is specified in only 3 agreements, indicating a potential for improvement in transparency provisions.
- **Further Cooperation:** Several agreements include provisions for common policy or standardization programs and technical assistance, aiming to enhance technical capacity and overall economic integration, but there are no commitments to cooperation on Metrology.

### Conclusion:

Based on the data table analysis, Japan's FTAs exhibit a diverse approach to TBT. Most agreements reference the WTO TBT Agreement, with three extending beyond its coverage. However, Japan shows low adherence to international standards, and mutual recognition agreements are present in only two FTAs. Several agreements include commitments to institutional mechanisms, establishing regional bodies and dispute settlement processes. Furthermore, Japan's FTAs feature significant commitments beyond trade-related objectives, such as technical assistance and standardization programs.

### 3.3.5. USA

#### i. Reference to International Standards

The data indicates that the USA's FTAs exhibit very limited use of integration approaches like standards. There are no commitments to promote the use of international standards, nor are there any efforts to harmonize standards in most of its FTAs.

#### ii. Promotion of Mutual Recognition Agreements

The data reveals minimal promotion of Mutual Recognition Agreements (MRAs) within US FTAs. Mutual recognition and harmonization are rarely practiced, indicating a low level of commitment in this area. There are no commitments to mutual recognition in standards and technical regulations. However, for conformity assessment, there are some efforts in this area, as the provision of "*the burden of justifying non-equivalence on the importing country*" is included in 7 out of 9 FTAs.

#### iii. Provisions of Dispute Settlement:

The data shows a high commitment to dispute settlement mechanisms in US FTAs. Regional bodies and dispute settlement mechanisms are included in all agreements (9 out of 9). These mechanisms ensure structured processes for addressing and resolving trade-related issues, contributing to stability and predictability in trade relations. Some agreements include provisions for mandatory recommendations and regional consultations to resolve disputes.

#### iv. Cooperation and Capacity Building Features

US FTAs include some cooperation and capacity-building features, though the commitment is weaker beyond immediate trade concerns:

- **Administrative and Regional Bodies:** Regional bodies and dispute settlement mechanisms are established in all agreements.
- **Transparency:** There are strong commitments to transparency requirements. The time period allowed for comments is specified in 7 agreements, and provisions for contact points for information exchange are present in 8 out of 9 agreements, indicating a high level of commitment to transparency.



- **Further Cooperation:** Metrology cooperation is included in only one agreement, while there are no commitments to common policy or technical assistance, reflecting a lack of commitment to broader cooperation and capacity-building measures.

### **Conclusion:**

Based on the data analysis, the USA's FTAs exhibit varied commitments to addressing TBT, with limited promotion of integration approaches like mutual recognition, harmonization, and conformity assessment. The commitment to transparency is relatively high, with specified time periods for comments and established contact points for information exchange in most agreements. The commitment to institutional mechanisms is robust, with all agreements including regional bodies and dispute settlement mechanisms. However, the FTAs reflect a lack of commitment to cooperation beyond immediate trade concerns, with limited provisions for broader technical assistance and capacity-building measures.

## **2.3.6. Korea**

### **i. Reference to International Standards**

Korea's FTAs exhibit stronger commitments to harmonize standards and promote international standards. Promotion of international standards can be seen in 5 FTAs for standards and in 3 FTAs for technical regulation.

### **ii. Promotion of Mutual Recognition Agreements (MRAs)**

The data reveals a moderate promotion of Mutual Recognition Agreements within Korea's FTAs. In majority of the agreements, the mutual recognition provision primarily focus on technical regulations and conformity assessments rather than standards. Mutual recognition for standards is explicitly included only in the Korea-China FTA, whereas mutual recognition for technical regulations and conformity assessments is present in 5 of the agreements.

### **iii. Provisions of Dispute Settlement**

The data shows a strong commitment to dispute settlement mechanisms in Korea's FTAs. Out of 12 agreements, 11 include provisions for regional dispute settlement bodies, and 11 foresee regional consultations to resolve disputes. Mechanisms to issue recommendations are present in 9 agreements, and in 5 agreements, these recommendations are mandatory. This reflects a robust emphasis on structured dispute resolution processes within these FTAs.

### **iv. Cooperation and Capacity Building Features**

Korea's FTAs include several cooperation and capacity-building features, demonstrating a commitment to broader economic integration:



- **Administrative and Regional Bodies:** There is a notable presence of regional dispute settlement bodies (12 out of 13 agreements) and regional consultations to resolve disputes.
- **Transparency Requirements:** Transparency requirements are notable, with the time period allowed for comments specified in 9 agreements, and contact points or consultations for information exchange also included in 9 agreements.
- **Technical Assistance and Further Cooperation:** Commitments on common policy or standardization programs are mentioned in 3 agreements, technical assistance is present in 7 agreements, and metrology cooperation is noted in 5 agreements. These features emphasize efforts toward capacity building and technical precision in fostering deeper economic and technical integration.

### **Conclusion:**

Based on the data table analysis, Korea's FTAs demonstrate a varied approach to addressing TBT. They show a strong commitment to harmonizing and promoting international standards, although there is a notable lack of MRAs specifically for standards. The emphasis on transparency is moderate, with specified periods for comments and established contact points for information exchange. The dispute settlement mechanisms are robust, with many agreements including regional dispute settlement bodies and consultations to resolve disputes. Additionally, Korea's FTAs include significant commitments beyond trade-related objectives, such as technical assistance, standardization programs, and metrology cooperation, indicating a comprehensive approach to economic integration and capacity building.

### **2.3.7. India:**

A Historical Overview of India's Approach to TBT Chapters in FTAs

#### **i. Reference to International Standards**

The data indicates that three of India's recent Free Trade Agreements — with Mauritius, the UAE, and Australia — have strong commitments to promoting international standards. In contrast, the remaining FTAs lack binding commitments to reference or promote international standards.

#### **ii. Promotion of Mutual Recognition Agreements (MRAs)**

The data reveals limited promotion of Mutual Recognition Agreements within Indian FTAs. For Standards, only the India-UAE agreement has mutual recognition in force. While for technical regulations and conformity assessment, three agreements include mutual equivalence provisions. This indicates potential for India to enhance its trade landscape by expanding MRAs with key trading partners and strengthening efforts to harmonize with international standards.

### iii. Provisions of Dispute Settlement

The data shows a strong commitment to dispute settlement mechanisms in India's FTAs. Ten agreements establish regional dispute settlement body. Additionally, eight agreements facilitate a mechanism for the dispute settlement body to issue recommendations, with six of these agreements mandating that the recommendations be followed.

### iv. Cooperation and Capacity Building Features

India's FTAs include several cooperation and capacity-building features, demonstrating a commitment to broader economic integration:

- **Administrative and Regional Bodies:** Thirteen agreements establish regional administrative bodies.
- **Transparency Requirements:** Six agreements establish stronger commitments towards contact points for information exchange. However, none of the agreements have a strong commitment towards a time period for comments, indicating a need for improvement in transparency.
- **Technical Assistance and Further Cooperation:** Two agreements mention common policy or standardization programs, highlighting efforts toward more integrated and standardized practices. Technical assistance is a significant feature in four agreements, facilitating capacity building and support among member nations. Additionally, metrology cooperation is noted in the India-UAE agreement, emphasizing the importance of standardized measurements and technical precision in fostering deeper economic and technical integration.

### Conclusion:

Based on the data table analysis, India's FTAs reflect a multifaceted approach to addressing TBT. There is a strong reference to the WTO TBT Agreement, though efforts in mutual recognition and harmonization are limited. The commitment to institutional mechanisms is vigorous, with many agreements establishing regional administrative bodies and dispute settlement processes. Additionally, India's FTAs include significant commitments beyond trade-related objectives at least in its recent FTAs, such as technical assistance and standardization programs, indicating a comprehensive approach to economic integration and capacity building. Notable agreements such as India-Mauritius, India-UAE, and India-Australia are more comprehensive, while agreements like India-Sri Lanka and India-Bhutan have minimal commitments.

## 2.4. Takeaways for India from Global FTA trends

India's approach to Technical Barriers to Trade in its trade agreements reflects a growing alignment with global norms, particularly the WTO TBT Agreement. By adhering to the same definitions and terminologies as the WTO, India ensures a consistent framework for its

international trade partners. In recent years, India has even gone beyond these basic commitments in its FTAs, often including sector-specific provisions that extend the scope of its TBT commitments.

However, while India has made strides in aligning with global standards, its commitment to mutual recognition of standards, technical regulation or conformity assessment procedures remains inconsistent. Our earlier comparative analysis of FTAs involving major economies show that India is not alone in such lack of ambition in these areas. The India-UAE FTA is one of the few exceptions where India has shown a strong commitment to mutual recognition of standards.

Other agreements, such as those with Mauritius, the UAE, and Australia, include some provisions for mutual recognition in technical regulations and conformity assessment, but they lack a comprehensive framework to enforce these principles. This lack of a robust system for mutual recognition or equivalence creates challenges for achieving deeper integration in international trade.

The concept of equivalence in trade agreements is crucial, as it allows countries to accept each other's standards, technical regulations, and conformity assessments if they achieve the same objectives. However, India's FTAs often leave the burden of justifying non-equivalence ambiguous, making it difficult for importing countries to reject another country's standards without a clear rationale. This lack of clarity and the absence of a specific timeline for achieving mutual recognition can lead to uncertainties and potential trade disputes.

Moreover, while the WTO encourages the use of multilaterally agreed-upon standards to prevent unnecessary trade obstacles, in practice, countries often develop their own standards based on national policy goals. These divergent standards can create significant trade barriers, forcing foreign firms to bear additional costs to meet country-specific requirements. Unlike some other economies, India has not taken strong steps to promote the harmonization of these standards in its trade agreements. The European Union and South Korea, for example, have established stronger commitments to standard harmonization, showing a more proactive approach to minimizing trade barriers.

In its recent FTAs, India has made relatively more progress in the mutual recognition and harmonization of technical regulations than in standards. For instance, while the India-UAE FTA includes mutual recognition and harmonization of standards, such efforts are more commonly seen in the technical regulation provisions in FTAs with Mauritius, the UAE, and Australia. Despite this progress, there is still significant room for improvement. The mutual recognition and harmonization of technical regulations, while more frequent, are not yet comprehensive, especially when compared to the more structured approaches of the European Union, Japan, and South Korea.

India's commitments to mutual recognition and harmonization in conformity assessment also reveal both progress and limitations. While FTAs with Mauritius, the UAE, and Australia include such commitments, they often lack deeper elements such as the use of regional or international standards and clear guidelines on the burden of justifying non-equivalence. These gaps suggest that, while India is moving towards greater alignment with international standards, it has yet to fully embrace the practices seen in agreements involving more advanced economies like the EU and South Korea.

Transparency is another area where India's FTAs show varying levels of commitment. Although India has established effective structures for contact points and information exchange in its recent agreements, its notification provisions often fall short of global benchmarks. For example, unlike the extended comment periods seen in the agreements of the EU, Japan, USA, and Korea, India's FTAs do not consistently mandate longer periods for public comments. This reflects relatively weaker transparency commitments, indicating that India still has room to align more closely with global standards in its trade practices.

Overall, India has made strides in aligning its trade agreements with global standards, but there are areas where further integration and commitment are needed. As India continues to negotiate and implement FTAs, there remains a considerable opportunity to strengthen its approach to mutual recognition, harmonization, and transparency, ensuring that it can fully leverage the benefits of international trade.

### **3. India's Forward-Looking Strategic Approach to Negotiating TBT Chapters with Potential FTA Partners**

Since 2021, India has concluded Free Trade Agreements (FTAs) with various countries and groups, such as Mauritius, the UAE, Australia, and the European Free Trade Association (EFTA).<sup>18</sup> Furthermore, significant headway has been made in negotiations with the UK and Oman, and ongoing talks are underway with the EU, Peru, and other countries. These initiatives underscore India's dedication to broadening its trade partnerships and bolstering its economic influence on a global scale.

Effectively tackling TBTs in FTAs is essential to fully capitalize on the advantages of trade liberalization. The TBT provisions facilitate market access by harmonizing standards and

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<sup>18</sup> The Comprehensive Economic Cooperation and Partnership Agreement (CECPA) is a free trade agreement (FTA) between India and Mauritius that was signed on February 22, 2021 and came into effect on April 1, 2021, India-United Arab Emirates (UAE) Comprehensive Economic Partnership Agreement (CEPA), a free trade agreement (FTA), came into effect on May 1, 2022. The two countries signed the agreement on February 18, 2022, India-Australia- Economic Cooperation and Trade Agreement (ECTA) entered into force on 29 December 2022, India-European Free Trade Association signed a Trade and Economic Partnership Agreement (TEPA) on 10th March 2024

regulations, which in turn reduces the costs and complexities businesses face. Enhanced regulatory cooperation between countries promotes a more predictable trading environment, fostering economic growth and competitiveness for all involved parties.

India's ability to negotiate ambitious provisions are limited by the relative lack of capacity of its own national institutions responsible for the development of standards, technical regulations, and conformity assessments. As discussed earlier in this paper, these critical challenges arise from deficits in terms of adequately trained human resources, infrastructure, and in many cases budgets. Such deficits are exacerbated by expansive mandates for responsible agencies that include standard development, monitoring and enforcement all rolled into one.

Further, in most cases, a single institution has the mandate for both domestic market and management of imports and exports. While a single agency having responsibility for both at-the-border and behind the border monitoring and enforcement is common practice, given the size and complexity of the Indian market, and aforementioned capacity deficits, this adds to the challenges of already thinly spread organizations.

Since these agencies are the critical stakeholders for the TBT related chapters in FTAs, India's level of ambition has often been constrained by the genuine concerns of these agencies of committing to more ambitious mandates related to mutual recognition of technical regulations or even more importantly conformity assessment procedures.

Trade facilitating commitments related increased transparency measures, accountability to scientific evidence in the development of standards or technical regulations and other associated disciplines that subject regulators and enforcement agencies to greater scrutiny and therefore accountability have also been largely avoided due to genuine concerns on the part of several Indian agencies in terms of their institutional ability to comply with these commitments.

Given that more advanced economies (OECD member states) will be the most aggressive users of standards and other non-tariff measures in the foreseeable future, agreeing to such disciplines in trade agreements involving such countries, or including such provisions during review of existing agreements, would have served Indian export interests.

Subjecting these advanced economies to disciplines related to transparency and accountability would have provided an opportunity to Indian economic agents to more effectively push back against ad-hoc measures or unjust enforcement.

Commitments for time bound mutual recognition of technical regulations or conformity assessment procedures with associated capacity building would also been useful and significantly reduced exporter transaction costs. Explicitly targeting specific sectors in this time-bound schedule would have added further value.

Being fully cognizant of the current institutional and capacity deficits, commitments could have been undertaken with a significant transition period and included capacity building commitments during the transition period from the more advanced countries. The transition period could have been used to make the necessary investments in India's agencies which would have helped India's own quality and standards eco-system and added to the country's overall export competitiveness. Many countries have used this strategy of using trade commitments and their 'coming into force' as a catalyst drive otherwise difficult domestic reforms or reforms in areas otherwise treated as low priority.

India's FTA strategy should focus on leveraging these agreements to build and enhance the institutional capacity of its standard setting bodies, bodies responsible for technical regulations and those responsible for enforcement at the border (i.e., the Participating Government Agencies or PGAs). While recognizing the current institutional gaps and challenges faced by Indian regulatory bodies, the strategy should not be limited by these weaknesses. Instead, it should aim to address India's long-term export interests by strategically improving key areas. Strengthening the institutional capacity of PGAs will better position India during negotiations, enabling the country to bridge regulatory shortcomings and achieve significant economic milestones.

With the above objective in mind, India shall endeavour to have following Forward-Looking Strategic Approach to Negotiating TBT Chapters with Potential FTA Partners.

### **3.1. Development of Institutional Capacity to Strengthen the Risk Management System and Create an Effective Market Surveillance Mechanism**

Risk Management Systems (RMS) supported by effective monitoring systems and audits offers a proactive approach to compliance and quality assurance that can streamline processes and enhance efficiency for businesses and regulatory bodies alike.

To create a trustworthy and effective risk management system that is credible and therefore be trusted by trade partners, national regulators have to ensure that there are systems in place to monitor and enforce compliance with rules. This can be done by using random sampling and regular checks. Regular checks can be at the product level, i.e. market surveillance at the retail and distribution stage. Checks can also be at the process level, where a firm's internal management systems to comply by standards are audited to check their effective implementation at the plant level or beyond.

These systems help combine trust with careful oversight. Random checks, audits, and clear penalties for not following the rules—such as fines or losing the right to export—are important to prevent violations. India can adopt a similar approach, where reliable exporters enjoy simpler



processes but still face regular inspections. This would make the system more credible, enhance regulatory efficiency, and create a smoother trading experience.

Such strong oversight and accountability would also build trust with global partners. This would encourage them to enter into substantive MRAs with Indian regulators with greater confidence, knowing that India has a robust standards eco-system including from monitoring and enforcement. Let us discuss some of the specific aspects of development and reforms of our overall ecosystem of product quality and standards ecosystem that can be made integral to TBT chapters in FTAs to ensure greater facilitation for Indian exporters in the destination market.

### **3.1.1 Risk Management Systems at the border to manage imports**

The National Committee on Trade Facilitation (NCFT) mandates that Partner Government Agencies (PGAs) in India develop Risk Management Systems (RMS) to enhance trade facilitation. According to Action Number 14 of the NCFT's National Trade Facilitation Action Plan (NTFAP) 2020-2023, there is a directive to integrate the RMS of Customs and PGAs, where feasible, with the goal of reducing overall interdiction rates to 10% for imports, as referenced in TFA provision 7.4. This initiative is categorized under TFA Plus, with stakeholders including the Central Board of Indirect Taxes and Customs (CBIC), the Logistics Division, the Ministry of Commerce and Industry (MoCI), and all PGAs, with a medium-term implementation schedule.

The NTFAP recommendations highlight several key requirements: CBIC must periodically update on interdiction levels at customs ports, communicate RMS criteria proposed by PGAs, and PGAs are expected to report periodically on interdiction levels. These measures indicate India's commitment to incorporating RMS and risk assessment into its trade systems, with potential for further enhancement.

Developing effective Risk Management Systems for partner government agencies (PGAs) are part of WTO Trade Facilitation Agreement (TFA). But RMS for PGAs is a 'best endeavour' clause in TFA<sup>19</sup>. Binding commitments in our FTAs would help facilitate trade at both borders (i.e., export and import) and make regulators on both sides more transparent and accountable. This in the larger interests of businesses. In many cases Indian businesses import for use in export related manufacturing, so procedural efficacy of the import process is equally important.

### **3.1.2. Risk based monitoring of domestic market and use of market surveillance:**

Enabling Supplier Self Declaration for Conformity with standards and technical regulations.

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<sup>19</sup> WTO, Trade Facilitation Agreement, Article 7, Section 4

In addition to these mandated reforms under NTFAP, Indian regulators responsible for enforcement of product quality and standards should consider developing a domestic framework of effective risk-based monitoring combined with a robust Market Surveillance mechanism, aligned with the Indian National Strategy for Standardization (INSS).<sup>20</sup> This would be essential to acceptance of Indian firms Supplier's Declaration of Conformity (SDoC) by regulators in other countries.

SDoC of Indian firms would be credible to foreign regulators only if they have the confidence that India's domestic regime subjects these firms to effective risk-based monitoring that includes periodic market surveillance mechanisms that include random sampling and testing at factory, and at wholesale and retail levels of distribution.

Conversely, if Indian regulators allow acceptance of FTA partner country firm's SDoC, i.e., allows facilitated entry of foreign products on risk-managed basis, they need to have a mechanism whereby they can randomly bring about greater screening and scrutiny of these products in India once they have entered the domestic body of commerce, i.e., at their distribution or retail stage. Having this monitoring mechanism will provide Indian regulators the confidence that they can continue to hold imported products accountable through the commercial life-cycle and not just at the time of their entry into India.

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<sup>20</sup> **Pillar 3 of INSS- Technical Regulations and SPS Measures**

**Goal 6- Create an effective market surveillance mechanism-**Presently market surveillance and other enforcement measures are handled by State Government agencies and custom officials at the port who are not best equipped in terms of technical understanding, resources and empowerment. As the requirements for post-market surveillance and testing including cyber intelligence are expected to increase in future it is necessary to establish a professional agency for carrying out or coordinating the market surveillance programme (recommended in Conformity Assessment Goal 1) and port control operations. Market surveillance should invariably include testing of products drawn from the market and in cases of wilful deceptive practices, statutory actions to prevent further supplies.

**Goal 1- Develop a sound understanding of good regulatory practices and regulatory impact assessment-** As regulations are issued to protect and balance the needs of civil society and its various interest groups, they need to be precisely calibrated to the risks in context with the times, entail minimal cost burden, should be easy to comply, and be transparently administered. They must not impede social development and economic growth. Inappropriately applied technical regulations may lead to higher prices of goods and services, lack of product innovation and poor service quality. As regulations have the tendency of losing relevance with time, they need to be regularly recalibrated for effectiveness and purpose. All technical regulations and SPS measures should be based on the principles of good regulatory practices that include a risk based selection of regulatory measures, considerations of regulatory efficiency, i.e. balance between costs of compliance and administration versus gains; effectiveness in compliances; transparency in notification, administration and changes; openness in communications and balancing of interests. Technical regulations should also be assessed for impact on benefits against costs, economic burden on government, and impacts on the competitiveness of the industry, market openness, small businesses, public sector and potentially affected social groups.

Policy guidelines based on good regulatory practices and regulatory impact assessment need to be established for the development, implementation, review, and revision of Technical Regulations.

It is also necessary to create a thorough understanding of the importance of following good regulatory practices and regulatory impacts among ministries, regulatory bodies, state governments, enforcement agencies, conformity assessment bodies and social groups. Civil Services Academies should initiate awareness courses and workshops on the subject.



One should not underestimate the Supplier's Declaration of Conformity (SDoC) as a trade facilitating Conformity Assessment Procedure that can help Indian exporters significantly. This approach offers several benefits, such as reducing transaction costs for Indian exporters, decreasing administrative costs for regulators, and providing greater flexibility in choosing product testing locations. Not only should India insist on the inclusion of disciplines related to risk-based approaches of border management related to enforcement of standards and technical regulations, but also consider detailed provisions related to the acceptance of SDoC by Indian firms. Such detailed provisions should include indicative levels of facilitated green-channel treatment and associated risk managed interdiction rates i.e., what percentage of Indian exports accompanied by SDoC would be subjected to any further scrutiny, screening or testing such shipments would be subjected to by FTA partner country.

Indian exporters enjoying the benefits of much higher levels of facilitation at the border due to acceptance of Indian SDoCs is a great example of how principles negotiated in Indian FTAs in TBT chapters need to be supported by institutional development and reforms in India's domestic institutional and regulatory ecosystem. Along with market surveillance of products, another key element in developing robust self-certification systems are regular audits of internal management processes of firms.

### **3.1.3. Role of audit in development of credible Self-certification**

Self-certification allows companies to verify their own adherence to standards and regulations, which can significantly reduce the time and cost associated with third-party certification. For instance, in the European Union, companies in certain sectors are allowed to self-certify their products under the CE marking system. But in order to qualify for the self-certification regime firms have to demonstrate that they have adequate internal management to monitor and maintain compliance. This approach enables businesses to expedite market entry and reduce reliance on external bodies while maintaining high standards of quality and safety.

Complementing self-certification with regular internal and external audits further reinforces the credibility of the process. Audits help verify the accuracy of self-certification claims and ensure ongoing adherence to relevant standards and regulations. For example, in the United States, companies in industries such as pharmaceuticals and food processing use internal audits to continuously monitor their compliance with FDA regulations and GMP standards. This model not only empowers companies to take greater control of their compliance processes but also fosters a culture of accountability and continuous improvement, ultimately supporting more effective and streamlined regulatory frameworks.

### **3.1.4. Taking comprehensive and binding Commitments on TBT Chapter Disciplines that help Indian exporters:**

Using Transition Period for Domestic Institutional Development Negotiating disciplines related

to RMS and self-declaration and getting actual benefits for Indian businesses depends on whether Indian domestic ecosystem is adequately prepared, and its mechanisms of domestic enforcement, monitoring and audit are robust and credible enough to be extended the facilitations that are negotiated in principle in the TBT chapter by the partner country. In other words, whether Indian regulators have in place RMS for imports, effective monitoring market surveillance, a system of regular audits.

Since Indian regulators might not be adequately prepared or have the systems in place to leverage such disciplines, proposing a transitional period would allow India to build the necessary regulatory and compliance infrastructure to help to support effective market surveillance and a system of audits. All of this would lead to credibility and acceptance of Supplier's Declaration of Conformity (SDoC) issued by Indian firms. But incorporating these disciplines as a binding commitment, but one that comes into force at a future date conditional to adequacy of each country's systems, will help institutionalize the pathway to substantive outcome from such negotiated disciplines in TBT Chapters of FTAs.

This approach once again underlines another important aspect, i.e., leveraging trade commitments to drive domestic reforms that are important from both an economic efficiency and competitiveness point of view as well as from achieving broader societal objectives. A robust system of enforcement of standards and associated technical regulations, especially that impact health and lives of Indian citizens is important both in terms of driving overall competitiveness of Indian manufacturing.

But these systemic reforms are also important from the societal goal of ensuring adequate consumer rights for India's citizens, not to mention the fundamental of 'Right to Life'. Such a 'Right to Life' in both spirit and substance encompasses that right not being diluted by challenges to citizen's health and safety due to proliferation of poor quality and unsafe products arising from systemic weaknesses in monitoring through surveillance and targeted enforcement using risk management principles.

### **3.2. Facilitating trade and reducing compliance burden through Mutual Recognition Agreements in Standards, Technical Regulations, and Conformity Assessment**

India currently lacks strong commitments on mutual recognition or harmonization of standards in its trade agreements.<sup>21</sup> However, there is significant potential for India to negotiate Mutual Recognition Agreements (MRAs) in standards, technical regulations, and conformity assessment. MRAs cannot be negotiated in using formulaic approaches that are used for tariff liberalization for goods or basis standardized scheduling techniques used in the case of services.

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<sup>21</sup> See Data Analysis at [Annexure-1](#)

MRAs are often specific to broad sectors, and the expertise required to negotiate them effectively are limited to trade and technical experts involved in such specialized work. Thus the negotiating ability and investment of resources is much more than the more well established and generic negotiations needed for tariff liberalization in goods or market access for services.

This resource intensiveness of negotiations often becomes the defining constraint for taking on ambitious commitments in these areas. However, MRAs have been instrumental in facilitating trade among many countries, reducing time and shipping costs associated with testing and conformity assessment of products in third-country laboratories.

As countries increasingly lower their MFN applied tariff rates, non-tariff measures and associated costs related to their compliance become the defining trade barrier. If a competitor country lowers the cost of market access with India's FTA partner through MRAs for technical regulations or conformity assessment procedures in key sectors while India fails to do so due to lack of capacity and adequate investment of resources, then in the longer-run India's export competitiveness vis-à-vis such competitors will suffer.

Existing empirical evidence suggests several economic benefits of MRAs:

- a) **Reduced Fixed Costs:** MRAs lower the total fixed cost of conformity procedures by allowing firms to use the same conformity assessment bodies (CABs) for both domestic needs and multiple export destinations.
- b) **Reduced Marginal Costs:** MRAs decrease the marginal costs of conformity assessment, as different firms sell different product varieties to various markets. If MRAs can be strategically used to facilitate rationalization of this system, i.e., leading to a situation where a single testing lab can be empowered for testing an entire portfolio of similar products (and for similar types of testing and certification) will reduce the cost for each product category through economies of scale. It will also reduce the complexity and costs for MSME exporters since they too can negotiate better rates for multiple tests and certification (including those needed for the domestic market), and can avoid the trouble of having to work with multiple lab agencies.
- c) **Increased Competition:** MRAs boost competition in the conformity assessment sector, providing exporters, especially SMEs, with a wider range of CABs to choose from. Essentially, they can choose to use CAB in their origin country or in the export destination. This overall element of competition in the system can drive down costs and improved quality to the advantage of exporters, especially as export volumes grow.

### **3.3. Requirement of strict proof and reasons for deviation from international standards**

Pursuant to TBT agreement, “technical regulations”<sup>22</sup> (“TR”) need to adhere to certain provisions to demonstrate they are not technical barriers to trade<sup>23</sup>. Further, there is a mandatory requirement to demonstrate the necessity of a TR.<sup>24</sup> It is worth noting that historically, advanced countries have tended to deviate from international standards as a strategy to create non-tariff barriers to trade. As discussed earlier, any deviation from an international standard will require either tweaking the production line for just one country market and/or require undergoing an expensive compliance related procedure(s). These additional transaction costs will drive MSMEs out of the market.

Thereby, Indian exporters to more advanced country markets are more likely to face challenges from such deviations than vice-versa. It needs to be noted that given technological developments and product development strategies TRs will emerge in key sectors that will drive global trade such as electronics, internet of things (IoT) related equipment, nano-technology products in engineering and electronics, technical textiles, new types of fabrics and garments biotechnology applications in pharmaceuticals, bespoke customized medicines, processed foods, organic

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<sup>22</sup> Paragraph 1 of Annex 1 to TBT Agreement, a technical regulation is; Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method

<sup>23</sup> i. Compliance with MFN and National Treatment Principle. (Art 2.1)

ii. Ensuring that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. (Art 2.2)

iii. Technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective. Such legitimate objectives are, inter alia: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment. (Art 2.2)

iv. Technical regulations shall not be maintained if the circumstances or objectives giving rise to their adoption no longer exist or if the changed circumstances or objectives can be addressed in a less trade-restrictive manner. (Art 2.3)

v. When TR are required and there exist relevant international standards. Members shall use them or their relevant parts for their TR except when such international standards or parts thereof may be ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued. (Art 2.4)

vi. Members shall ensure that all technical regulations which have been adopted are published promptly. (Art 2.11)

<sup>24</sup> Members must notify when two conditions apply:

(1) Whenever a relevant international standard or guide or recommendation does not exist, or the technical content of a proposed or adopted technical regulation or procedure is not in accordance with the technical content of relevant international standards or guides of recommendations; (Art 2.9)

(2) If the technical regulation or conformity assessment procedure may have a significant effect on the trade of other Members (Art 5.6).

Draft regulations should be notified to the WTO Secretariat, if possible sixty days prior to their formal adoption so as to allow time for other Members to make comments. Regulations can also be notified ex-post whenever urgent problems of safety, health, environment protection arise (Articles 2.10 and 5.7). Local Governments at the level directly below central government are required to notify technical regulations and conformity assessment procedures which have not been previously notified by their central government authorities (Articles 3.2 and 7.2).

As a complement to the obligation to notify, each WTO Member must set up a national enquiry point. This acts as a focal point where other WTO Members can request and obtain information and documentation on a member’s technical regulations, standards and test procedures, whether impending or adopted, as well as on participation in bilateral or plurilateral standard-related agreements, regional standardizing bodies and conformity assessment systems (Art 10).

products agriculture (seeds), and fertilizers.

Multiple technical regulations related to sustainability covering a wide range of products and extending to packaging will also emerge. As technologies like 3D printing evolve, technical regulations covering such production will also start developing.

Advanced countries will be standard setters in these areas and likely deviate from international standards. Thus, there is even more pressing need to explore ambitious commitments in TBT chapters that bring in some accountability and checks and balances on regulators of partner countries, especially if they are deviating from international standards and adding to cost and complexity of compliance.

Having similar checks and balances on Indian regulators reciprocally is also a positive outcome from an Indian perspective. Since standards and associated technical regulations will also apply on Indian firms domestically, driving transparency, accountability and trust will ensure that standards and associated technical regulations are not framed arbitrarily, are based on sound scientific evidence and stakeholders are properly involved in the process. It might also include effective regulatory impact assessment prior to promulgation of such regulations. All of this would ensure that standards framed by Indian regulators are easy to adopt and implement by firms, and that they do not end up adding cost and complexity and that negatively impacts Indian industry and its competitiveness.

### **3.4. Conformity Assessment fees should reflect the cost of services rendered to promote transparency**

This would benefit Indian exporters by providing greater certainty and accountability in terms of fees charged, this is critical especially in light of the fact that the cost of technical services is higher in the developed countries compared to India. Further, this will be instrumental to hold the trading partner accountable to maintaining fees and charges that reflects the actual costs of services rendered would be important.

Further, it needs to be noted that firms in the developed nations are much larger, and any plans to use 'higher fees' through lesser accountability on fees and charges as an impediment to trading exporters are likely to be ineffective as the marginal cost of such fees on larger firms are not significant. On the other hand, lack of transparency and higher fees by foreign regulator/agencies will become a major impediment for Indian MSMEs.

In view of above, it is instrumental that the obligation to ensure that the conformity assessment fees reflect the cost of services rendered should be equally applicable to the private CABs. Some of the most important private agencies that are accredited as Conformity Assessment Bodies

(CABs) in India are of European or US origin. These organizations include AGSI Certification Pvt. Ltd., Assure Quality Management Certification Services Pvt. Ltd. (AQMCS), Bureau Veritas India Pvt. Limited, Novo Star Management Systems Solutions India Pvt Ltd, TUV India Pvt. Ltd.<sup>25</sup> Without adequate oversight, there is a risk that foreign private CABs may exploit their position and charge unreasonably high fees, especially in the absence of any obligation to disclose the breakdown of the elements comprising the conformity assessment tests.

### **3.5. Evaluation of potential models to strengthen institutional capacity building**

#### **3.5.1. PPP models to enhance Conformity Assessment**

Public-Private Partnership (PPP) models represent a strategic approach to enhancing conformity assessment in the context of Technical Barriers to Trade (TBT) by leveraging the strengths and resources of both public and private sectors. These partnerships can significantly improve the efficiency and effectiveness of conformity assessment processes, which are crucial for ensuring that products meet international standards and regulations. In a PPP model, the government can collaborate with private entities such as testing laboratories, certification bodies, and industry associations to develop and maintain robust conformity assessment frameworks.

For instance, in the European Union, the PPP model has been successfully utilized to streamline and enhance the efficiency of conformity assessments through collaborations between national authorities and private certification organizations. This approach not only improves the speed and accuracy of testing and certification processes but also reduces the overall cost burden on businesses.

By integrating the expertise and innovation of private sector players with the regulatory oversight and public service focus of government agencies, PPP models facilitate the establishment of high-quality, internationally recognized testing facilities and certification programs. Additionally, such models can help in the rapid adoption of emerging standards and technologies, ensuring that the conformity assessment infrastructure remains current and effective. For example, India's collaboration with private sector entities to set up advanced testing laboratories for electronics and pharmaceuticals demonstrates how PPPs can enhance the capability to meet global standards, thus facilitating smoother access to international markets.

Overall, PPP models in conformity assessment enhance the capacity and efficiency of regulatory frameworks, reduce compliance costs for businesses, and ensure that products meet stringent international standards, thereby fostering greater global trade integration and competitiveness.

#### **Table 3: Enhancing Competitiveness through Strengthened Standards: Empowering India's 'Vocal for Local' Initiative**

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<sup>25</sup> Ministry of Commerce and Industry, Department of Commerce, India Standards Portal, Accessed October 7, 2024, <https://indiastandardsportal.org/AccrediatedCabs.aspx>



## **Enhancing Competitiveness through Strengthened Standards: Empowering India's 'Vocal for Local' Initiative**

The 'Vocal for Local' initiative stands to gain substantial momentum from the development of a strengthened standards ecosystem, particularly as India's middle class expands and its purchasing power increases. As the Indian consumer base grows and becomes more affluent, there is a rising demand for high-quality products that adhere to international standards. This shift in consumer expectations is driven by increased exposure to global brands and heightened awareness of quality and safety. Local products that fail to meet these evolving standards are at risk of being overshadowed by higher-quality imports, which can offer superior attributes due to stringent compliance with global benchmarks.

For instance, consider the Indian textile industry. With rising income levels and a growing middle class, there is an increasing preference for garments that adhere to international quality and safety standards. Indian textile manufacturers, such as those producing garments for export markets, are already required to meet stringent standards like the

Global Organic Textile Standard (GOTS) for organic textiles or the OEKO-TEX Standard 100 for consumer safety. By strengthening local standards and regulatory frameworks, Indian textile producers can ensure that their products meet these international

requirements, making them more competitive both domestically and internationally. This alignment not only helps local brands retain their market share against foreign competitors

but also boosts their reputation among increasingly quality-conscious consumers.

Similarly, in the food and beverage sector, the growing demand for quality and safety-driven by India's expanding middle class necessitates adherence to rigorous standards. For example, local dairy producers are now faced with competition from international brands that adhere to advanced food safety standards. By investing in local standards

infrastructure and aligning with international norms, Indian dairy producers can ensure their products meet the high expectations of domestic consumers. This could involve implementing practices that align with global food safety certifications, such as ISO 22000, which helps ensure the safety and quality of food products.

The electronics industry provides another compelling example. With technological



advancements and increased disposable income, Indian consumers are seeking high-quality, durable electronics that comply with international standards. Local manufacturers of consumer electronics, such as smartphones and home appliances, need to meet these standards to remain competitive. For instance, adhering to the International Electro Technical Commission (IEC) standards can enhance the quality and reliability of electronic products. By strengthening local testing and certification processes, Indian electronics firms can ensure that their products meet these international benchmarks, thereby increasing their appeal to both domestic and international markets.

In summary, the 'Vocal for Local' initiative can be significantly bolstered by developing a robust standards ecosystem. As India's middle class grows and consumers become more discerning, local products must meet high international standards to remain competitive. Investing in a strong local standards and regulatory framework not only helps local businesses meet these expectations but also enhances their competitiveness by ensuring product quality and safety. This, in turn, supports the broader goal of promoting local brands and driving economic growth through increased consumer confidence and market share.

#### **4. Conclusion: Key Policy Recommendations**

To benefit in the medium to long term, India must advocate for stronger TBT Chapters in FTAs. Improving governance institutions related to standards, enhancing capacity and infrastructure, and promoting the ease of doing business will support the ongoing governance reforms initiated by the Hon'ble Prime Minister. A more ambitious TBT Chapter will further these reforms and aid in building robust institutional capacity. By committing to these provisions with adequate transition periods, India's institutions will have the necessary time to develop capacity and avoid immediate constraints. Additionally, allocating sufficient resources to standard-setting bodies and enforcement agencies is crucial for effectively implementing technical regulations both at the border and domestically.

Promotion of international standards are essential as they serve as catalysts for integrating these standards into a country's domestic regulatory framework. When a country commits to recognizing international standards in its trade agreements, it sets the stage for those standards to be adopted within its own legal and regulatory systems. This commitment not only facilitates smoother international trade but also drives the alignment of domestic rules and regulations with global norms.

Standards are the foundational building blocks for technical regulations and conformity assessments; without a solid commitment to standards, efforts to harmonize technical regulations and conformity assessments will lack a critical starting point. Thus, when FTA partner countries mutually commit to adhere to the same international standards, it provides a common reference

point thus making it easier for MRAs to be negotiated for standards and technical regulations.

Mutual recognition agreements, especially for some key sectors of export would go a long way in reducing costs and complexity for Indian exporters. While mutual recognition of standards or technical regulations can typically more difficult to achieve, mutual recognition conformity assessment is lower-hanging fruit. India's approach in FTAs should be to push for a broad commitment to negotiate such MRAs in a time-bound manner, specific identification of agencies (perhaps included in an Annex) who will be responsible for doing so from both FTA partners, and a regular review mechanism to ensure that FTA partners relevant agencies are not deliberately trying to avoid such MRAs with their Indian counterparts. In addition, specific commitment on important sectoral MRAs could be included within the agreement itself.

Since Indian regulators themselves might be challenged to negotiate such MRAs given institutional short-comings and resource deficits, FTAs should be used as a catalyst for capacity building and resource augmentation. Lack of capacity cannot become a constraining factor for not pursuing such MRAs that will help Indian exporters, and in turn not pushing for more objective and specific commitments on MRAs in our FTAs.

Risk management systems are critical elements of facilitating trade and recognized as such in the WTO TFA. Risk management as a principle includes both at-the-border risk management, but also risk-based targeted monitoring and enforcement system that applies to domestic compliance with standards and technical regulations. Committing to facilitative measures such as suppliers' declaration of conformity can only be negotiated if India has in place the institutional framework for effective risk-managed domestic monitoring. India should consider pursuing such disciplines so that Indian exporters can benefit from FTA partner country accepting their self-declaration of compliance thus saving significant cost and complexity for them. Since there is need for institution building and system development on part of many Indian regulators in order to effectively leverage such commitments, transition period in FTAs can be considered giving Indian regulatory agencies time to push through these important reforms.

Further, the impact assessment of regulations, particularly Technical Regulation (TR), is a crucial element of governance reform. A key objective of our present administration is to improve ease of doing business, making impact assessments an integral part of the Government of India's operations. Including a commitment to impact assessment could advance governance and regulatory design goals. However, imposing strict obligations might overwhelm Indian regulators, so a softer commitment could be more feasible. India could adopt a less stringent language, such as "shall endeavour," without making the obligation subject to FTA dispute settlement, as seen in the EU-New Zealand (2017) agreement. This approach would demonstrate India's commitment to impact assessment and improve its technical regulations regime.

In sum, India's strategic approach to negotiating TBT Chapters in FTAs should focus on leveraging these agreements to strengthen institutional capacities and regulatory frameworks.

This will not only help bridge existing gaps but also position India to take full advantage of global trade opportunities, ensuring sustainable economic growth and development.

## 5. References

Espitia, A., Pardo, S., Piermartini, R., and Rocha, “*N. Technical Barriers to Trade*”. Washington, DC: World Bank; San José, Costa Rica: Batalla; Geneva, Switzerland: World Trade Organization, 2020.

Mattoo, Aaditya, Nadia Rocha, and Michele Ruta. “*Handbook of Deep Trade Agreements*”. Washington, DC: World Bank, 2020.

World Trade Organization. World Trade Report 2012: “*Trade and Public Policies: A Closer Look at Non-Tariff Measures in the 21st Century*”. Geneva: World Trade Organization, 2012.

Christoph Herrmann, European Yearbook of International Economic Law 2017: “*Non-Tariff Barriers to Trade: What Are We Talking About?*”, edited by Marc Bungenberg and Christoph Herrmann (2017), 51.

World Trade Organization. “Agreement on Technical Barriers to Trade”. April 15, 1994. Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120.

World Trade Organization. “*Technical Barriers to Trade.*” World Trade Organization. Accessed October 6, 2024. [https://www.wto.org/english/tratop\\_e/tbt\\_e/tbt\\_e.htm](https://www.wto.org/english/tratop_e/tbt_e/tbt_e.htm).

World Trade Organization. “*Transparency in Trade: A Fine Line Between Too Little and Too Much.*” Accessed October 6, 2024. [https://www.wto.org/english/res\\_e/reser\\_e/ersd201004\\_e.htm](https://www.wto.org/english/res_e/reser_e/ersd201004_e.htm).

Organization for Economic Cooperation and Development. International Regulatory Cooperation and Trade: “*Understanding the Trade Costs of Regulatory Divergence and the Remedies*”. Paris: OECD Publishing, 2017.

United Nations Conference on Trade and Development. “*Non-Tariff Measures: Economic Assessment and Policy Options for Development*”. Geneva: United Nations Conference on Trade and Development, 2013.

European Commission. Trade and Safety Standards: “*Safeguarding Consumer Protection in a Global Economy*”. 2020.

World Bank. “*Reforming Non-Tariff Measures to Boost Trade and Competitiveness*”. World Bank Group, 2018.

Government of India. “*Technical Barriers to Trade and India’s Free Trade Agreement.*” Ministry of Commerce and Industry. Accessed October 6, 2024. <https://commerce.gov.in/wto-tbt-fts/>.



World Trade Organization. "*Technical Barriers to Trade: The Challenges Ahead.*" World Trade Organization. Accessed October 6, 2024. [https://www.wto.org/english/res\\_e/publications\\_e/tbt\\_challenges\\_e.htm](https://www.wto.org/english/res_e/publications_e/tbt_challenges_e.htm).

International Trade Centre (ITC) and Liu, Pascal. Review Series on the "*Impacts of Private Standards Part I*". 2009. "*Private Standards in International Trade: Issues and Opportunities*". Paper presented at the WTO's Workshop on Environment-Related Private Standards, Certification and Labelling Requirements, Geneva, July 9, 2009.

Ministry of Commerce and Industry, Department of Commerce. "India Standards Portal". Accessed October 7, 2024. <https://indiastandardsportal.org/AccrediatedCabs.aspx>.

**Annexure-1**

(Note: The table is color-coded based on the level of enforceability of the TBT provisions: “Green” indicates the strongest level, “Yellow” represents a moderate level, and “Red” signifies the weakest level)

Description	EFTA	EU	JAPAN	USA	KOREA	ASEAN	INDIA
<b>I. Reference to WTO-TBT Agreement</b>							
Does the agreement refer to the WTO TBT Agreement?	EFTA agreements strongly emphasize adherence to WTO TBT references.	High commitment to referencing the WTO TBT Agreement	Agreements strongly emphasize adherence to WTO TBT references	Most of the agreements refer to the WTO TBT agreement and uses the same definitions as the TBT agreement	Agreements strongly emphasize adherence to WTO TBT references and some agreements go beyond the TBT Agreement also.	Most agreements refer to the WTO TBT Agreements.	Agreements strongly emphasize adherence to WTO TBT references and some agreements go beyond the TBT Agreement also.
Does the agreement use the same definitions as the TBT Agreement?		A moderate number of agreements go beyond the TBT Agreement					
Does the agreement go beyond the TBT Agreement in terms of coverage or sector-specific commitments?							
<b>II. Integration Approach</b>							
<b>A. Standards</b>	Mutual recognition in standards are not strongly implemented while strong commitments on harmonization with existing standards and promotion of international standards are observed in a few cases like but can	Mutual recognition commitments are weakly implemented in standards.	Weak commitments on mutual recognition and very few on harmonization with respect to standards.	Only a handful of agreements include strong commitments to the integration approach, and none involve commitments toward mutual recognition and harmonization with respect to standards.	Moderate commitments on mutual recognition and harmonization can be seen in few agreements	Weak commitments on mutual recognition and very few on harmonisation with respect to standards.	Very few agreements have strong commitments on mutual recognition and harmonization in standards.
<i>(i) Mutual Recognition</i>							
Is mutual recognition/equivalence in force?							
Is the burden of justifying non-equivalence on the importing country?							
Is there a time schedule for achieving mutual recognition?							
<i>(ii) Harmonization</i>							
Are there specified existing standards to which countries shall harmonize?	There is moderate effort to						

Is the use or creation of regional standards promoted?	be seen in rare instances like EFTA-Philippines FTA.	harmonize standards regionally and internationally							
Is the use of international standards promoted?									
<b>B. Technical Regulations</b>									
<i>(i) Mutual Recognition</i>	Similar as standards, Mutual recognition and harmonization w.r.t technical regulations can be seen in rare instances	A stronger commitment is seen towards mutual recognition in technical regulations	A stronger commitment is seen towards mutual recognition in technical regulations relative to standards	Can be seen in 4 instances	Similar as standards, Mutual recognition and harmonisation w.r.t technical regulations can be seen in quite a few instances	Mutual recognition and harmonization efforts are relatively low across the board	Mutual recognition and harmonization efforts are low in technical regulations.		
Is mutual recognition/equivalence in force?									
Is the burden of justifying non-equivalence on the importing country?									
Is there a time schedule for achieving mutual recognition?									
<i>(ii) Harmonization</i>				Promoted in quite a few instances					No commitments
Are there specified existing standards to which countries shall harmonize?									
Is the use or creation of regional standards promoted?									
Is the use of international standards promoted?									
<b>C. Conformity Assessment</b>									
<i>(i) Mutual Recognition</i>	Commitments on mutual recognition and harmonization can only be seen one instance.	Conformity assessment also follows similar trend as technical regulations with mutual recognition and	Conformity assessment also follows similar trend as technical regulations with commitments on mutual	Stronger commitments can be seen in 7 instances	Commitments on mutual recognition and harmonization of conformity assessment are evident in many instances.	Commitments on conformity assessment can be seen in few instances, relatively more than commitments on	Conformity assessment also follows similar trend as technical regulations with relatively low commitments on		
Is mutual recognition/equivalence in force?									
Is the burden of justifying non-equivalence on the importing country?									
Is there a time schedule for achieving mutual recognition?									



Do parties participate in international or regional accreditation agencies?		participation in accreditation agencies	recognition and participation in accreditation agencies			standards and mutual recognition	mutual recognition and participation in accreditation agencies
<i>(ii) Harmonization</i>							
Are there specified existing standards to which countries shall harmonize?							
Is the use or creation of regional standards promoted?							
Is the use of international standards promoted?							
<b>III. Transparency Requirements</b>							
<i>(i) Notification</i>	The time period allowed for comments is not specified requirements.	Transparency requirements quite strong, time period allowed for comments is specified in many instances	A lot of scope here in commitments on notification while commitments on contact points can be seen in many instances	Transparency requirements are strong, with specified time periods for comments and commitments on contact points in many instances	Transparency requirements quite strong.	Commitments on transparency requirements can be seen in few FTAs.	Weak commitments on transparency; time period allowed for comments specified can be seen in one instance
Is the time period allowed for comments specified?							
Is the time period allowed for comments longer than 60 days?							
<i>(ii) Contact points</i>	Notable commitment on consultations for exchange of information. A lot of scope in transparency						Commitments on contact points can be seen in many instances
Contact points/consultations for exchange of information							
<b>IV. Institutions</b>							
<i>(i) Administrative bodies</i>	Institutional mechanisms,	Strong institutional	Strong institutional	Strong institutional framework with	Strong institutional framework with	Institutional mechanisms,	Strong institutional framework with
Is a regional body established?							





(ii) <i>Dispute Settlement Mechanism</i>	including regional bodies and dispute settlement, are highly emphasized, as shown by the high occurrence in various FTAs	framework with many agreements establishing regional bodies and dispute settlement mechanisms	framework with many agreements establishing regional bodies and dispute settlement mechanisms	many agreements establishing regional bodies and dispute settlement mechanisms	many agreements establishing regional bodies and dispute settlement mechanisms	including regional bodies and dispute settlement, are highly emphasized, as shown by the high occurrence in various FTAs	many agreements having commitments to establish regional bodies and dispute settlement mechanisms
Is there a regional dispute settlement body?							
Are there regional consultations foreseen to resolve disputes?							
Is there a mechanism to issue recommendations?							
Are recommendations mandatory?							
Is the recourse to dispute settlement for technical regulations disallowed?							
<b>V. Further Cooperation Among Members</b>							
(i) Common policy/standardization programme (beyond trade-related objectives)	There is a notable absence of further cooperation beyond trade-related objectives such as common policy programs, technical assistance, or metrology.	Notable efforts in providing technical assistance and promoting metrology	Notable commitments in providing technical assistance	Can be seen in only one FTA	Strong efforts in providing further cooperation among members in all the three provisions	Notable efforts in providing technical assistance and promoting metrology	Commitments on further cooperation among members can be seen in recent FTAs
(ii) Technical Assistance							
(iii) Metrology							

## About the Authors



**Dr. Pritam Banerjee** is Head & Professor at the Centre for WTO Studies. He brings versatile expertise in areas such as Trade in Goods, Trade in Services, Trade Facilitation, Logistics and Digital Trade. He has held senior roles in prestigious organizations, including the World Bank, Asian Development Bank and Deutsche Post DHL Group. Dr. Banerjee’s career has therefore included stints in academia, private sector, and multilateral development banks, that enables him to bring a diversity of experience and perspective on trade policy issues. He has also been a member of several government taskforces and committees, including the National Committee on Trade Facilitation (NCTF).



**Dr. Amit Randev** serves as a Consultant (Legal) at the CWS, CRIT, IIFT. In this role, he provides advisory services on issues related to Trade Remedies (Antidumping, Countervailing and Safeguard) and Non-Tariff Measures (NTMs) to the Government of India and contributes to FTA negotiations. Holding a PhD in WTO/International Trade Laws and Master degree from National University of Juridical Sciences (NUJS), Kolkata, he possesses over 7 years of experience as a trade lawyer collaborating with the Government of India, large Indian corporations, and renowned law firms.



**Ms. Deeksha Yadav** serves as a Young Professional (Economics) at the CWS, CRIT, IIFT. She holds a B.A (Hons) degree in Economics from Gargi College, University of Delhi, and earned her Master’s degree in Economics (with specialization in international trade) from CITD, Jawaharlal Nehru University, Delhi in 2023.

## About CRIT

India's Foreign Trade Policy (FTP) Statement 2015-20 suggested a need to create an institution at the global level that can provide a counter-narrative on key trade and investment issues from the perspective of developing countries like India. To fill this vacuum, a new institute, namely the Centre for Research on International Trade (CRIT), was set up in 2016. The vision and the objective of the CRIT were to significantly deepen existing research capabilities and widen them to encompass new and specialised areas amidst the growing complexity of the process of globalization and its spill-over effects in domestic policymaking. Secondly, enhancing the capacity of government officers and other stakeholders in India and other developing countries to deepen their understanding of trade and investment agreements.

## About CWS

The Centre for WTO Studies which is a constituent Centre of CRIT, pre-dates the CRIT since it was created in 1999 to be a permanent repository of WTO negotiations-related knowledge and documentation. Over the years, the Centre has conducted a robust research program with a series of papers in all spheres of interest at the WTO. It has been regularly called upon by the Government of India to undertake research and provide independent analytical inputs to help it develop positions in its various trade negotiations, both at the WTO and other forums such as Free and Preferential Trade Agreements and Comprehensive Economic Cooperation Agreements. Additionally, the Centre has been actively interfacing with industry and Government units as well as other stakeholders through its Outreach and capacity-building programs by organizing seminars, workshops, subject-specific meetings, etc. The Centre thus also acts as a platform for consensus-building between stakeholders and policymakers. Furthermore, the inputs of the Centre have been sought after by various international institutions to conduct training and studies.

### CENTRE FOR WTO STUDIES

5<sup>th</sup> to 8<sup>th</sup> Floor, NAFED House, Siddhartha Enclave, Ashram Chowk, Ring  
Road, New Delhi – 110014

<http://wtocentre.iift.ac.in/>