The role of standards in supporting policy

...and the challenges that National Standards Bodies face

Commonwealth Standards Network

1. Introduction

What role do national Standards Bodies (NSBs) have in setting government policy?

A stark answer could be: None. NSBs should have no role in setting policy; policy, the argument might go, is for governments alone. NSBs should focus on technical matters. Reality, however, is not so black and white. In some countries standards are integral to government policy, in others they are peripheral – and in between there are many shades of grey. But standards always matter, in all countries alike.

This paper is about the role of standards in shaping policy, and the challenges that NSBs face.

A coherent approach to the use of standards in regulation will make governments more effective and efficient in serving society, environment and the economy. Standards, it is argued, play an underappreciated role in moving ideas; they are building blocks for incremental spreading of technology and innovation, they are good "messengers". But exactly how to approach standards and regulations in a coherent manner is fraught with challenges.

Drawing from experience gained via the Commonwealth Standards Network (CSN)[1] work programme, we look more closely five inter-related challenges in developing countries, particularly – but not limited to – Africa. We discuss how these challenges may be addressed and stress the importance of both good regulatory practices and good standards practices. We situate these two core activities (regulation and standard setting) within the concept of "quality infrastructure" and suggest a possible starting points for more detailed follow-up.

[1] See: https://www.commonwealthstandards.net; and, Commonwealth Standards Network (2020).

2. Executive summary

2.1. Moving ideas

It is important to think of a standard as something living, a product of thought and cooperation on a grand scale. We know today that diffusion of knowledge is essential for economic growth. But what role do standards play? Unfortunately, the literature is often unhelpful. This is not, of course, to diminish or devalue the work that has been done to quantify the benefits of standards and on which many of the assertions in this paper rest, but, rather, because for the layman it is so much easier to grasp the public service provided by a bridge, a school or a hospital. Why bother with terminology of asymmetries, inter-operability, network effects? – the terms normally used to describe the benefits of standards.

The stock of standards is like a good cookbook: most can afford it, and all can derive value from it. Common and readily available ingredients can be put to good use. Recipes transcribed from knowledge (ideas) allow us to build a product or perform a service in a way that is tried and tested. We can use it for the cement in that bridge, school or hospital. The fact that someone has done it before, used that particular recipe over and over again, lends confidence. It gives you, as a consumer, confidence about safety and quality – attributes that can otherwise be difficult to assess. A functioning standardization system is a good messenger: it moves both the ideas and confidence in their uses. It fosters the diffusion of knowledge, catalyses technical progress by providing building blocks for innovation, and supports the economy and international trade. Standards move, also, in the sense that they are never final documents; they need to evolve to reflect a continually changing state of the art.

In this paper the vantage point is that of the NSB. We find it useful to envisage the function of the NSB in three steps – thinker, scribe and messenger.

2.2. Thinker, scribe and messenger

We begin with the **thinker**. A standard without an idea is just paper[2]. The idea is most often technical in nature, it is a way of solving a problem; it may be instructions about how to produce something using a specific technology, or a way of doing something that has value. Consider, for instance, an energy-efficient light bulb; or even the right mix for cement. Someone – or, more likely, a group of people – has figured this out (the thinker). As with most innovations, it has likely been an incremental step-by-step process characterized by trial and error and a lot of tinkering.

Eventually, the idea needs to find a practical application and committed to paper in a document. This is where the 'hows' and 'whats' of a technology are codified in black and white to enable common and repeated use. These instructions ensure that same result is achieved again and again; a recipe of sorts. The NSB facilitates the stirring and mixing of ideas, at home, across borders and among a wide range of stakeholders. Consensus is integral. In this sense, the NSB shepherds the drafting of the recipe (the "document") in an efficient, effective and replicable way so that no matter who does the cooking, the outcome is the same. This is the work of the **scribe**.

Now that the work is finished, the idea – developed by the thinker, codified by the scribe – needs to move! This is the **messenger** function of the NSB. When the work is finished the standard is distributed (published[3]) so that the information becomes available to others. The more widely used – the more valuable it becomes. A standard organises and facilitates commerce based on a common understanding, so the more people that are onboard the better: think of the universality of the USB flash drive as opposed to the electric plug. And this is just the beginning. Over time, experience is gained, and new ideas flourish. There is a feed-back loop from the messenger back to the thinker(s) – and this might induce more tinkering. The standard is

[2] Standards Council of Canada (2015), p. 4.

[3] World Trade Organization (1995), TBT Agreement Annex 3, para. O: "Once the standard has been adopted, it shall be promptly published".

a conduit for new ideas and opportunities. While it may not be the source of the original idea, or even how the idea finds practical application (innovation[4]), it is a catalyst for more[5]. Someone will tinker with the recipe, add a new ingredient, change a sequence. This is then coded again (scribe) and spread as others "see further" (messenger) adding to existing knowledge and making it available and possible for others (thinkers, again!) to build, tinker and improve – and see even further. This spurs innovation and contributes to growing productivity[6].

In this way, the NSB is the gatekeeper of this dynamic process. So what are the challenges?

2.3. Challenges for the NSB

The process above sounds relatively simple. But the challenges are manyfold. This paper draws from a series of discussions with NSBs in Commonwealth countries during CSN activities (Section 3 of this paper). Many NSBs struggle because there is, typically, little awareness, particularly at higher levels of governance, about the importance and benefits of standards. This can translate into a limited authority and a curtailed role for the NSB. Getting adequate and balanced stakeholder participation and engagement is often tricky. Sometimes, even within standards bodies, there is a reluctance to rely on international standards and a feeling that national solutions should come first. Often there is confusion between standards and technical regulations, or between the role of the NSB and that of the regulatory authorities. The consequence of this is that, it is not unusual that the line between voluntary or mandatory requirements is blurred. Coordination in and of itself is fraught with difficulties – for there are many stakeholders involved: government agencies, the NSB, the private sector, consumers, etc. All of the above can hamper effective governance in the standards and regulatory sphere. In Section 4 we address some of the key lessons learnt in addressing these challenges.

2.4. Good practices ...

Regulation has a central role in government policy today. As countries grow wealthier, the need for better regulation increases. And so, then, do demands on regulators: they find themselves with hands and fingers in many pies. The regulation of a single product may cut across competencies. Standards are important because they sit at the nexus between knowledge and policy; they support regulation by providing key technical underpinnings. Hence, both good standards practice, and good regulatory practice are important in conjunction.

Fortunately, there is no need to start from scratch (Section 5). The best collected experiences on Good Standards Practices, or **GSP**, have been developed by the ISO, based on those contained in the WTO TBT Agreement's Code of Good Practice and in conjunction with guidance developed by the WTO Members in the Technical Barriers to Trade (TBT) Committee. Based on this work, this paper highlights ten steps of GSP ("ten degrees of standards" – Section 5.1).

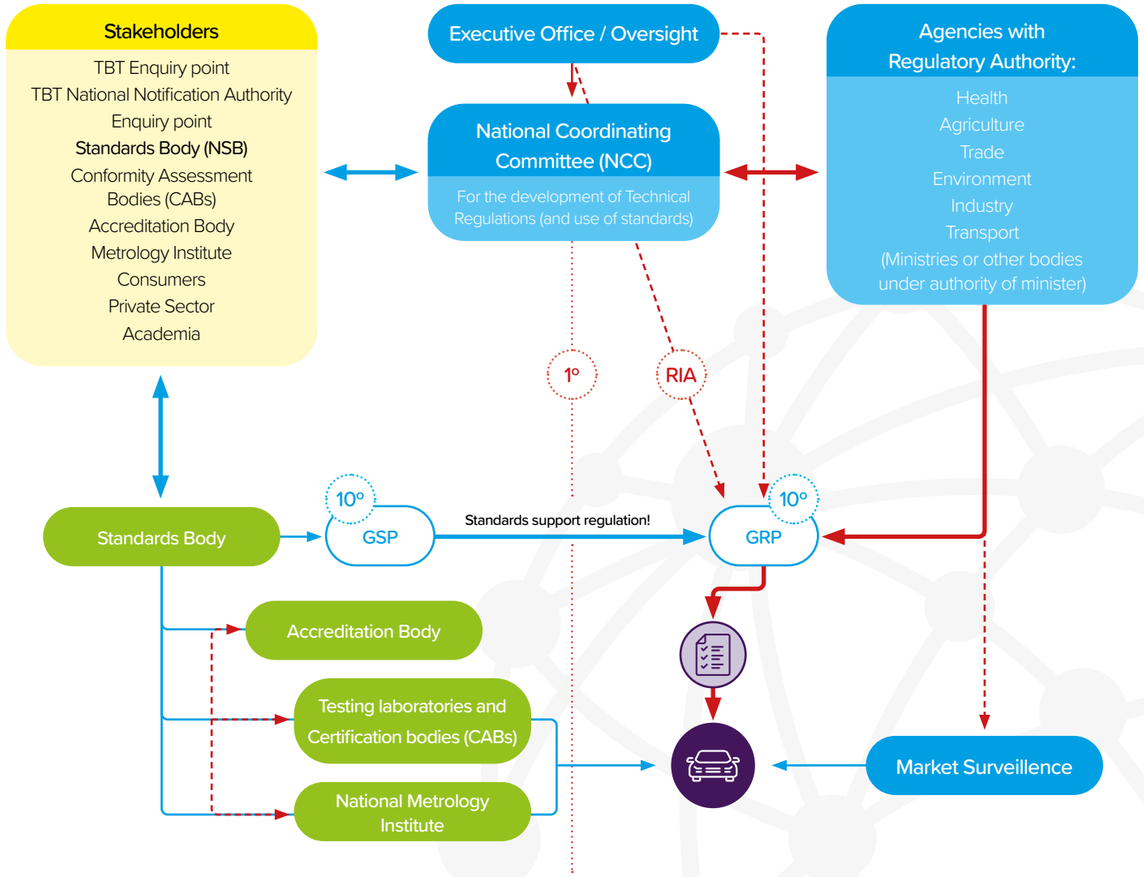
On the regulatory side, Good Regulatory Practice, or **GRP**, is about preparing, adopting and applying legislation. The OECD describes GRP as policies, tools and institutions for ensuring that regulations are justified, of good quality and achieve policy objectives. At the WTO, GRP is about the practical application of the WTO TBT Agreement. Drawing on work done in the OECD and the WTO over the last 25 years, this paper highlights ten key elements of GRP ("ten degrees" of regulation – Section 5.2).

Nevertheless, despite similarities, this paper highlights why it is also important to keep GRP and GSP separate (Section 5.3). We describe this as being akin to a driver and GPS. In the car, the driver (regulator) will set the destination (level of safety, environmental performance) and then be offered, by the GPS (standard setter), the best routes to get there. The suggested routes have been carefully considered and are based on technical and data-driven input. The

[4] On the difference between invention and innovation, there is a useful quote by Charles Hard Townes: "The beaver told the rabbit as they stared at the Hoover Dam: No, I didn't build it myself, but it's based on an idea of mine."

[5] British Standards Institution (2015), p. 24.

[6] A UK study from 2015 found a positive and significant contribution of standards to productivity, supporting 37.4% of annual labour productivity growth in the UK economy over the period 1921 to 2013 (British Standards Institution (2015), p. 9).



driver may of course decide to deviate – but she does so at her own risk. Put differently: while a standard is about finding consensus for how to solve a particular technical problem (the best route), regulation is a decision about the choice of destination, about where to set the bar (the level and degree of government intervention). While this decision is not necessarily taken by consensus, it should be informed one - not arbitrary.

2.5. ...and the "Big Picture"

How, then, to bring together the regulatory and standards streams to better serve the public good? More specifically, perhaps: in what way can standards effectively support regulation? This needs to be looked at from a "whole-of-government" perspective. We make an attempt in the Big Picture Figure (in Section 6 and reproduced above).

In this figure, the technical regulation framework is blue. This provides the legal basis for government policy – it is the "hand of government". It is intended to ensure that actions respect the rule of law, and that they stem from executive authority. The technical framework relies on the services of the quality infrastructure (QI), in green, including the standards body. Indeed, standardization stands out as a key pillar of QI.

When the regulatory framework and the quality infrastructure (the green and the blue, respectively) work in concert, trade is facilitated. The use of both GSP and GRP will ensure – among other things – that regulation is based on relevant international standards, a key tenet of the WTO TBT Agreement. This means that unnecessary restrictions on trade are avoided. It will also mean that the regulation itself is fit-for-purpose and will achieve the social, economic or environmental objectives sought. This will boost confidence in products or services traded – be it a toy car, or the real one.

2.6. Sound public policy

The UN language on the Sustainable Development Goals (SDGs) speaks of international trade being "an engine for inclusive economic growth and poverty reduction[7]". Of course, the nature of that growth is equally important. It needs to be sustainable and equitable. Because good standards provide tools for sound public policy, they can contribute to the achievement of the SDGs. The beauty of internationally standards is that they have a built-in legitimacy: they are based on collaboration – between countries – and are built around consensus. As such, they provide essential guidance for government, industry and consumers alike.

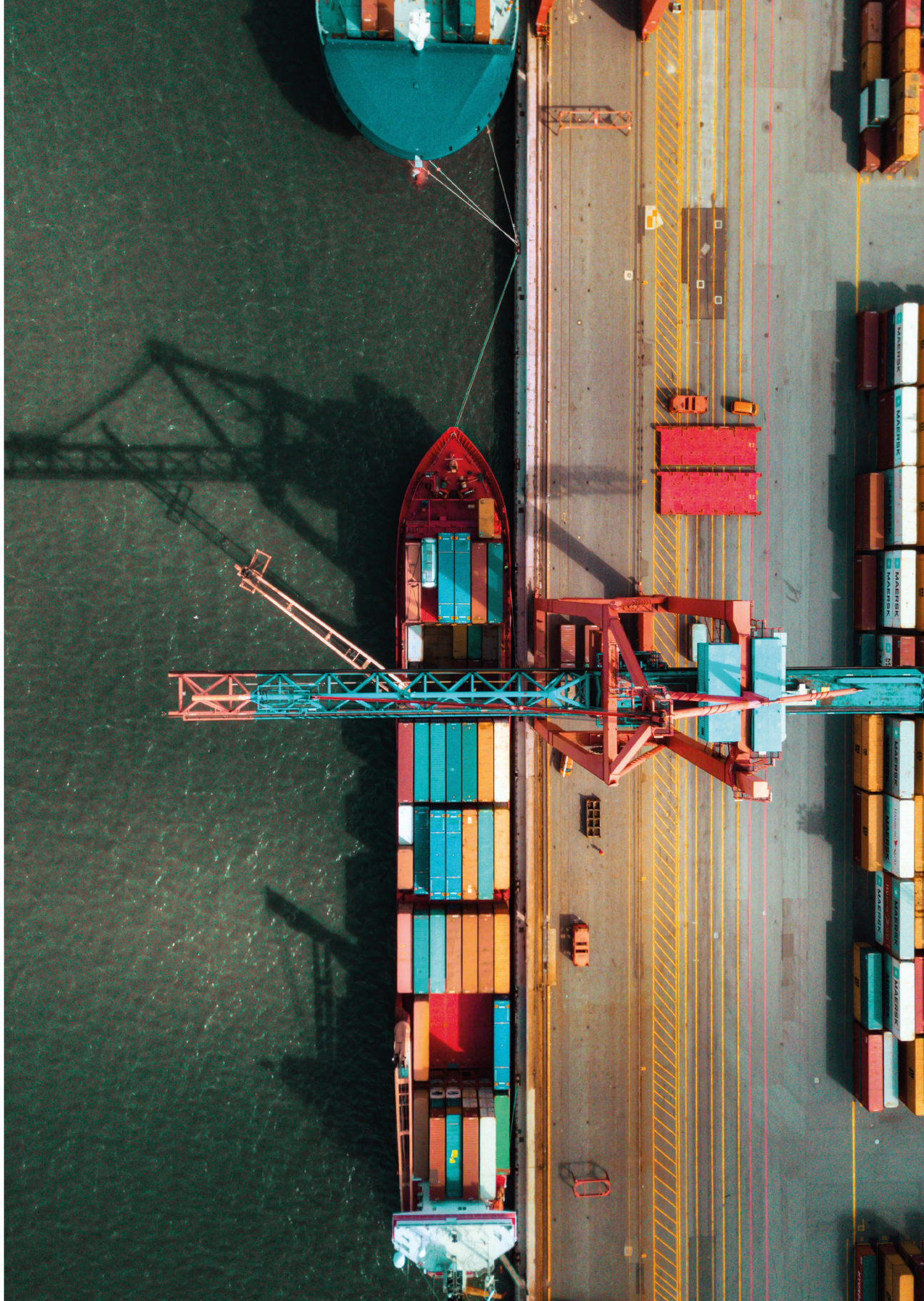
It is worth recalling that standards and regulations are increasingly at the forefront of trade policy. The WTO TBT Agreement is the only international instrument that deals with the interface between technical regulations and standards. In light of very real challenges that many Commonwealth countries have, this paper is about moving towards a more coherent approach to the use of standards in regulation so that governments become better at serving society, environment and the economy. Standards, we argue, play an underappreciated role in moving ideas – the issue is how to unleash their potential in the face of very real challenges.

2.7. Identifying the "first next step"

Asking the right questions is good place to start discussions. The last section of this paper (Section 7) sets out ten questions that are meant to spark dialogue. The questions are based on the challenges and good practices described in Sections 3-5 and are intended to provide a starting point for a follow-up discussion; there is often no right or wrong answer – there is no one blueprint. NSBs have often inherited institutional structures, mandates and constraints and are at different stages of development. Thus, responses are a way to identify possible best next steps.

[7] United Nations (2015), para. 68.

> *"The UN language on the SDGs speaks of international trade being an engine for inclusive economic growth and poverty reduction"*



3. Describing the challenges (Phase 1)

Despite their significance, standards rarely top the list of priorities – particularly where resources are scarce. Other matters tend to capture the limelight. Getting others involved in standards development and working effectively across government and within existing mandates and legal frameworks clearly isn't easy. Based on discussions and feedback from NSBs in Commonwealth countries during CSN activities, several challenges became apparent. These are presented as specific issues below and fictionalized for the purposes of illustration. These challenges are generic in applicability and may come out in different flavours depending on each national context. The intention in this Section is to describe them as the NSB, might see them[8]. At this point we don't provide any guidance at all; we don't say what is wrong or right, we are simply trying to pose the hypothetical question seen from the perspective of the NSB, without judgement. Later, in Section 4, we set out some thoughts on how to address these challenges. Section 5 considers the broader picture and we introduce, in Section 6, an approach which could be used as a springboard for small steps forward.

3.1. What are you talking about? Why are you making a fuss about 'standards'?

In brief: *Getting high-level political buy-in for standards development is difficult. A lack of it, however, has cascading negative consequences which many NSBs suffer from. The concerns we hear are as follows.*

Outside the four walls of the NSB, and perhaps with the exception of a few diehard believers, there is a lack of awareness on the importance of standards. Most people don't understand standards. Only a few understand the work of an NSB, and the higher you reach into the hierarchy of government, the fewer and further between they are. But even those interested find it difficult to allocate scarce resources to standardization. Priorities, it seems to you, always go elsewhere: infrastructure (roads, ports), health and education.

You have difficulty in explaining the benefits of standards, and why they should be a priority. The curse of standards seems to be that the better they work, the more invisible they become – one only really understand the benefits in their absence: the electrical plug that does not fit the socket, or a housefire from a faulty electrical lamp. You know standards are hugely important for the economy, and for helping protect health, safety and the environment, but you can't quite express it clearly.

Insufficient political buy in (at the top) means little or unclear devolvement of authority or mandate. You are being asked to do many things beyond your core standards development work, like running certification schemes, or enforcing of mandatory standards, but you don't get the support or resources you need. The legal basis for your work is outdated and doesn't reflect your current responsibilities. With no push from above, at the operational level – agencies and regulatory bodies – don't cooperate with you or refer to standards in their work.

3.2. You could hear a pin drop

In brief: *No one provides feedback! It is difficult to engage stakeholders, in particular the private sector, in the public consultation process. How then to develop standards that are effective for addressing needs and facilitating trade? The concerns we hear are as follows.*

[8] This listing is not exhaustive. This paper does not attempt to address all challenges but rather to focus on those that are most common and that seem to be of priority for Commonwealth nations.

You have difficulties involving the private sector. While the need for developing a standard often originates from the private sector, you don't have a broad spectrum of businesses (big and small) engaged in technical committees and there is precious little feedback on draft standards. You have tried to explain that it only takes one standard to undermine a businesses' competitive position at home or in foreign markets. But industry – even industry associations – remain reluctant to commit resources to engage in standards development. There are very few experts in companies that understand the technical content and jargon well enough to make a meaningful contribution or comment during public consultation. Practical issues, like funding to cover the cost of experts' participation in technical committee meetings, keep getting in the way.

Regulators (and other bodies) have their own mandates and areas of expertise and seem to be unwilling to engage. You are not able to convince regulators, or other government bodies, to use standards as a basis for requirements they set. Regulators see themselves as experts in their own right – in a sense their own standards-setters – and do not want, or see no need for, engagement (with the NSB). They don't want to cede control to others. Instead, a plethora of agencies, ministries, regulators set requirements in an ad-hoc fashion following their own entrenched procedures, often in response to (sometimes mixed) instructions from separate entities of government. Few, if any, of these requirements are notified to the WTO.

Other stakeholders matter too. Regulators and industry are important but not the only stakeholders in standards-development work. Getting an appropriate mix is even more difficult. This means getting inputs and feedback from consumers, universities (and researchers), quality infrastructure institutions (like labs and other conformity assessment bodies), civil society and non-governmental organizations. Efforts to identify and contact other businesses, organizations, and experts that can affect or be affected by a standardization process[9] often come up empty. Instead, the same few people or organizations are around the table. Moreover, you lack data generated in your national context to support standards development. Universities help but can't always provide you the information you need. You therefore need to undertake research but don't have the capacity to do so. How, then, to develop a "good" standard?

3.3. Our standards come first!

In brief: *Even when you are able to mobilize engagement, there are deep-rooted misgivings about the use of international standards in particular. Many instinctively prefer the national, the domestic – or the "home" route to the international. The concerns we hear are as follows.*

Standards development should start at home. This is because, it is argued, that standards developed for your country need to be tailored to your own specific national context. Your own thinkers should come first! To do otherwise would be to relinquish sovereignty – to become a standards taker, not a standards maker. It would mean that someone from outside defines local preferences, and this does not gel with the idea that countries decide how to protect their own citizens in ways that reflect their own national sensitivities and priorities. In the same breath, you hear a desire to use national standards to protect your producers from unfair international competition.

You are faced with the notion that standards, first and foremost, are there to protect your consumers. Indeed, you hear: even the TBT Agreement recognizes the sovereignty of governments. The very preamble says that no country should be prevented from taking measures that are necessary to protect human, animal or plant life or health – or even the environment. The Agreement even states that countries may set this protection at levels it considers "appropriate"[10]. To argue that an NSB should look to international standardizing bodies first seems to assume that an international standard will fill the gap. But suppose an international standard does not exist – or, alternatively, that it does exist but is neither relevant nor appropriate. This only reinforces the point that it is better to start at home, right?

Every country is different. Take the example of diets. If we consume more rice here than in, say, Germany (on a per capita basis), can nutritional advice really be standardized at the international level? Culture and social norms will certainly also affect preferences. Some countries may be more risk adverse than others, they may opt for a more 'precautionary approach'. Different levels of development and prices will matter too. Electronics in richer countries may be more expensive because they are built around a "circular economy" mindset, and while poorer countries also care about their environment, consumers may prioritize price. How can an international standard cut across these differences? Should it? Is there really a truly "international" standard?

You face the question about the "relevance" of standards developed elsewhere where you cannot even participate. Is it not so, you are asked, that NSBs from countries with few resources are unlikely even to participate in the development of international standards? How can small NSBs be expected to participate in an effective manner when very many of these are being developed constantly and often in parallel across the globe? Even the WTO TBT Agreement states that Members are required to participate in the preparation of international standards within the limits of their resources[11]. And how can the NSB bring a consolidated national position to bear in international standards development when there

[9] ISO/IEC (2019).

[10] World Trade Organization (1995), TBT Agreement Preamble, 6th tiret.

[11] World Trade Organization (1995), TBT Agreement Article 2.6.

is so little coordination between your national stakeholders? This means that the development of the "international" standards probably does not take into account the particular national circumstances and challenges of those that have not been able to participate – at the very least, this cannot be assumed. Why should we adopt these international standards, you are asked? Furthermore, they are reviewed so frequently that by the time we manage to adopt an international standard domestically, there is already a revised version published. Using such international standard would undermine the ability of governments to promote the pursuit of their legitimate policy objectives.

3.4. Voluntary or mandatory?

In brief: *An NSB develops standards that are voluntary yet some of these standards later become mandatory. How can the NSB deal with this responsibility and blurring of lines? The concerns we hear are as follows.*

Are you developing standards or are you actually regulating? You find yourself, as an NSB, frequently in the position where you are developing standards that later become mandatory, meaning that they directly mandate legal requirements for goods on the domestic market, whether produced locally or imported. What does this mean? Standards are supposed to be voluntary, right? In essence, you are both standard-setter and regulator; you are drafting legislation. But is your role, you ask yourself, as a standards-developer or a policy maker?

How will you know if you are over or under regulating? If standards are developed for everything by the NSB, how can you know what – if any – the appropriate regulatory action is, in each and every case? If you regulate broadly simply because you have been given the power and mandate, there may be a tendency for overregulating. However, the opposite may also happen. It is not possible for an NSB to have expertise in all areas; including, for example, food safety and nutrition, textiles, toys and medical products (to mention a few). The complexity is further compounded if stakeholder participation and feedback is low or ineffective (see above) meaning that the actual expertise and technical input is lacking – or is not accessible to the NSB. You may also be insufficiently staffed and equipped. Here the risk is rather underregulating because the burden is simply too high. You may then be unable to protect the public interest across all sectors – but is that really your mandate, to begin with?

Should the decision to regulate really by yours, that is, one that the NSB should take? You wonder whether – as the NSB – you and your technical committee members should really be making the decisions (or at least recommendations) about if and when to regulate. If you are acting as a de facto regulator – are you then not, in effect setting policy? It would seem to you that there is a difference between development of a consensus-based voluntary standard, and, on the other hand, a policy-based decision (not necessarily taken by consensus) to regulate and impose mandatory requirements to protect certain public policy objectives, like health, safety or the environment. Sometimes you feel caught between a rock and a hard place. The line between mandatory and voluntary is not clear, at the very least it is blurry.

And this complicates matters for you at the WTO. WTO members are meant to notify their technical regulations for comment to other Members at a draft stage (if these are not based on international standards and may have a significant effect on trade). Standards, on the other hand, do not need to be notified. So, what to do with mandatory standards? You have two options, neither particularly good. You can notify everything. This means that, to be safe, you notify all draft standards that pass through the NSB. Alternatively, you may take a very strict interpretation and decide that since you are the standards body – and standards are by definition voluntary – you notify nothing (even though, actually, some standards are made mandatory, and market access depends on their requirements being fulfilled).

3.5. The Good Spider

In brief: *At home and abroad the standards and regulatory world look to you for input; you are on the front line of the non-tariff barrier discussions. This is a very broad area of trade policy. But this is a very broad area of trade policy and you cannot be an expert in every area – you find it difficult to create and motivate a good network of people where you could serve as the spider in the web, fulfilling your function as enquiry point and notification authority under WTO rules. The concerns we hear are as follows.*

You struggle to be everywhere and end up being nowhere. As is the case with many NSBs, you are the legally designated (or sometime the de facto) TBT enquiry point; you are often also the Notification Authority[12]. This means that you carry the mandate to coordinate information on TBT at the national level; you are the "spider in the web". And the TBT web is a large one, remember: it covers all goods on the market, agricultural and industrial. But you have a problem, indeed several. In fact, all of the above cascades down to you and takes shape in essentially two forms.

Heads in the sand. No one tells you what to notify because they are all doing their own thing. One example we hear is as follows. You hear that your ministry of health is developing a graphic health warning for alcoholic beverages. The positions of national producers and stakeholders are not clear. You reach out and offer the services of the NSB and its relevant technical committee to help - but by the time you get a reply, the ministry has already gone its own way. You convince them to allow a late notification and this is sent to the WTO. As you half-expected, during the following sixty days[13], a huge volume of comments stream in from international stakeholders, mainly large alcohol exporters who have been alerted via ePing. What to do? How can you ensure an appropriate response without effective engagement from the players at home?

But no one is listening! You have just realized that a measure being implemented by a key trading partner is going to have a major effect on your agricultural exports. You have seen this because, as the enquiry point, you monitor notifications issued by key trading partners. This one is about strict environmental sustainability labelling and will affect agriculture, forestry and fisheries. You forward the notification to industry associations, leading companies and relevant government bodies. No reply. No reaction at all. The measure goes into force and, as you feared, your industry is negatively affected. All heads turn (or are directed) to you with one question: why didn't you tell us? You say you did, they counter that it is not possible to look at the piles of papers (or email) you keep forwarding them.

So how best to coordinate and not be seen as a nuisance? The reality, you say, is that while some notifications filter through and are sent to the WTO, most measures go unnoticed and enter into force without even domestic stakeholders being aware (heads in the sand), let alone foreign partners. With respect to measure affecting your own exports, there is the odd occasion when a private sector representative calls worried about development in international markets, but this is an exception (no one is listening).

A good spider needs a robust web – a good framework. How, you ask, can you ensure that your own players develop regulations in a way that respects good practices, and, that you, in turn react effectively to tackle incoming threats? Here the cascade from above accumulates. High up no one knows what you are talking about, when you try to gather feedback from the right people (stakeholders) you could almost hear a pin drop. Yet you seem to be developing more than standards, even working on policy – but efforts are thwarted. How do you build that web?

Above we have considered some of the challenges you face. In what follows, we wish to shift the focus to lessons learned and good practices that may contribute to addressing some of these challenges (Section 4).

[12] According to World Trade Organization (2018), NSBs house 51% of TBT enquiry points. In addition, 80% of TBT enquiry points are also designated as Notification Authorities under the TBT Agreement.

[13] The WTO TBT Agreement requires that Members provide a reasonable time for comment – interpreted to mean 60 days – on draft technical regulations and conformity assessment procedures when notifying them to WTO. In addition, it requires that NSBs provide 60 days for comments from interested parties on draft standards (World Trade Organization (2018), pp. 26-29).

4. Addressing the challenges

In this section we change vantage point to reflect on how an NSB, might address some of the challenges that have been described in section 3. The intention is neither to be exhaustive, nor to be prescriptive – it is to shed some light on lessons learnt and practices that have come to light over the implementation of the WTO TBT Agreement in the last 25 years. Each section below responds to the challenges above. We will them move to attempt a discussion on the bigger picture in Section 5.

4.1. Making the case: standards make us better at what we do!

In brief: *Standards contribute to economic growth. And while convincing the uninitiated about the benefits of standards is a hard sell, it is important to drive this message home – and the higher up in government hierarchy the better.*

Standards help us put ideas to good use; by not engaging, there is a risk of falling behind – of being delinked. Behind each standard, there is an idea – a thinker. The script tells us how to put the idea to good use. Take an ISO standard on how to improve quality management for medical devices. This particular standard was published in 2016 and has been revised at least twice[14]. Using it (or equivalent ones) means that we will benefit from an idea and a practice that have withstood both time and scrutiny; it has been tinkered with, re-written (scribe) and passed on (messenger). It is this circular process that is important: the iterative building of ideas on ideas, their improvement as times change, committing them to paper and passing them on. A functioning standardization system is a good messenger: it fosters diffusion of knowledge, it catalyses technical progress, facilitates trade and supports the economy. The NSB should be part of this dynamic process.

That is why use of standards is correlated to economic growth[15]. Diffusion of knowledge is essential for economic growth. The numbers are significant, even startling. A German study, for example, estimates that the economic benefits of standardization (in Germany), since 1992, have been within a range between 0.7% and 0.8% of GDP. This adds up to a total economic benefit of about 16.8 billion Euros per year for period from 2002 to 2006. Comparable studies in other countries have shown similarly significant contributions[16]. Some other studies focus on productivity; for example, a Canadian study shows that the growth in the stock of standards contributes positively to productivity and total real GDP growth (in Canada)[17]; similarly, a UK study from 2015 found a positive and significant contribution of standards to productivity over the period 1921 to 2013[18].

But how to explain the how? How do standards increase economic growth? What are the pathways? Yes, the literature tends to be quite complex: it speaks of asymmetries, inter-operability, network effects – innovation and technology, safety and quality. It quickly gets messy. Eyes glaze over. So much easier to see the public service provided by a road and a bridge – a hospital or a school; why bother with network effects! In arguing the benefits of standards, we need to turn the tables. We need to pose the question: who knows how to make cement? For that knowledge is needed to build that bridge, the hospital and the school, right? Who has the recipe? The stock of standards is like a good cookbook. It contains time-tested recipes transcribed from knowledge (ideas) and published so as to allow us – here in our country – to make cement. As the example that follows shows, the importance of standards in healthcare has become even more important recently.

[14] See: ISO 13485:2016 on Medical devices — Quality management systems — Requirements for regulatory purposes (www.iso.org/standard/59752.html).

[15] Commonwealth Standards Network (2020).

[16] Blind, K., A. Jungmittag and A. Mangelsdorf (2011), pp. 16-17.

[17] Standards Council of Canada (2015), p.16.

[18] British Standards Institution (2015), p. 9.

The Covid-19 pandemic exemplified the importance of access to medical supplies. Everyone understands the vital importance of access to medical goods. The problems of a missing adapter pales in comparison: different standards for medical devices will lead to delays that may endanger lives. This is not solved by buying an adapter at the gate before flight. More interconnectedness (not less) increase the ability to withstand shocks because there will be more sources of supply to products; this is about resilience. The fact that the recipe for it is available means that more can be produced. Of course, if the imported medical equipment is faulty, or the personal protective equipment of low quality, lives can be endangered[19]. Therefore, standards need to be used together with appropriate conformity assessment procedures (e.g. testing, inspection certification)[20].

Consider the difference between China's KN95 mask standard[21], the US N95 standards and Europe's FFP standard. Shipments of masks from China produced according to KN95 were initially not allowed on the US market because they were not produced according to the US standard (marketing authorization from Australia, Brazil, Europe, Japan, Korea, and Mexico were approved by the FDA in an earlier action). Nevertheless, the US Food and Drug Authority (FDA) later approved the use of KN95 masks as appropriate for the protection of public health or safety[22]. This is an example of different standards leading to trade disruption without any obvious benefit for the user. There was no benefit in this case because the difference in standards had very limited bearing (or none at all) on the performance of the product itself[23] (both masks were ultimately considered as safe by the US FDA). In this example, different standards hampered the movements of personal protective equipment when time was of essence.

Even the Pharaohs knew... History is filled with examples of how standards catalyse trade – whether domestic or international. Take the Egyptian pharaoh's forearm that served as a standard of measure for the foundation of the pyramids[24], or the railway gauge that helped United States revitalize economically after the Civil War[25], or the shipping container itself that has come to symbolize globalization. Today standards are also more complex. For instance, they may be about efforts to address common, global problems and provide solutions that are more optimal than what would arise if each industry (or each government) worked in isolation. An example could be standards to promote energy efficient appliances.

... that small differences disrupt trade. These examples, whether recent or past, are but a few – but they go to show that even small variations in product requirements (design, technical specifications, thresholds, definitions) matter – they can raise costs unnecessarily and affect resilience negatively. It is these types of differences that standardization tries to iron out. By providing a common benchmark, standards can lower transaction costs and facilitate trade. In a globalized world, the use of such standards at the international level take on added importance.

This is why the WTO rules encourage the use of international standards. The text of the TBT Agreement, therefore, promotes harmonization by requiring that countries use relevant international standards, guides, or recommendations as a basis for their standards, technical regulations, and conformity assessment procedures[26]. The logic here is straight-forward. If countries use a common benchmark for regulations, they are less likely to cause unnecessary trade frictions when they implement their regulations.

Hold your horses: trade is not an end in and of itself! In the words of the United Nations (Box below), trade is "an engine" for inclusive economic growth. "An" engine is not the same as "the" engine. For countries to prosper, they need peace – the absence of armed conflict, they need basic education and health services. And more. So, while it is true that standards facilitate trade[27] and that trade is one pathway to promote growth, being open to trade alone is not a panacea. It is one important ingredient in an infinitely more complex recipe to economic growth. Also the nature of that growth is also essential. Countries need to grow in a way that is sustainable and equitable. The beauty of standards is that here, too, they can play in an important role: they are based on international collaboration and are built around consensus, as such they provide essential tools for sound government policy, as well as guidance for industry and consumers contribute to the achievement of the SDGs[28].

"International trade is an engine for inclusive economic growth and poverty reduction, and contributes to the promotion of sustainable development. We will continue to promote a universal, rules-based, open, transparent, predictable, inclusive, non-discriminatory and equitable multilateral trading system under the World Trade Organization (WTO), as well as meaningful trade liberalization."

Para 68 of Transforming our World: the 2030 Agenda for Sustainable Development[29]

4.2. Participation and engagement

In brief: *Stakeholders need to feel that their participation and contribution has an impact, it needs to affect them. As an NSB, a key task we have is therefore to make engagement fruitful. This will bring better standards and in turn entice better comments. This is a positive feedback loop.*

Clarity on the role of the NSB. For the NSB to serve its role in supporting technical regulations, there must be clarity about its role, and it must carry some level of authority and recognition. In the absence of some level of recognition of the importance of standards work, as set out above, this will be difficult. Nevertheless, according to the ISO, around half of NSBs are departments of government, and the share is larger in developing countries[30]. The services that the NSB is intended to provide should be clearly spelled out: to facilitate the development – and publication of – of standards to be used as the basis for policies aimed at, for example, the promotion of health and safety, and the protection of the environment. This recognition is crucial for getting regulators to engage, especially if it means they are obliged to use standards in their technical regulations and need to work with or through the NSB. It is also important for setting appropriate expectations amongst the private sector[31]. If a business knows that it will need to comply, it will be more inclined to take a seat at the table an exert influence on the process.

The stronger the stakeholder engagement, the stronger the NSB. Stakeholder engagement is the foundation for the work of an NSB. In order to produce good standards, stakeholders must be engaged. If we want to bring together the brightest ideas and solutions (thinker) to the problem at hand, and make sure we write it down the right way (scribe), we need a multitude of perspectives and input. And then the message needs to be spread far and wide in the society, so that the standard is accepted, used, and its benefits multiply (the messenger). We need to continuously work with stakeholders, especially in the private sector and government, to gain their trust as an honest broker, to increase their understanding of standards and foster expertise to express views and shape standards development.

This is about making the case (see above) in a way that resonates with stakeholders' objectives and priorities. To this end, as an NSB, we should develop and implement a stakeholder engagement and communication strategy[32]. We need universities, researchers and users of standards (e.g. conformity assessment bodies) at the table to bring data and practical implementation experience to bear. Underrepresented groups need to be supported and heard, and barriers to their participation addressed, to ensure that small business, consumer, labour and NGO perspectives, gender, and concerns of the young, elderly and disabled are all considered.

[19] Financial Times (2020a).

[20] Financial Times (2020b).

[21] Lee, S. A., Hwang, D. C., Li, H. Y., Tsai, C. F., Chen, C. W., & Chen, J. K. (2016).

[22] See: https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/faqs-shortages-surgical-masks-and-gowns

[23] 3M (2020).

[24] World Bank (2019), p.69

[25] Bacchus, J. (2013), p. 2.

[26] World Trade Organization (1995), TBT Agreement Articles 2.4, 5.4, and Annex 3, paragraph F.

[27] One study shows that an increase in harmonization leads to an increase in trade flows; there is a scale effect whereby the use of standards increased the volume of trade. The trade promoting effect of standards (in terms of ad valorem equivalent), it is concluded, is comparable to a reduction of tariffs by about 2%. (Schmidt, J. and Steingress, W. (2019), pp. 34-35.)

[28] ISO (2018).

[29] United Nations (2015).

[30] ISO (2019), p. 99.

[31] ISO (2019), p. 85.

[32] ISO (2019), p. 85.

Know your stakeholders. It is a good idea to map and track both participation and actual contributions of stakeholders to ensure breadth and balance[33]. This means identifying all those groups that could be affected, interested, or have influence over the NSB: industry (from big to small firms), government, standards users (testing, certification and accreditation bodies), universities and researchers, consumers, labour, and NGOs. Once we know the stakeholders, we can more easily identify and target from within this group those that could have a particular interest on a proposed standard in the pipeline. Assessing those potentially interested is a question of the scope and objective of the standard, the possible effects of the standard, and who might use the standard[34]. It is important to bring the under-represented to the table and maintain a balance of interests in any technical committee. For this, we can take deliberate actions such as to identify specific groups and encourage their participation, for instance, by waiving participation fees or membership requirements[35]. Reducing barriers to participating on technical committees can also help, for example by opening space for SMEs. Efforts can be made to identify (outside) sources of funding to support participation of such groups.

Formal or informal? We need a plan! A mix of formal and informal efforts are needed to entice stakeholders; indeed, the impetus to develop a standard can come from any stakeholder, and all ideas should be given fair consideration. A regular public standardization forum organized by the NSB can be a helpful way to open the door for stakeholder engagement[36]. Publicizing opportunities for engagement can come through various mechanisms, for example by developing a National Standards Strategy[37] and regularly publishing a "Work Programme"[38]; disseminating and or publicizing proposals for the development of new standards at an early stage[39], and publishing a notice allowing for the opportunity to comment on draft standards[40] and inviting comments from specific stakeholders[41]. Getting on the spot feedback on drafts through extended technical committee meetings is another approach. Official channels can be complemented by outreach activities, such as communications, trainings and informal contacts. While it's not possible to reach everyone, this is essential for getting input from those stakeholders that can understand and take a position on the technical content of the standard.

4.3. The idea counts, not its origin

In brief: *Standards are important tools for supporting policy. Standards development – at the international level – is an increasingly important for of international cooperation. It will help our economies become more efficient and resilient.*

The decision to regulate is sovereign. Remember, the use of standards is voluntary. The TBT Agreement does not oblige a government regulate – for example to protect the environment or safeguard public health. Quite the contrary, at the WTO countries have emphasized the need to minimize the use of mandatory instruments[42]. The decision to regulate is not one not to be taken lightly; it is not, normally, the duty of a body that develops standards. It executes policy. But once a decision to regulate has been taken, the next step is inevitably about the how: how to turn policy to practice. This is about implementation. Standards become useful when they are understood as tools for implementing public policy.

The toolbox of international standards. Standards are good tools for policy. The TBT Agreement contains a strong encouragement for Members to base their requirements on relevant international standards. But it leaves each country the choice. The Agreement also creates a safe haven: there is a presumption (albeit rebuttable) that a technical regulation that is based on an international standard does not create an unnecessary obstacle to international trade[43]. This makes it much harder for another country to challenge a measure that is based on an international standard.

Standards development, done right, is multilateral cooperation in action. The encouragement to use international standards is at the very heart of the TBT Agreement. It is essentially a call for cooperation across nations. By nature, it is technical and scientific – driven by experts, functional counterparts, peers with a particular expertise. Of course, politics are present; that is inevitable in any international endeavour[44]. But we argue that the technical focus is a vaccine. Good standardization will focus on an applied, particular problem: a sequence of steps to ensure that the toaster will toast the bread, not you; that the helmet is safe, not flimsy; that you are confident, not suspicious, of the exact volume of fuel delivered at the pump. The cycle of thinker, scribe and messenger – at the international level – has the potential to bring in the best thinkers together across the globe. This catalyses innovation and promotes technology.

Cooperating will make us more resilient. The very starting point of the TBT Agreement emphasizes efficiency. The preamble of the TBT Agreement sets this out in no unclear language: international standards provide an important contribution to the efficiency of production and to the facilitation of international trade. The development of standards is also encouraged and the role of transfer in technology is mentioned in the very preamble of the Agreement. So, does this leave countries at the mercy of an unaccountable, foreign body? Should we not – the questions went above – be setting our own standards? Again, standards are origin neutral. The issue is not really the where but rather the how. A cookbook will not apply in one country and not another – at worst the measurement units may differ (itself a failure of standards!). But standards are agnostic on origin. So no matter where we are, if the supply of an essential product is disrupted on the market, for instance a medical device, or PPE in a pandemic, it will be important that the recipe it available so that anyone can make the product, wherever he or she is. This increases resilience. The more suppliers we have here at home or abroad, the more reliable the supply at home will be – because not everyone is bound to be affected at the same time, even in a pandemic.

So, participate! The TBT Agreement encourages Members to participate in the development of international standards. Not participating has several drawbacks. If we don't participate, we will not know what is going on - we will not have the relevant information. Second, we will not be able to influence the standards that are in the pipeline, or that are being developed, so that they are adapted – or at least take into account – our own circumstances. We have a shot at making them better. Third, if we are not there – we may, in some senses, lose sovereignty. This is because if we want to participate in international markets, we will have to adapt to what has essentially become the benchmark for international trade. In order to effectively participate in international standards development, as early as possible the NSB needs to take the lead in consolidating a well-founded national position (usually through a national mirror committee), so that this can effectively be represented internationally[45].

Establish the point of departure. There will, of course, be circumstances where available international standards are not useful. Perhaps they do not exist – or those that are available are either ineffective or inappropriate. This could be for climatic, geographical or fundamental technological reasons. In such circumstances, clearly, other standards – including national or regional may be preferable for us. Or we may, after all, need to start from scratch. Here the issue is one of establishing the point of departure: what is the starting point? It is better to see what is "out there" and use that knowledge, adapted, for our own circumstances, rather than the other way around: to start "at home", from scratch, and then realize later that the work has already been done. Again, where the idea originates is less important than the benefit you derive from its use.

It is important not to conflate sovereignty with efficiency. From a trade point of view, if we develop our own, national standard – our product may be good, but it is likely to be incompatible on the other side of the border. There is nothing sovereign about being incompatible. The point is that using international standards is not about relinquishing control. It is about efficiency, resilience and common sense. It is also about cost saving. In some senses international standards are a public good – yes, they are sold – but they are accessible to at reasonable prices, especially if the alternative cost is to develop one's own national standard.

[33] ISO (2019), p. 72 and 85.
[34] ISO/IEC (2019).
[35] ISO (2019), p. 72 and 84.
[36] World Bank (2019), p. 59.
[37] ISO (2020).
[37] World Trade Organization (1995), TBT Agreement Annex 3, para J.
[38] ISO/IEC (2019), p. 3.
[39] World Trade Organization (1995), TBT Agreement, Annex 3, para L.
[41] World Bank (2019), p. 59.
[42] World Trade Organization (2019a), pp. 6-8.
[43] World Trade Organization (1995), TBT Agreement Article 2.5.

[44] Büthe, T. and Mattli, W. (2011).
[45] ISO (2019), p. 145.

4.4. Walking the line

In brief: *As an NSB, we can't change mandates and legal frameworks overnight, but we can get better at walking (and recognizing!) the line between Good Standards Practices (GSP) and Good Regulatory Practices (GRP).*

The driver and the GPS. As a standards body, what is our ideal role in respect of government policy? When it's working well, it's a little like a car driver and the GPS[46]. In the car, the driver (regulators) will set the destination and then be offered, by the GPS (standard setter) a few alternative routes to get there. The GPS will not tinker with the chosen destination and the driver should not be tempted to choose a route that looks, at first glance, better based on whim. It is the division of roles that is important. Elected governments drive policy, not standards bodies. Politics can become a distraction. We, as a standards body, have an important role in charting the route. We are the GPS. At the executive level, governments (and their regulators) steer public policy to serve society, the environment and the economy. Clarity about the roles makes for better governance.

Good Standards Practices (GSP) make a good GPS. As a standards body, we provide the technical underpinnings for regulation – we convene the knowledge (thinkers), commit it to paper (scribe) and pass it on (messenger). The best collected works on how to do this – that is, Good Standards Practices (GSP), have been developed by the ISO[47] based on the WTO TBT Agreement's Code of Good Practice and guidance developed by the WTO Members in the TBT Committee. Using Good Standards Practices (GSP) will make us a better GPS (see section 5 for further discussion).

Remember the differences! Standards establish order in the market; when done right, they engage a wide variety of stakeholders. The use – or non-use – of a standard is a choice: it is voluntary. A good standard will gain traction, and a bad one will be forgotten. A good standard, normally developed by consensus rule, may help government navigate policy effectively by providing a good basis for technical regulations. Technical regulations, in turn, are an expression of government policy. Decisions taken by government need to be informed; they should be based on international guidance on Good Regulatory Practices (GRP, see Section 5.2, below). But unlike standards, they need not necessarily be based on consensus. And also, unlike standards, all technical regulations must be followed, even those that are unclear, dated, or block innovation. So, while technical regulations have many names: laws, regulations, directives, decrees, orders, acts, mandatory standards, etc. they are all mandatory. They must be followed by force of law, and there are consequences for not complying like fines or even jail time.

So where is the nexus? The connection between the regulator (the driver) and standards (the GPS) comes to the fore when the regulator uses standards to support policy – when he relies on the GPS to get to his destination. This is achieved through referring to standards in technical regulations. The regulator wants to ensure that the electronics are safe to use, or that the food is safe to eat, and the standards provide the technical solution to reach that destination. There are various techniques used by the regulator (see Section 5.2, below) to tap into the technical known how of standards achieving essential regulatory requirements. The benefits of doing so are multiple, including a higher degree of acceptability of the regulation since it will be based on a consensus solution already agreed and codified in a standard. This is not about telling the driver where to go, it is about helping them find – or at least not lose! – their way, so that time and resources are not wasted, for instance by reinventing the wheel.

But walking the line is difficult. This section started, above, with the question about the ideal role for standards in government policy. But reality is more complicated, of course. Many NSBs are product regulators either formally or simply de facto – so keeping a strict separation between standards and technical regulations may not be practical. It is important to recognize that if a standards body is given the legal power to regulate in order to achieve government policy objectives – it is, by definition, a regulator. It is the actual role of the body that is important, not the label. If the NSB is acting as a regulator in certain circumstances it then carries the additional responsibility of sitting in the driver's seat, and there are other rules of the game: good regulatory practices (GRP).

In the long run, however, this line may be difficult to walk. As we will see below, confusing the two is sand in the machinery. If you are the driver, you don't want the GPS to tell you where to go (perhaps in particular if the GPS is foreign). But you will expect the GPS – no matter brand, make or origin – to give you options for how to get to your destination. As the NSB, you need to focus less on politics and more on the data, the technical aspects, the latest information, updates, solutions – so that you can offer the best alternative routings to the driver. The roles are distinct: the GPS (standard body) should not tinker too much with the destination; the driver (government setting policy) should feel comfortable enough to trust the GPS and not be tempted, when he comes to that fork in the road, to go down the garden path.

4.5. Knitting the Web

In brief: *To survive, a spider needs a strong web. Very often, the NSB is well placed to serve as a National TBT Coordinating Committee (an "NCC") – whichever organization takes on the role, an NCC helps create strong mechanisms for coordination and regular engagement.*

Not a predator. To be effective, coordination requires deliberate mechanisms and some drawing force. As an NSB, we need to stay close to the centre of the web without looking (or acting) like a predator. We want to "catch" developments at home or abroad that are of significance to our industry, turn them around and promote our country's own agenda effectively. A strong web allows the NSB to monitor the development of regulations domestically and point and shed light on happenings elsewhere of concern. The TBT Agreement does not mandate that countries coordinate internally, but, in practice, a 'National TBT Coordination Committee' or 'mirror TBT Committee' (referred to as an "NCC" hereafter) is often used. Indeed, this has evolved as a good practice in the TBT area[48]. Several regional agreements now actually require the setting up of NCCs[49]. A more recent (and related) WTO agreement, on Trade Facilitation (it entered into force on February 2017), cements this trend in law: it mandates the establishment of such a committee:

> *Each Member shall establish and/or maintain a national committee on trade facilitation or designate an existing mechanism to facilitate both domestic coordination and implementation of the provisions of this Agreement.*
>
> (Article 23, Para 2 of the WTO Trade Facilitation Agreement, emphasis added)

Who should drive it? Many countries do not have a formally appointed coordination hub; in practice, the role has either befallen the TBT Enquiry Point or the National Notification Authority (NNA). There is, of course, no one model for this: the objective, structure and composition must be adapted to each national context; function comes before form. Also, it does not really matter whether meetings of the NCC are formal or informal[50]. Sometimes there is a legal mandate and formal terms of reference; sometimes it is informal. It is important, however, to ensure that the development of formal terms of reference does not in and of itself become a hurdle. Meetings can be chaired by the institution housing the coordination – or the Chairpersonship can rotate among stakeholders. Again, the position (level and institution) of the chairperson is less important than the competence and knowledge of the incumbents.

Two important seats at the table. The WTO TBT Agreement requires the notification of proposed technical regulations (mandatory standards) and conformity assessment procedures for comment. For this purpose, WTO Members must establish a central government National Notification Authority (NNA), that is responsible

[46] In the sense of satellite-based navigation system Global Positioning System (GPS).

[47] ISO/IEC (2019).

[48] World Trade Organization (2019b), pp. 6-7. WTO members' experience from the SPS area has shown that countries that have a formal or an informal national SPS Committee fare better in managing SPS issues (Standards and Trade Development Facility (2012)).

[49] See, for example: SADC (2014).

[50] For example, around one third of all SPS coordination mechanisms in Africa are formal, while the other two-thirds are informal (Standards and Trade Development Facility (2012), p. 7).

transmitting notifications to the WTO. This is often the ministry of trade[51]. WTO Members are also required to establish national enquiry points; this is often housed in the NSB[52]. It is notable that the enquiry point has a much broader mandate than the NNA. Separate and elaborate guidance has been developed specifically for enquiry points by the WTO[53]. In respect of coordination, however, it is important that both the NNA as well as the enquiry point have a seat at the table.

How to attract the others? The purpose of the NCC is to review any issue related to the implementation of the WTO TBT (and SPS) Agreement. It is about keeping an eye on the developments – at home and abroad – that may impact the economy. It is about establishing mechanisms for stakeholder consultations to address trade issues arising from the use or regulations and standards. This is broad! The risk is that no one will come ("you can hear a pin drop"). So how to proceed? The following are some best practices drawn from various governments that help attract stakeholders and keep them interested.

1. Being clear about the why.
Are you meeting because your exporters are complaining? Or is it rather the opposite: a trading partner is complaining about one of our own measures. Either case is good news because it is something specific and at least one stakeholder is on the hook. Two examples:

a. Flowers: new EU regulation affecting our exports! (offensive interest)

b. Toys: China's and India's comments our new quality rules affecting imports of toys. (defensive interest)

2. Knowing who to invite. It is important have both the NNA and enquiry point present.
Other key participants are: the NSB (if different from the enquiry point and/or NNA); relevant ministries and regulators (e.g., trade, industry, health, agriculture); private sector, including business associations; export promotion boards; universities; consumers; and, other relevant bodies – such as accreditation bodies, conformity assessment bodies. Not everyone needs to come every time! And that should not be the expectation. What guides attendance is the what is on the agenda.

3. So, what to put on the agenda?
This is about promoting national interests on specific issues. It is about being able, for example, to effectively engage at the WTO – either by defending an own measure or challenging a trading partner:

a. Defensive: Have any of our own measures been challenged?

b. Offensive: What specific measures taken by another country is of concern?

c. When, where and who should articulate a position in respect of (a) and (b)?

4. When should you meet?
Typically, coordination meetings take place before TBT Committee meetings in Geneva. This means at least three times a year. The timing allows participants prepare the country's position ahead of the meeting.

5. What is next?
As the NCC gathers steam, it can slowly move from the specific to engaging in more generic issues: for example, what can be done promote better practices in the area of standards and regulation? How should the government engage in the development of generic guidance in the Committee, e.g. in the area of transparency and/or conformity assessment – for example in the context of triennial reviews?

The agenda. Of the above, the why and the what are crucial – without there being clarity on these two points, there will be no who (no one will come), no when, and nothing to do next. The why is essentially about the agenda. The private sector, for example, is unlikely to engage unless there is information that will impact them specifically and directly. And they need to know, again, specifically, what the issue is. Targeted information will draw them in; it will animate the coordination. A service provided by the WTO called ePing[54] can help identify specific measures in other countries that are in the pipeline. So, if the agenda clearly states that under Agenda Item 1 there will be a discussion about a new European regulation affecting the exports of cut flowers from an East African country, any you are a major flower exporter – this is something you are unlikely to ignore. Moreover, if it becomes clear that your attendance actually influenced your country's position in Geneva this is a good reason to come again or bring another pressing issue next time.

Stepping on toes. Cooperation doesn't always come naturally, and regulators might need some cajoling. This can stem, for example, from lack of clarity on roles or uncertainty about authority (to regulate or not?). This is fertile ground for turf wars. There may be competition over mandates or resources, or both. While this is a reality in many countries – irrespective of level of development – keeping an eye of on specific agenda points (cut flowers, organic coffee) helps focus minds. As discussed further above in this paper, regulators need to see standards as support for what they do, a source of knowledge and expertise that can support their work; or for a trade ministry participant – support his position taken at the meeting in Geneva at the TBT Committee. The work of the National Committee can serve as a lightning rod for reactions, where a confluence of different views and perspectives churn and then turn outwards – to better promote the interest of the country as a whole.

Outcomes. Regular meetings of the National Coordination Committee can provide useful and concrete outcomes. Here are three examples:

1. Dialogue.
The NCC will provide a forum for dialogue. This is perhaps its most important function. Dialogue will help raise awareness of trade-related issues in the area of standards and regulations. It will help clarify roles and responsibilities, making discussions more efficient. And it may also help pre-empt and/or resolve controversy.

2. Notification.
Discussions in the NCC can provide clear guidance on what measures (technical regulations and/or conformity assessment procedures) that are in the pipeline that should be notified.

3. Advice. The NCC can provide the groundwork and for two main types of interventions by its government:

a. The first can be a specific intervention (offensive or defensive) at the WTO TBT Committees. Such an intervention can be a reaction to another country's measure based on an incoming notification (offensive) or in response to another Members reaction to an own notification (defensive). The intervention may not necessarily be at the Committee; it could also be a comment provided bilaterally, or the first basis for a discussion. A coordinated intervention – drawn from expertise at home – makes participation at the WTO, at whatever level, more effective.

b. Another type of intervention can be a submission, a proposal in writing or simply a substantive engagement on generic guidance in international work, whether at the WTO Committee, in an international standardizing body (such as the ISO or IEC), or even in other international or regional fora. For instance, this could be about developing guidance on enhancing notification procedures, on deciding on what that appropriate conformity assessment approach is in a particular situation – or even deciding on relevant international standards.

[51] World Trade Organization (2018).
[52] World Trade Organization (2018).
[53] World Trade Organization (2018).
[54] See: www.epingalert.org.

5. Good practices

In this section, we take a closer look at what we mean by Good Regulatory Practice (GRP) and Good Standardization Practices (GSP) – and the reflect on why these two need to be kept separate. Then, in Section 7, we will situate these practices in the bigger picture – GSP within the quality infrastructure and as part of a "quality policy" – and GRP within the technical regulatory framework.

5.1. Ten Degrees of Standards

Standards support regulation. Standards sit at the nexus between knowledge and policy. They support regulation by providing key technical underpinnings[55]. The NSB convenes the knowledge (thinkers), commits it to paper (scribe) and passes it on (messenger). It is, essentially, the facilitator of the how. Here the best collected experiences are Good Standardization Practices (GSP) which have been developed by the ISO[56], based on those contained in the WTO TBT Agreement's Code of Good Practice in conjunction with separate guidance developed by the WTO Members in the TBT Committee[57]. GSP reflect the development of standards in practice – from identifying the need for a standard, through its development, approval, dissemination, and review. It is possible to see this as a lifecycle from idea to a fully functional GPS[58]. Based on work done by ISO, the text of the WTO TBT Agreement and the work of the Committee, ten steps of GSP are highlighted[59].

1. Understanding the need for a standard.
The NSB should cast a wide net. It should proactively and openly engage its stakeholders to understand their needs, gather ideas and earn their trust. A National Standardization Strategy can be an important tool for this[60]. An annual standardization forum can provide another outlet. A proposal to develop a standard must clearly explain the justification: how it solves a real or potential problem. It can come from any stakeholder and all proposals should be given equal consideration. Aside from resource considerations and prioritizing its work, the NSB may consider the net benefit to society of the proposed standard[61].

2. Early notice through work programme.
The public, as well as other stakeholders, needs to be aware that work on the standard will start. The NSB should publish a standardization work programme and update it at least once every six months to reflect standards under preparation and adopted. Preferably, this information is maintained on a webpage, where announcements can be reflected without delay. The work programme should be notified by the NSB through the WTO ISO Standards Information Gateway[62].

3. Gathering the experts.
Once the decision is taken to develop a standard, experts must be convened. This can be done through an existing technical committee or by establishing a new one; alternatively, work can be delegated to a working group. The NSB needs to get everyone important (and interested) in the room, including regulators. Invitations to join the technical committee can be sent to key stakeholders, or underrepresented groups, to ensure balance (depending on the subject matter).

4. Good basis and design.
Ensuring that the standard has optimal technical content based on state of the art in science and technology, drawing from the best thinkers.

a. It is best to specify requirements in terms of performance, rather than design – which is prescriptive and hampers innovative solutions. This contributes to the effectiveness and relevance of the standard.

b. Using international standards and sources of guidance ensure that the standard taps into the latest technology and science.

[55] ISO (2019).

[56] ISO/IEC (2019); ISO (2019), Section 7.2.

[57] World Trade Organization (1995), TBT Agreement Annex 3; World Trade Organization (2019a), pp. 18-22, 62-64.

[58] ISO Guide 59, 4.1

[59] These 10 steps draw in particular upon: ISO (2019), Section 7; World Trade Organization (1995), TBT Agreement Annex 3; and, World Trade Organization (2019a), pp. 62-64. More specifically, they consider the WTO TBT Six Principles for International Standards Development (Transparency, Openness, Impartiality and Consensus, Effectiveness and Relevance, Coherence, Development Dimension) and the three additional principles advanced by the ISO (Stakeholder engagement; Due Process; National Adoption).

[60] ISO (2020).

[61] ISO (2019), p. 130.

[62] See: https://tbtcode.iso.org/sites/wto-tbt/home.html

c. The standard should not duplicate or contradict existing standards (or standards developed by other national bodies). The approach needs to be coherent. It should consider on-going work and avoid overlap.

d. The WTO TBT Agreement also applies to standards – this is sometimes forgotten[63]. In designing the standard these principles are important: for example, standards should not create unnecessary barriers to trade and should not be discriminatory in effect or intent.

5. Don't start from scratch!
The NSB should make sure that the solutions provided by international standards are available and understood by the technical committee experts so that they can be adopted. From a trade perspective, identical national adoption is preferable, however sometimes modifications are required to adapt the standard to the local context, e.g. due to climatic or geographic factors, or technological problems[64].

6. Learning from public consultation.
The draft standard should be made available for public review and comments. A notice should be published (on NSB website or other appropriate media) announcing the opening of the comment period, and basic information should be provided in that notice to allow stakeholder to understand the standard's scope and purpose, including whether it deviates from international standards. At least 60 days should be given for presentation of comments. Inviting comments from specific stakeholder groups can help ensure wide feedback. Comments from international stakeholders should be give equal consideration[65]. Gathering and carefully considering comments is integral to making standards better. Those who provide comments should receive a response, and an explanation of how (or why not) comments are being taken on board. Stakeholders submitting comments should have the opportunity to present them to the technical committee in person if they wish.

7. Finding consensus.
The NSB Secretariat supports the technical committee must be a neutral and independent intermediary. Overcoming divergences and bridging gaps is the essence of the "scribe function" – and probably one of the most difficult. Sustained opposition by one participant or group is not meant to serve as a de facto veto[66] – consensus need not imply unanimity. Voting should only be used as a last resort, under clearly established procedures. Consensus is defined by ISO as general agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments[67].

8. Being a good messenger (publish, disseminate, communicate).
Once the standard is approved, it should be published as soon as possible. Often, a notice of approval is issued at the same time, to alert stakeholders, for instance through the NSB website. The standard should be listed in the NSB catalogue and made available for purchase and use. The NSB must publicize and disseminate the standard, to promote its use. The NSB is a source of information for others – to use, to refer, to react. Getting information out is core to its messenger role.

9. Appeal process.
The NSB should have an impartial process for appeals against the approval of a standard, for instance, on technical or procedural grounds. This is an important part of ensuring due process.

10. Review and maintain.
Standards must be reviewed regularly, at least every five years and in some cases sooner depending on the subject matter of the standard. This can be based on data and experience gathered in its use, assessed against the original need for the standard. The result of a review can: confirm the standard as is, revise the standard (restarting the lifecycle) in line with the state of the art, or withdraw an obsolete standard.

[63] World Trade Organization (1995), TBT Agreement Annex 3.

[64] ISO/IEC (2005); World Trade Organization (1995), TBT Agreement Article 2.4, 5.4, Annex 3F.

[65] ISO/IEC (2019).

[66] See, for example: Standards Council of Canada (2019), p. 10.

[67] ISO/IEC (2019).

5.2. Ten Degrees of Regulation

Regulation is an expression of public policy. Governments set mandatory requirements aimed at safeguarding health or protection of the environment, or national security (common examples, the list is not closed). Good Regulatory Practices (GRP) guide the process of preparing, adopting and applying legislation. The OECD describes GRP[68] as policies, tools and institutions for ensuring that regulations are justified, of good quality and achieve policy objectives[69].

High quality regulations promote better outcomes for society, the environment and the economy. GRP are widely accepted practices that help ensure that regulations are fit for purpose and do not impose unnecessary costs on society. They envisage a life-cycle approach to regulation, from identifying policy objectives, through design, enforcement, and retrospective review, coming full circle[70]. In the WTO context – and more specifically the TBT Committee, which is the Committee where regulatory matters are most often discussed at the WTO – GRP is described in terms of how to apply and use the TBT Agreement in practice. This is about how best to implement the provisions of the Agreement to achieve a particular policy objective.

Drawing on work done over the last 25 years in the OECD and APEC, and at the WTO, we highlight ten key elements of GRP[71]:

1. Whole of government.
The development of regulation needs to take place in a cooperative and coordinated manner throughout the whole government. Attribution of roles and responsibilities is an important prerequisite.

2. Problem identification.
Regulation must address a problem – current or future (a market failure) – and pursue a legitimate objective. This can, for instance, be about human health or safety, or the protection of the environment. The triggers can be several: accident reporting, evidence of pollution, petitions from the public – to give some examples.

3. Should the government act, and what's the right tool?
Once the problem has been identified, a further consideration will be whether government action is necessary in the first place. This also means considering the option of not intervening at all. Once the need for government intervention is established, the merits of mandatory regulation must be weighed against other tools that stand at governments' disposal (for a technical regulation may not necessarily be the best tool for the problem that has been identified). For example, to promote renewable energy, it is possible that some form of financial support is more effective than regulation.

4. Early notice.
Assuming regulation is appropriate and necessary, it is useful for stakeholders, at home and abroad, to be alerted about any anticipated activity. One way to implement this is to ensure that government are aware of where to access such information, for instance through publication in government gazette – or other website[72]. This will enable them to engage more effectively when an early draft of the proposal has been developed.

5. Design.
A subsequent step will be the design and development of the regulation itself. An important step in developing a regulation that is "fit for purpose" is to identify alternatives and then to compare these across a range of criteria. This can be done, for example, with a Regulatory Impact Assessment (RIA)[73]. In assessing the various options and calibrating the intervention, the following questions may be useful to consider:

a. What is the nature of the risk? (e.g., human life or consumer deception);

b. To what degree will the regulation contribute to the stated goal? (effectiveness);

c. Do the benefits justify the costs? (efficiency);

d. What will the likely effects across society taking economic, environmental and social effects into account? (distribution);

e. Are like products treated the same way irrespective of origin? (non-discrimination);

f. Does the regulation allow for / encourage innovative approaches or solutions? (e.g.,

[68] GRP is also referred to as "regulatory policy", "regulatory reform" or "regulatory quality". OECD has produced a series of instruments and documents on GRP, the most important of which is OECD (2012).

[69] OECD (2012); OECD/WTO (2019).

[70] OECD (2012), Principle 1.1.

[71] OECD (1995); APEC/OECD (2005); OECD (2012); OECD (2014); OECD/WTO (2019).

[72] World Trade Organization (1995), TBT Agreement Article 2.9.1 and 5.6.1.

[73] Regulatory impact assessment (RIA) (also called regulatory impact analysis) is a systematic process to assess likely benefits and costs arising from regulatory or non-regulatory alternatives for achieving a policy objective. It may be based on cost-benefit analysis and may consider quantitative and qualitative aspects.

descriptive vs. performance; does it recognize and allow for other ways to achieve the same objective?);

g. Is the measure evidence based, drawing on the latest data, science and guidance irrespective of origin of such information? (as embodied in international standards, international regulatory cooperation (IRC));

h. How will compliance be measured / checked? (e.g., inspection, certification, market surveillance, recognition of conformity assessment results of other countries, etc.);

i. Is the regulation clear, concise, coherent and complete? (accessibility).

6. Basis.

It is important not to reinvent the wheel. Regulations should be based on relevant international standards whenever possible – or even regional standards. Other guidance may also be worth considering, such as frameworks developed in the context of international regulatory cooperation[74].

7. Transparency and consultation.

Openness and accountability should be inherent in the making of the regulation. Automatic triggers aimed at engaging all relevant stakeholders should be built into the process. For example, proposed regulations that affect international trade should be notified to the WTO to allow for trading partners to comment (60 days). Comments should be taken into account. This means that there should be time for such comments to actually affect the design of the final regulation.

8. Decision.

At some point a decision has to be taken. This is not necessarily a consensus decision, but it needs to be an informed one, with a legal basis. Following an open and accountable process will provide greater confidence that decisions are objective, impartial, consistent and without conflict of interest, bias or improper influence. Often (but not always), a degree of independence – "arm's length" – from government can provide greater confidence and trust that decisions are made with integrity[75].

9. Publication, reasonable interval, guidance and enforcement.

Once the measure has been finalized and adopted, it should be published together with the rationale and any assessments made (e.g. RIA). This can be done, for example, in an official gazette or public website. It is advisable to also notify the final text to the WTO. There should be a reasonable interval between publication and entry into force of the measure. This is to allow producers both at home and abroad to adapt. It is also be important to provide guidance for compliance, prior to entry into force. This guidance should be practical, timely and informative. Enforcement will take place through conformity assessment procedures and market surveillance (or other controls). Appeals against decisions on due process or procedural fairness grounds must be possible.

10. Monitoring and review.

Regulations shouldn't sit on the shelf gathering dust. It is important that the stock of regulation is monitored and regularly reviewed (for example through ex-post RIAs) for its continued fitness. This may include checking whether it is working and serving its original purpose in an efficient and cost-effective way. This could also be about assessing the need for amendment, further simplification or even repeal. It is also important that the regulatory system has the capacity to detect emerging issues or changes in state of the art, which may call for a rethink of the rules on the books.

[74] OECD/WTO (2019).
[75] OECD (2014), p. 47 and 67.

5.3. Similarities and Differences

Above we have looked at the GSP and GRP, respectively. Below, we will consider how these to practices merge into the larger, "Big Picture". But it may be worth pausing and considering some similarities and differences. Put very succinctly, while a standard is about finding agreement – often by consensus – around the table for how to solve a particular technical problem, regulation is a decision about how to deal with the problem. The latter, the decision that is, needs to be informed – but it is not necessarily taken by consensus. Regulations are enforced in law, standards are not. Regulations need to be notified to the WTO, not so standards.

Regulation furthers policy... A key role of central government is to direct public policy so that it will efficiently and effectively serve society, the environment and the economy. Regulatory agencies (or bodies carrying that authority) are the executive arm of government. A government will use various ministries to do this, often subdivided in agencies and bodies with specific mandates (there is no one model for this). Regulators are entities[76] responsible for – and authorized by statue – "to use legal tools to achieve policy objectives, imposing obligations or burdens through functions such as licensing, permitting, accrediting, approvals, inspection and enforcement".[77]

... and standards support regulation. Technical regulation should be based on standards, preferably international standards, as stated above: standards support regulation by providing key technical underpinnings. Standards and the NSB have a very important part to play in the "Bigger Picture" – that is the Technical Regulatory Framework and the Quality Infrastructure to which we turn to next.

Standards support regulation by providing key technical underpinnings.

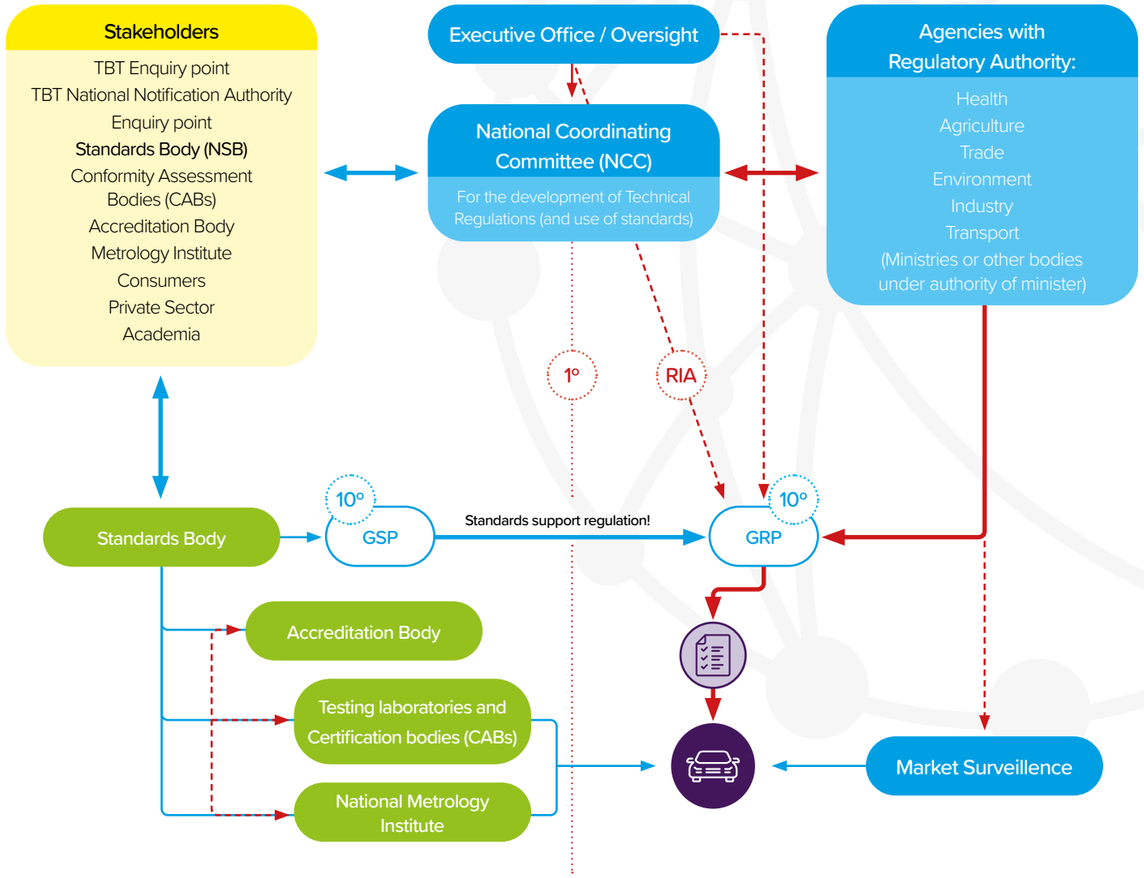
[76] OECD (2014) notes that regulators may take a variety of institutional forms; it may be a unit within a ministry or a separate entity with its own statutory foundation, governing body, staff and executive management. Regulatory functions may be discharged at a national or municipal level, or by a regional authority body. (p. 18).
[77] OECD (2014), p. 17.

6.
The big picture

6.1.
One Degree of Separation

Complexity increases need for a "whole-of-government". Today's global economy is extremely complex and as countries grow wealthier, the need for better regulation increases. And so, then, do demands on regulators: they find themselves with hands in many different realms of governance. Even the regulation of a single product may potentially cut across competencies. How, then, to avoid a jumble of hands and fingers – and stepping on toes? We think that an important part of the answer is a "whole-of-government" approach. The "big picture" graph below is one way of looking at it. As discussed in the "driver and GPS" metaphor previously, regulators and standard-setters have essential but distinct and separate – roles. It is important to consider how best to bring together the regulatory (policy) and standards (technical) streams of work in a way that is both efficient and effective in serving the public good.

Keeping things separate. A useful way of considering the governance of standards and regulations in the Graph is to essentially divide the discussion in two areas: The technical regulation framework (blue) and the quality infrastructure (green). Everyone is a stakeholder, so these have been given their own box and colour (yellow). Standards – part of the quality infrastructure – supports regulation; this work is, of course, not immune from politics – but it



is essentially technical at heart: it should inform the decisions of government, not dictate them. Remember the driver and the GPS! Standards provide the technical underpinnings (thresholds, definitions, recipes, technical requirements) based on consensus among those with the knowledge on the subject matter, often world-wide. To blur the line between role of policy makers and the role of standard-setters risks hampering both. Policy makers risk being side-tracked by technicalities and the standard setter risks being distracted by politics. This is sand in the machinery. The main point here is that good standards make for good regulation but mixing the two comes with risks. A degree of separation is important.

Shades of blue and green. We stress that Big Picture Figure is one way of describing governance in the area of standards and regulations; it is a possible approach. There are many other ways. This is no one blueprint. As has been said elsewhere in this paper, reality comes in shades of grey (or blue and green). The boxes, lines and colours may – may in reality – be less distinct as circumstances vary.

6.2. The Technical Regulation Framework (the blue)

Oversight with authority. A technical regulation framework (also sometimes referred to as regulatory policy) provides the legal basis for government policy[78]. It is intended to ensure that actions respect the rule of law, and that they stem from executive authority. As such, the framework is an act of government that anchors GRP into a whole-of-government coordinated approach, promoting consistency and accountability. In practice, this function is sometimes performed by an oversight body, such as the Prime Minister's Office, the Ministry of Justice or another entity with clout.

Blue: the hand of government. The blue part of the graph depicts the hand of government. This runs from the top (e.g., Executive Office) through the various line ministries and other bodies with regulatory authority to the development of regulations. Regulations are developed using good practices (see 10° of GRP) and supported by standards, also developed with good practices (see 10° of GSP). As we have seen, there are many steps along the way. One that we have only lightly touched upon is the use of Regulatory Impact Assessments (RIAs).

Promoting a culture of accountability, checks and balances: RIAs. The technical regulation framework needs to instil a culture of sound, justified and transparent regulatory decision-making. This culture needs to be driven from the top down. For this, RIAs are an important tool, especially for government interventions that may have significant social, economic or environmental impacts. This is about, for example, considering alternatives and weighing up the costs and benefits of intervention – indeed, RIAs are a core component of GRPs, discussed above. The RIA will check that the proposed regulatory intervention addresses the problem that it is supposed to solve (e.g., pollution, level of safety) and that it actually delivers a net benefit compared to other possible alternatives. The oversight body may mandate and monitor the use of RIAs conducted by regulators (see the dotted red line in the Big Picture Figure).

How standards support regulation. Another essential element to the technical regulation framework is the support provided by standards. As we have seen elsewhere in this paper, technical regulation needs to be based on international standards. This is achieved by referring to standards in regulations. Here, the preference is to refer to an international standard, or to a national standard that is an identical adoption of an international standard – or, if the national standard is a modified adoption of an international standard, this can be referenced, but this is a second-best option. How to do this? There are essentially three techniques.

[78] Usually technical regulations are secondary legislation, implemented based on primary enabling legislation. In that case, the primary legislation may also set out guidance for the technical regulation, which also should be coherent and consistent with the overall technical regulation framework.

1. Incorporation of the standard means that the content of the standard is included in the technical regulation (as a cut-and-paste) and is mandatory. This gives the most legal certainty and clear regulator control over requirements but is least flexible and can create issues for standards copyright. When standards are updated, the whole regulation must be revised.

2.Direct reference means that the title and number of a standard is included in the technical regulation and its requirements must be complied with. In some cases, multiple standards are directly referenced as alternative compliance options. This allows only a certain part of a standard, or even a specific paragraph, to be referenced as needed to support the technical regulation. Direct referencing can be dated or undated. A dated reference includes year the standard was published, to make a reference to a specific edition of the standard. This approach provides legal certainty and clear regulatory oversight. However, it is less flexible and requires that references in the technical regulation are revised each time the standard is updated. An updated reference does not include a date and means that the technical regulation will always refer to the latest edition of the standard. The advantage with undated is flexibility, and there is no need to revise the regulation each time standards are updated. But it provides less legal certainty and reduces the oversight by the regulator. It involves a higher degree of trust in the standard setting process, that an updated version of the standard will continue to serve the policy objective of the regulation[79]. Direct reference is commonly used in the United States.

3. Indirect reference means that the technical regulation specifies essential regulatory requirements (not technical details), and does not include a standard name, title or date. Standards are instead published in a separate place (list or website) as an indicative means of compliance – in other words, if you follow the standards you are presumed to be complying with the essential requirements of the technical regulation. Indirect reference in theory provides most flexibility for regulated entities to comply, and standards referenced by regulators can be easily updated. On the other hand, regulators rely heavily on standard setting bodies – and the standards they develop – to meet the policy objectives set out in regulation. Indirect reference is used in the European Union's New Approach Directives.

In practice, all three of these techniques render the use of referenced standards (or certain parts of them) mandatory. While the technique of indirect reference preserves the idea that the standard is voluntary – as "one way" of satisfying requirements – in practice, the referenced standard is often de facto mandatory for market access since other options for compliance must be identified by the supplier and are cost prohibitive or not available. Referring to standards does not mean that regulators give up responsibility to the NSB. The responsibility for achieving legitimate objectives remains the sole responsibility of the regulator. At any time, a regulator can amend its regulations to remove a reference to a standard, if they no longer trust its validity for achieving legitimate objectives.

Linking the CAP to the technical regulation. It is important that there is clarity on the conformity assessment approach taken: this should be set out in the technical regulation. For example, for low risk products, and in countries where there is a strong product liability regime and rule of law, supplier's declaration of conformity can be used as a trade facilitative approach. On the other extreme, high risk products may require testing, inspection or certification by a third party (and sometimes even audit of manufacturing facilities). Conformity Assessment Bodies (CABs) – marked in green in the Graph – can be both public and private. In many developing and least developed countries, the government and NSB are heavily involved in conformity assessment, operating their own product certification schemes and marks (which generate revenue). But this can be slow and burdensome for manufacturers, risk conflict of interest (without adequate safeguards) and not effectively address risks and non-compliant products due to lack of

[79] There are additional qualifications which can maintain the basic distinction between dated and undated referencing while adding further nuance and flexibility. For example, a Standards Council of Canada guidance document presents the option of a dated reference which includes all future amendments to the referenced standard (through a specific wording of the reference). This approach allows for the reference to incorporate future changes to the standard, but not any new editions of the standard. (Standards Council of Canada (2006)).

market surveillance capacity. Instead, some countries have turned to pre-export verification of conformity, where multinational CABs are contracted to carry out mandatory certification against technical regulations (or mandatory standards). This introduces another set of problems, in terms of cost to the country (and opportunity cost of not investing in domestic capacity), and proportionality.

Who is responsible for enforcement? The technical regulation framework should also clarify who is responsible for enforcement. This can be done by identified regulatory authorities that are empowered to conduct market surveillance (and use other pre-market controls as needed) in respect of the technical regulation. It is important that the government maintains responsibility for market surveillance (right and blue side of graph). Sanctions can be levelled for non-compliance, including rectification (e.g. if a label is incorrect), suspension of marketing authorization, or recall (for significant issues). Legal proceedings can be initiated if firms do not comply with sanctions.

Enter Quality Infrastructure (QI). The technical framework relies on the services of the QI. For instance, the NSB provides standards that are reference in technical regulations, while CABs help the government ensure conformity of products. As we shall see below, the state of a country's QI is very important for its competitiveness.

6.3. The Quality Infrastructure (QI) (the green)

The Quality Infrastructure is intended to support the Technical Regulation framework. The WTO TBT Agreement is the international instrument that deals with the interface of technical regulations and standards. It strongly encourages governments to use relevant international standards as a basis for technical regulations and sets out international disciplines on the implementation of different parts of the QI (standards, conformity assessment, accreditation) to avoid unnecessary barriers and facilitate trade. But there is no one way of organizing QI.

Here, there and everywhere. It is difficult to put a finger on exactly where QI is situated. This is not because it is hard to find, it is because it is a bit everywhere. Clearly, standardization stands out as a one of the key pillars of QI, along with metrology, accreditation, conformity assessment. But it is more than that. Many of the other pillars depend on standards to do their work well. Quality policy is essentially about various institutions functioning in a coherent way together.

A group of relevant international organizations define QI as follows:

The system comprising the organizations (public and private) together with the policies, relevant legal and regulatory framework, and practices needed to support and enhance the quality, safety and environmental soundness of goods, services and processes.

The quality infrastructure is required for the effective operation of domestic markets, and its international recognition is important to enable access to foreign markets. It is a critical element in promoting and sustaining economic development, as well as environmental and social wellbeing.

It relies on metrology, standardisation, accreditation, conformity assessment, and market surveillance[80].

QI matters for the consumer! Consumers increasingly demand more information about what they buy, including about things you cannot see in the product itself. For example, there is more awareness about environmental sustainability, about the origin (traceability) of products, about harvesting methods. This may be about agriculture (e.g. organic), forestry (e.g. illegal logging), or fisheries (e.g. sustainability of stocks) – or even electronics (e.g. energy efficiency). Most of these qualities are intangible in nature so confidence in the supplier become essential. How to establish that trust? If the consumer is asked to trust the label. Will she?

[80] Definition adopted by the International Network on Quality Infrastructure (INetQI): https://www.inetqi.net/documents/quality-infrastructure/

QI is about confidence. A strong QI, with all component parts engaging and knowing their own and others' roles, gives confidence to buyers in other countries – as well as consumers at home – that products are safe and of good quality. In this way, national QI policy enhances competitiveness; indeed, studies show that there is a correlation between QI and competitiveness: low competitiveness generally correlates with weak QI development, conversely good QI has an enabling effect; it empowers competitiveness[81]. Another way to put this is that international trade is fuelled by trust; it abhors uncertainty.

Mind the gap... Gaps in QI are a common challenge for many developing countries. If one of the pillars is weak, or absent, it undermines the system as a whole and international recognition suffers. This weakens competitiveness and creates barriers to trade and economic diversification. On the export side, gaps in QI can harm trade competitiveness as firms may face difficulties in demonstrating compliance with foreign regulations. Without international recognition it may be difficult for the importer to trust the safety and quality of products. On imports, inadequate QI may limit the range of tools at the disposal of regulators. For instance, Members with weak QI, and limited capacity for market surveillance, may have relatively fewer mechanisms at their disposal to give confidence that products conform with applicable technical regulations – making it more difficult to prevent non-conforming products from reaching the market.

... particularly in Africa. A stocktaking study of quality infrastructure conducted in 2020 in Africa showed that very few countries in Africa have a well-developed QI (around half, with very limited or hardly developed QI)[82]. These types of deficiencies can lead to sub-optimal outcomes. For example, when control and enforcement tools are limited, more trade restrictive measures may be taken to achieve legitimate policy objectives: faced with risks that you do not have the capacity assess, say, for lack of testing capacity, there may be a (rational) temptation to ban. But Africa is no exception. Many least developed countries (LDCs) and developing countries have challenges. It can be about the absence of, poor performance, or bad governance of QI institutions. Where resources are scarce, and the QI ecosystem has gaps, a key question is what challenge to tackle first.

The Big Picture. We started this section noting that complexity increases the need for a "whole-of-government" approach. With think that the Big Picture Figure illustrates one way of bringing together the regulatory (policy) and standards (technical) streams of work to efficiently and effectively serve the public good. But a push may be needed: an impetus to counteract a drift towards bureaucratic entropy. A key question here is how to create a spark that could help kindle an overarching policy of the type we describe, and then keep the flame alive. What we will consider below are 10 key questions that are intended, from perspective of the NSB, to discuss an approach aimed at identifying a few of the small steps that can promote the development of a national policy on QI.

[81] World Bank (2019), pp.25-26.

[82] Pan-African Quality Infrastructure (2020), p.29.

7.

What step comes first? (Phase 2)

10 questions for discussion. These ten questions are meant to spark debate on current situation of the NSB. They are based on the challenges and good practices described in this paper. They are subjective, there is no right or wrong answer. Each question is answered on a scale from 1 to 5. A response closer to 5 means that NSB is closer to an ideal structure and role as illustrated in the Big Picture Figure above.

But each country is different; there is no standard road map. NSB inherit institutional structures, mandates and constraints. There is no silver bullet. Instead, responses can illustrate where the NSB has room for improvement, and where to focus as a first step.

1. At the top (political level), how well are the benefits of standards understood?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = not at all understood; 5 = very well understood)

2. Is there clarity about the NSB's role, and is it recognized?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = not at all, 5 = a great deal)

3. Is there an appropriate mix of stakeholders involved in the development of standards, including private sector, regulators, and other groups?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   1 = no, not at all, 5 = yes, very much so)

4. How frequently does the NSB receive comments on draft standards?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = never, 5 = very frequently)

5. As the NSB, do you feel you are most like the driver (setting policy) or the GPS (supporting policy)?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = setting policy all the time, 5 = only supporting policy)

6. How often do regulators reference an international standard (or national adoption) in a technical regulation?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = never, 5 = very frequently)

7. How much coordination takes place between the NSB, regulators and other key stakeholders? Is there a "good spider" among you?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = no coordination and no spider, 5 = a great deal coordination and an effective spider)

8. To what extent is your country notifying measures that should be notified to the WTO?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = not at all, 5 = regularly)

9. To what extent do you agree with the statement that: a quality infrastructure is well established in my country?

   1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

   (1 = not at all, 5 = completely agree)

10. How much oversight does the government exercise over technical regulation development? Are technical regulations developed in a consistent way by different authorities in your country?

    1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯

    (1 = not at all, 5 = completely agree)

Based on the above exercise, what could the best first next step be?

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Commonwealth Standards Network (CSN) overview:

International standards provide a vital tool for reducing barriers to trade. They ensure that businesses in different countries speak a common language, enhancing trust in supply chains and giving consumers and businesses alike confidence that goods and services meet their expectations. They improve business productivity and efficiency, increase competitiveness, and offer opportunities for economies of scale.

A **National Standards Body (NSB)** is a country's main standards body representing a country's national economic and social interest with the aim of improving the quality and safety of products, services and systems by enabling the creation of standards and encouraging their use.

The **Commonwealth** is an association of 54 independent countries, comprising large and small, developed and developing, landlocked and island economies.

The **Commonwealth Standards Network (CSN)** is a collaborative network that supports trade, economic growth and prosperity throughout the Commonwealth by promoting increased awareness, development and use of international standards.

Commonwealth countries by region:

Africa
Botswana
Cameroon
Gambia, The
Ghana
Kenya
Kingdom of eSwatini
Lesotho
Malawi
Maldives
Mauritius
Mozambique
Namibia
Nigeria
Rwanda
Seychelles
Sierra Leone
South Africa
Uganda
United Republic of Tanzania
Zambia

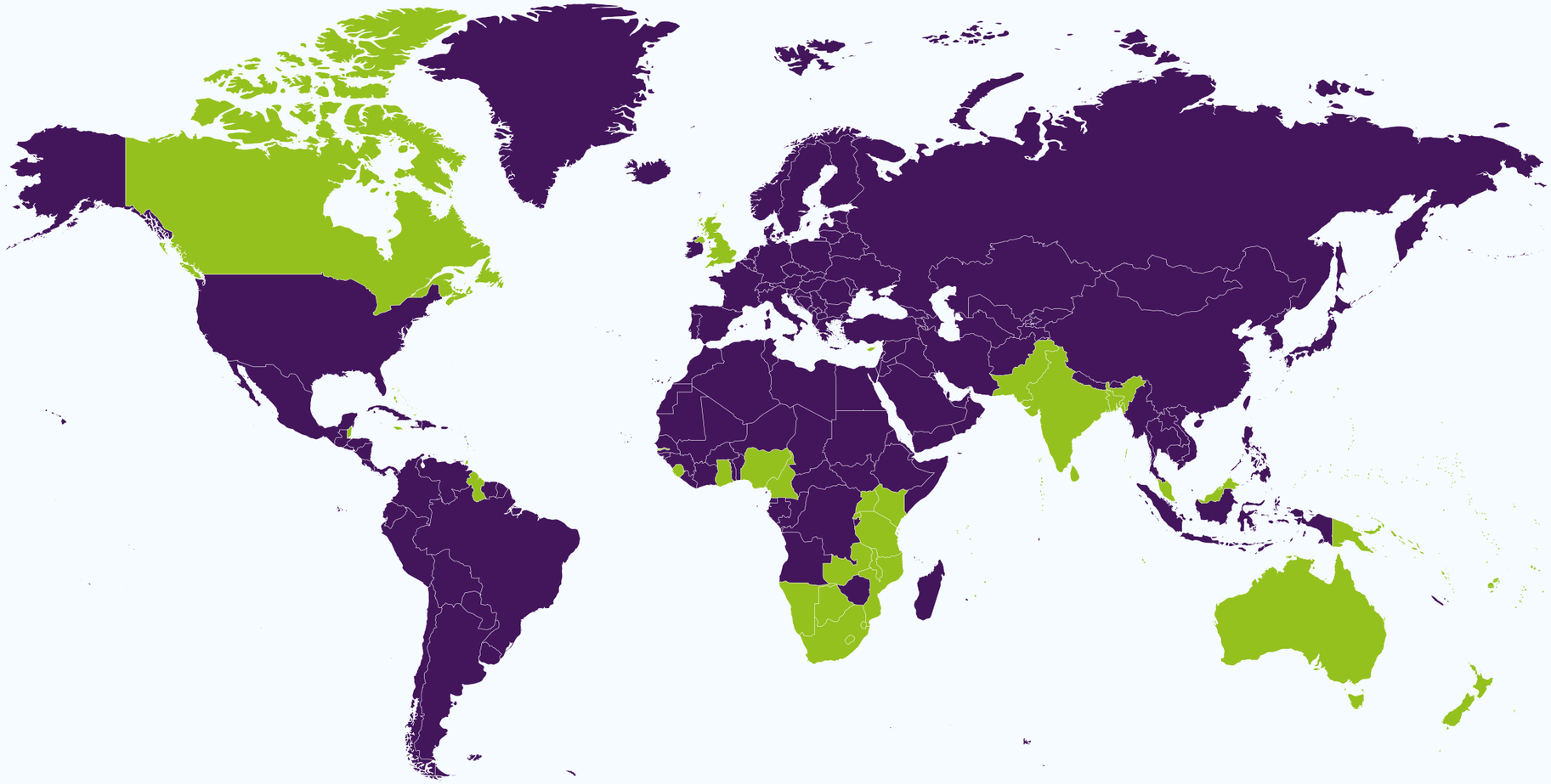
Asia
Bangladesh
Brunei Darussalam
India
Malaysia
Maldives
Pakistan
Singapore
Sri Lanka

Caribbean and Americas
Antigua and Barbuda
Bahamas, The
Barbados
Belize
Canada
Dominica
Grenada
Guyana
Jamaica
Saint Lucia
St Kitts and Nevis
St Vincent and The Grenadines
Trinidad and Tobago

Europe
Cyprus
Malta
United Kingdom

Pacific
Australia
Fiji
Kiribati
Nauru
New Zealand
Papua New Guinea
Samoa
Solomon Islands
Tonga
Tuvalu
Vanuatu

Map of Commonwealth countries by region



Join the CSN:

There are no fees to join the CSN which is a collaborative network open to Commonwealth states & NSBs, regional associations and other interested stakeholders. To find out more about the network and/or membership, please see **www.commonwealthstandards.net** or contact Ben Hedley, Senior Programme Manager, Commonwealth Standards Network

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