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# THE ROLE OF LOCAL CONTENT POLICIES IN MANUFACTURING AND MINING IN LOW- AND MIDDLE-INCOME COUNTRIES

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**The role of local content policies in manufacturing and  
mining in low- and middle-income countries**

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## **1. Introduction**

Local content policies are usually designed by policymakers to pursue targets such as industrial development, job creation, value addition, linkage creation and better value chain incorporation. Governments have been using local content requirements for quite some time, and despite the highly controversial debate in the literature about their success or failure, their popularity has increased since the economic crisis of 2008.

This working paper deals with the role of local content policies<sup>1</sup> in linkage creation and value addition of domestic manufacturing and mining industries and focuses on low- and middle-income countries. The relevant country experiences of Nigeria, Botswana, Mozambique, Brazil, India, China and Bangladesh in different industries (ranging from the oil and mining to the renewable energy, automotive and garment industry) presented in the literature are examined to illustrate the variety of implemented local content policies and their corresponding instruments. The working paper also sheds light on WTO regulations that LCR might violate, and suggests that although local content policy space has partly been eroded by the WTO, there are still enough possibilities for developing countries to use them. The paper further finds that when local content policies are well designed, focused, transparent, adapted to the national context and linked to other policies and useful long-term targets, they can play a crucial role in domestic industrial development and competitiveness.

The working paper is structured as follows: the first section presents an overview of industrial and local content policies in general as well as a discussion on local content policies in the literature, followed by a section on WTO regulations linked to local content policies and their current controversial debate in the literature. The third section explores relevant low- and middle-income country experiences with implementing local content policies in different industries. Finally, the paper concludes by outlining critical findings for local content policymaking.

## **2. Industrial policy and local content policies – An overview**

The rationale behind implementing industrial policy to target market failures goes back to the post-war thinking of the 1940s. Although industrial policy has been implemented for many decades, policymakers continue to face tremendous challenges in designing and implementing policy frameworks modified to their own country's resource endowments, economic and political systems, new products, processes and the changing international geography of

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<sup>1</sup> Local content policies (LCP) and local content requirements (LCR) are used equally and interchangeable.

production and consumption (UNIDO, 2015; Warwick, 2013). Additionally, they must guarantee transparency in the implementation process, measure, monitor and evaluate policy outcomes and promote strong coordination and collaboration among the different stakeholders in order for the industrial policies to be successful (UNIDO, 2015).

Within industrial policymaking itself, Weiss (2015) distinguishes between three development stages of industrialization (corresponding to the World Bank's income levels), and proposes the use of different industrial policy instruments for each stage of industrialization. He describes the different stages accordingly: in the early stage of industrial development, the industry level is mostly characterized by the transfer of low skilled workers out of agriculture into relatively labour-intensive activities that involve relatively simple technologies. The middle stage is depicted by more sophisticated production capabilities, a rise in real wages and a relative decline in labour-intensive and resource-based manufacturers. A shift to medium technology activities or labour-intensive segments of relatively high technology goods occurs in this stage. Finally, the last stage entails supporting the development of activities using frontier technologies and education- and science-based infrastructure to promote the creation of new technologies. Here, policies to support the restructuring of sunset activities (which economies are not competitive in in the long run using the existing technologies) and catch-up policies (for the breakthrough of markets dominated by a market leader) are particularly prominent (Weiss, 2015). Weiss suggests applying a variety of policy instruments (all of which can be used vertically and horizontally) in all three stages to implement industrial policy (see taxonomy in Table 1). For each stage in the taxonomy, he distinguishes five areas of intervention for industrial policymaking to address market failures: the product market, labour market, capital market, land market and technology. The policy instruments are classified into market-based interventions (impact on prices and taxes and thus operating through pricing links) and public inputs (provision of public goods as well as organizational change). Despite the variety of policy instruments available for each stage, Weiss emphasizes that no unique blueprint exists for successful industrial policymaking, and that learning from past mistakes, adapting measures as necessary, policy experimentation, not offering open-ended commitments as well as collaboration with the private sector are crucial (Weiss, 2015).

This brief review of the rationale and taxonomy of industrial policies was presented to better understand existing instruments in general. The taxonomy serves as a guideline for a possible categorization of local content policies/instruments. Local content policies can take various forms, and depending on the policymaker's objectives, mostly target the product, labour and capital market as well as the technology domain. Common instruments for the product, labour

and capital market range from import tariffs; export subsidies; duty drawbacks; tax credits; investment incentives; minimum requirements for local production, local employee training or local employment to public procurement; joint ventures; loan subsidies to the establishment of training institutes and development bank lending. The technology domain can be addressed by setting requirements coupled to technology and R&D transfer agreements and support programmes as well as the establishment of technology institutes. We will now take a more in-depth look at the nature of local content policies and the controversial debate in the literature.

Local content policies usually target (local) industrial and technological development, value creation or addition, wealth increase, employment creation and the development of backward, forward and sideways linkages along the value chain (Stone et al., 2015, Ernst and Young, 2014, Ramdoo, 2016, Ovadia, 2015). Ramdoo (2016) and Kuntze and Moerenhout (2013) define local content policies as follows: *“Although there is no agreed definition of local or content, this concept is generally understood to be a set of policy instruments put in place by national governments to ensure that a certain share of factors of production (such as labour, supplies, technology, knowledge) required at each stage of the value chain is sourced from the domestic economy”* (Ramdoo, 2016, p. v). Kuntze and Moerenhout also define them as policy measures, implemented at the state, sub-state or regional level, but assert that they require foreign or domestic investors to source a certain percentage of intermediate goods from local manufacturers or producers (Kuntze and Moerenhout, 2013).

**Table 1 Stages of industrial policy taxonomy**

Policy domain	Market-based instruments	Public goods/direct provision
<b>Early stage IP</b>		
<b>Product market</b>	Import tariffs, export subsidies, duty drawbacks, tax credits, investment/FDI incentives	Procurement policy, export market information/trade fairs, linkage programmes, FDI country marketing, one-stop shops, investment promotion agencies
<b>Labour market</b>	Wage tax credits/subsidies, training grants	Training institutes, skills councils
<b>Capital market</b>	Directed credit, interest rate subsidies	Loan guarantees, Development Bank lending
<b>Land market</b>	Subsidized rental	EPZs/SEZs, factory shells, infrastructure, legislative change, incubator programmes
<b>Technology</b>		Technology transfer support, technology extension programmes
<b>Middle stage IP</b>		
<b>Product market</b>	Import tariffs, duty drawbacks, tax credits, investment/FDI incentives	Procurement policy, export market information/trade fairs, linkage programmes, FDI country marketing, one-stop shops, investment promotion agencies
<b>Labour market</b>	Wage tax credits/subsidies, training grants	Training institutes, skills councils
<b>Capital market</b>	Interest rate subsidies, loan guarantees	Financial regulation, Development Bank (first/second tier) lending, venture capital
<b>Land market</b>	Subsidized rental	EPZs/SEZs, factory shells, infrastructure, legislative change, incubator programmes
<b>Technology</b>	R&D subsidies, grants	Public-private research consortia, public research institutes, technology transfer support, technology extension programme
<b>Late stage IP</b>		
<p>At the high income stage, all interventions in different markets applied at the earlier stages can still be used. The current IP model in high-income economies is based on the premise that for economies at or close to technology growth must be innovation-driven, as this provides the basis for long-term competitiveness. Slightly different variants exist in different countries, but the basic model is a combination of horizontal measures relating to the business environment, infrastructure provision, support for cluster development, training and improvements to financial intermediation, combined with specific measures to support innovation, including state funding for research as well as credit for higher risk innovative investments.</p>		

Source: Extracted from Weiss (2015)



As policymakers usually implement such policies to pursue economic and socio-political objectives and to enhance linkages with the domestic economy, the following six local content policy targets are the most common:

- ***Local employment and domestic labour market development and transfer of skills/know-how:*** Employment creation (for example, green jobs, etc.), training of national staff and transfer of skills and know-how (either, for example, by introducing minimum quantitative requirements for local hiring or local capacity building);
- ***Local value creation or addition, increased local linkages and domestic industry development:*** The priority lies in stimulating the development of domestic industrial development, supply chains, local sourcing and increased participation of local and locally owned companies (for example, through preferential treatment during bidding processes, indigenization policies where the owners, managers and employees are nationals of the respective country), joint ventures between foreign investors and domestic entities as well as state equity participation to scale up local capital participation and foster domestic firms to become internationally competitive;
- ***Economic diversification***
- ***Promotion of innovation, technology, research and development, enhancement of technology transfer and creation/increase of local technological capabilities:*** This can be achieved through requirements to spend a share of the foreign company's expenditure to finance R&D projects or innovation centres, for example, or by governments providing financial incentives to local firms to encourage investment and development in cutting edge technology;
- ***Ensure local ownership of "important industries":*** For instance, electric power and civil aviation;
- ***Revenue from minerals:*** Local content policies are also implemented with the objective of guaranteeing resource-rich countries a share of the benefits of its resources;
- ***Local community projects:*** Operating companies often work with local communities to compensate them for the problems caused by local industry (such as environmental harm, human rights abuses, among others) or to share a small proportion of benefits with them to prevent tensions with local civil society, vandalism, etc.

(Hufbauer et al., 2013; Ramdoo, 2016; Ernst and Young, 2014; Kaplinsky, 2011).

Local content policies can be classified in several ways, not only according to their objective but also to the benefits granted such as licensing, government procurement, financial incentives and informal requirements, among others (see Hestermeyer and Nielsen, 2015). Ramdoo (2016), on the other hand, distinguishes local content policies on the basis of three types of intervention: public sector intervention, private sector intervention and collaboration with local communities:

- Public interventions are usually implemented by the government using a carrot (incentive-based) or stick (regulatory and usually mandatory) approach. The regulatory approach is often tied to quantitative targets in terms of volume or value, or to qualitative requirements such as the obligation to report or justify the hiring of foreign labour or the sourcing of foreign inputs.
- In private sector interventions, on the other hand, the government only establishes the framework for LCRs, whereas the push for their implementation comes from industry itself. The motive behind such interventions lies either in supply chain development and/or in securing the social license to operate.
- Finally, working with local communities usually leads to securing a social license to operate and to leave a positive impact, particularly in the mining industry. Development projects aiming at increasing communities' wellbeing can significantly reduce the social risks of extractive projects and are therefore often supported (Ramdoo, 2016).

In the current debate and especially following the economic crisis of 2008, the implementation of local content policies experienced an upward trend, as political leaders sought to grapple with the consequences of the crisis by channelling business to domestic firms, creating more jobs and enhancing the benefits from resource endowments. Since the onset of the crisis, over 100 new local content requirements have been introduced, amongst others by Australia, Canada, the United States, Argentina, Brazil, China, India, Indonesia and Kazakhstan. Nevertheless, local content policies are not new. Historically, they have been associated more with government procurement, although they can assume numerous forms, including price preferences awarded to domestic firms that bid on government procurement contracts, mandatory minimum percentages required for domestic goods and services used in production, import licensing procedures designed to discourage foreign suppliers and discretionary guidelines that both encourage domestic firms yet discourage foreign firms (see Table 2) (Hufbauer et al., 2013; Hestermeyer and Nielsen, 2015; Cimino et al., 2014; Stephenson, 2013a). Despite the widespread use and variety of such policies, their net effects can hardly be measured in a straightforward way, and their impact depends on market conditions and industry structure

(assumptions of production distortions and welfare reduction in perfectly and imperfectly competitive markets as well as oligopolistic industries<sup>2</sup>) (Hufbauer et al., 2013).

Ramdoe (2016) further mentions three critical factors policymakers must consider before implementing local content policies: first, potential risks and opportunities need to be assessed in order to mitigate or minimize the potential costs associated with those policies. The overall economic and political costs of having no local content policies need to be weighed against the costs of implementing them (both for firms and society). Second, stakeholders need to have a profound understanding of the political economy and the habitat of their industrial sectors as well as stakeholders, political elites and local communities. Moreover, a certain level of institutional readiness and a country's capacity needs to be fulfilled and transparency guaranteed. Third, LCPs need to be targeted, realistic and specific enough to be successful. The types of intervention need to be adapted to a country's level of development, resource endowments and sector maturity (Ramdoe, 2016). Additionally, corruption, inconsistent law enforcement, counterfeiting, weak intellectual property rights and a shortage of R&D capabilities, skills and capacity of domestic entrepreneurs as well as underdeveloped industrial competence can play a major role in limiting the success of local content policies (Lockström et al., 2010; Biswajit et al., 2007; Hufbauer et al., 2014; Haley, 2012).

The question whether local content policies result in success or failure and should be recommended to policymakers in developing countries has triggered a highly controversial debate in the literature. Box 1 provides an overview of the main arguments for and against local content policies.

In his paper on local linkage creation, Kaplinsky (2001) confirms that government intervention for linkage maximization to the local manufacturing sector and the incorporation of local suppliers and users into the value chains can lead to two possible scenarios: the government could either intervene by deepening and accelerating these linkages, or decelerate these linkages and make them shallower, depending on the quality and focus of the policies implemented (Kaplinsky, 2011).

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<sup>2</sup> For more information, see Hufbauer et al. (2013).

## Box 1 Overview of pros and cons of local content policies in the literature

### *Arguments for local content policies:*

- **Economic benefits.** The “economic benefit” argument suggests that LCPs tend to foster a larger GDP and are less reliant on foreign trade and investment as a share of GDP. Furthermore, short-term objectives such as job creation are pursued by requiring firms to use a certain percentage of inputs from local industries, and/or long-term objectives such as sectoral growth in fast growing sectors with increasing demand. LCPs additionally lead to an increased tax base for governments due to a larger local manufacturing industry, generating more income in times of financial need.
- **Infant industry.** The infant industry argument suggests that local content policies allow infant industries to become internationally competitive through initial protection, subsidies and other forms of government support. The idea is that productive capabilities increase over time and domestic producers have access to larger markets through protection from superior competitors. Hence, domestic producers achieve economies of scale more rapidly, then reduce unit costs and as a result become more cost efficient and competitive. A larger market and more production experience result in faster productivity growth.
- **Market power.** The market power argument is similar to the infant industry argument but has its origin in the asymmetry of market power of foreign vs. domestic suppliers. Domestic companies need to achieve the same purchasing power as international suppliers and local content policies are thus designed to ensure that the domestic industry is not disadvantaged without creating advantages for the local industry.
- **Social impact.** The argument for local content policies lies in the form of compensation for the adverse socio-economic impacts of investments on local communities (oil, gas and mining) and vulnerable groups, as these communities often suffer a temporary or permanent loss of economic livelihoods.
- **Environmental benefits/green industry.** Local content policies can pursue environmental objectives in a context with limited financial resources and can create green jobs. Furthermore, LCRs can introduce new mature players to the global market, which will not only increase competition and innovation, but also lower green technology costs.
- **Technology transfer.** The rationale behind technology transfer lies in benefitting from both technology and knowledge transfer as businesses are compelled to transfer technology so the end-quality of their product (using local input) does not suffer. Learning by doing and capacity building in domestic supply are the results of technology transfer by LCRs.

#### ***Arguments against local content policies:***

- **Competitiveness.** The “competitiveness argument” suggests that LCRs reduce the international competitiveness of a country’s own economy and undermine domestic economic diversification by reducing input availability and output in non-LCR countries.
- **Allocation of resources.** Local content policies lead to a distortion of efficient allocation of resources, as they distort the principle of comparative advantage. The industries built up with local content policies cannot survive without government assistance (and often resist later withdrawal of such support).
- **Impact on trade.** The trade argument implies that local content policies distort trade, as they disadvantage imports and reduce competition between domestic manufacturers and foreign competitors.
- **Employment concerns.** LCRs might increase employment in one industry at the beginning, but can decrease the returns of other factors (for instance, higher input prices and hence less production) and might consequently lead to job further losses.
- **Impact of economic deficiencies on quality and innovation.** The rationale lies in local content policies being barriers to innovation as access to technologically-advanced inputs is inhibited.
- **Corruption.** LCRs can be subject to corruption and favouritism, particularly if their design is rather opaque.

*Sources:* Hufbauer et al., 2013; Kuntze and Moerenhout, 2013; Stephenson, 2013a; ECA, 2016; Warner, 2011; Cimino et al., 2014; Stone et al., 2015; Renewable Energy Week, 2013.

### **3. How to design local content policies within the WTO rules network**

The legal use of local content policies is quite limited for World Trade Organization members due to the binding regulations and agreements. In practice, however, there are some gaps, in particular for developing and least developed countries, since they can use an even wider range of policy instruments than industrialized countries.

The controversial debate on whether the WTO limits (or not) the local content policy space of developing countries is still ongoing in the literature. The discussion about the role of the WTO and the possibilities for developing countries seems to have experienced an upswing, especially following the revival of local content policies after the economic crisis (Aggarawal and Evenett, 2014; Hufbauer et al., 2013; ECA, 2016).

Chang (2003) re-examines the theory of “*ladder-kicking*”, arguing that many developing countries do not have the same possibilities and policy choices as developed countries had on their path towards development. Their policy choices today are not only more limited to “*free trade and laissez faire policies*”, but must also overcome a wider productivity gap to developed countries. Chang furthermore contends that “*the WTO rules and other multilateral trade agreements should be rewritten in such a way that a more active use of infant industry promotion tools (e.g. tariffs, subsidies) is allowed. Allowing the developing countries to adopt the policies (and institutions) that are more suitable to their stages of development and to other conditions they face will enable them to grow faster, as indeed they did during the 1960s and 1970s. This will benefit not only the developing countries but also the developed countries in the long run, as it will increase the trade and investment opportunities available to the developed countries in the developing countries. That the developed countries are not able to see this is the tragedy of our time.*” (Chang, 2003, p. 141) Wade (2003 in Aggarawal and 2014 in Evenett) also criticizes multilateral agreements such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) or Agreement on Trade-Related Investment Measures (TRIMs)<sup>3</sup> for forcing developing countries to treat firms equally, regardless of their origin and for additionally burdening them with excessive restrictions and technology transfer costs.

On the other hand, authors such as Aggarawal and Evenett (2014, p. 481) emphasize that the WTO’s capability to limit governments’ use of industrial policy is highly exaggerated: “*As we argue (...) assertions of the WTO’s strength do not reflect the incomplete and contested nature of its accords and the imperatives of policymaking in an era when many governments simultaneously intervene in national economies.*” Aggarawal and Evenett (2014) further cite Gallagher (2008), pointing out various policy options following the Uruguay Round, for instance, funding human capital and public infrastructure, offering tax concessions to foreign firms and providing marketing services to domestic firms. Moreover, governments can still require foreign firms to transfer technology, form joint ventures and perform R&D in the host country. Aggarawal and Evenett assert that critics of WTO agreements often generalize developing countries as one group, though they differ considerably (particularly in terms of tariff raises); government procurement<sup>4</sup> (if the country is not a member of the WTO’s Agreement of Government Procurement) as well as exchange rates are further WTO domains that have remained unaddressed. Furthermore, many “*WTO illegal*” industrial policy options used by governments have gone unchallenged according to Aggarawal and Evenett (2014).

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<sup>3</sup> For more information on the TRIPS and TRIMS, see WTO (n.d.a and n.d.e) and explanations later in this section.

<sup>4</sup> Will be explained in the section on government procurement.

Others, such as the Economic Commission for Africa (2016) and Ramdoo (2015), argue that developing countries have faced far more constraints in industrial policy choices since the establishment of the WTO than they did a few decades ago, but that there is still room for governments to take legal action in industrial policymaking (see Table 2). In addition to the limited enforcement of these rules, the flexible interpretation of rules means that local content policies are continuously being implemented (Johnson, 2013; Hestermeyer and Nielsen, 2015). Developing and least developed countries, in particular, are not bound to all measures. LDCs, for example, may still make use of export subsidies (ECA, 2016; Ramdoo, 2015). The WTO is particularly tolerant with regard to the use of tariffs and to a lesser extent subsidies, and it is often not as restrictive as regards bilateral or regional agreements with developed countries (ECA, 2016; Aggarawal and Evenett, 2014). When looking at WTO disputes by country, industrialized countries receive far more complaints than developing countries. The United States as a plaintiff ranks first with 111 cases, followed by the European Union with 97 cases and Canada in third position with 35 cases (WTO, 2016 n.d.c.).

**Table 2 List of permissible policy measures / not directly covered by multilateral WTO agreements**

Policy instrument	Permitted	Agreement
<b>Goods trade</b>		
- Tariff sequencing	*	GATT
- Tax drawbacks		
- Export taxes to restrict the export of certain products	+	
<b>Intellectual property</b>		
- Selective permission for patents	X	TRIPS
- Short patent timelines with exceptions	X	TRIPS
- Compulsory licenses		
<b>Subsidies</b>		
- Export	X	SCM
- R&D	*	SCM
- Distribution	*	SCM
- Environment	*	SCM
- Cost of capital		
- Skills development	+	
<b>Government procurement for countries that did not sign the WTO's Government Procurement Agreement</b>	+	
<b>FDI</b>		
- Local contents	X	GATT, TRIMS
- Trade balancing	X	TRIMS

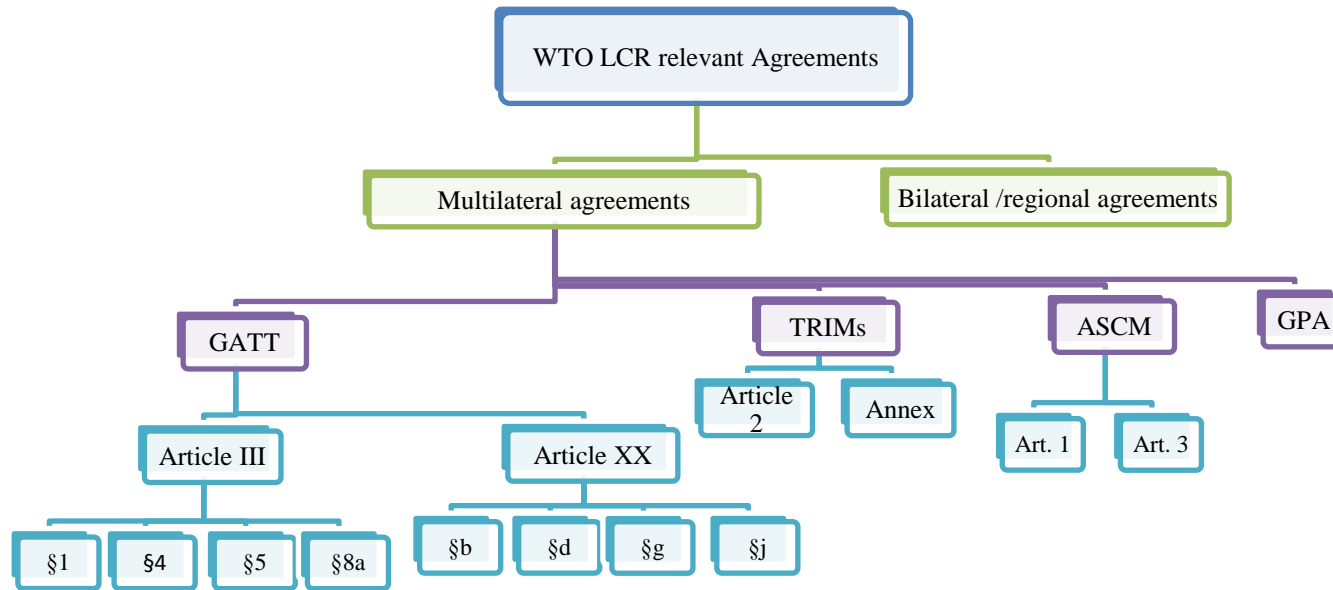
- Joint ventures	
- Technology transfer	
- R&D	
- Employment and local personnel	
- Tax concessions	
<b>Other</b>	
- Human capital	
- Administrative guidance	
- Movement of people	GATS
- Provision of infrastructure	
- Strategic government-mediated mergers of local firms in fragmented industries (e.g. through special loans from government-owned banks, equity injection by development banks or sovereign wealth funds) to achieve an economy of scale and reduce “wasteful competition” (i.e. duplicative investments will result in the scrapping of some capacities)	+
- Establishment of government-funded R&D centres to transfer technologies to private sector firms at lower but technically non-subsidized prices	+
- Encouragement of industry-university links through non-subsidy measures	+
- Use of SOEs to start and/or develop “infant industries” that the private sector is not willing to engage in	+

Source: Extracted from Gallagher (2008 in Aggarawal and Evenett, 2014, p. 490) and ECA (2016, p. 116)

Figure 1 presents multilateral WTO agreements that could be violated through local content policies. Specifically, the General Agreement on Tariffs and Trade (GATT), Article III, the Agreement on Trade-Related Investment Measures (TRIMs), the Agreement on Subsidies and Countervailing Measures (ASCM) and the Government Procurement Agreement (GPA) restrict local content policymaking. Bilateral or regional agreements can be even more restrictive, depending on their nature and partners. The multilateral agreement GATS is limited to services only. Neither GATS nor bilateral or regional agreements will be considered here, as this goes beyond the scope of this working paper. The third section of this working paper presents country experiences with local content policies. The experience of India and its solar power industry provide insight into a lost WTO case due to discriminating local content rules.



Figure 1 Relevant WTO agreements for local content policies



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Source: UNIDO elaboration.

**General Agreement on Tariffs and Trade (GATT).** Within the context of multilateral agreements, most local content policies are subject to GATT, Article III on the National Treatment on Internal Taxation and Regulation, the core principle of which is that imported products may not be discriminated against compared with their domestic counterparts. Local content measures in particular are restricted or challenged in paragraphs 1, 4, 5 and 8a in Article III (Hestermeyer and Nielsen, 2015; Cimino et al., 2014; Kuntze and Moerenhout, 2013; ECA, 2016). While the first paragraph of Article III refers to the fact that domestic laws, regulations and restrictions affecting the sale and use of products should not afford protection over domestic production, the fourth paragraph refers to the national treatment principle, requiring that imported products are treated equally to domestic products with respect to laws and regulations affecting their sale or use (Cimino et al., 2014). Paragraph 5 prohibits support schemes that *“require, directly or indirectly, that any specified amount or proportion of a product which is the subject of the regulation must be supplied from domestic sources”* (Kuntze and Moerenhout, 2013). Article III:4 and III:5 might only restrict support schemes with local content policies if paragraph 8a does not specifically exclude them. Paragraph 8a of Article III excludes government procurement from the national treatment obligation, with the exception of any procurement scheduled under the Government Procurement Agreement (GPA)<sup>5</sup> (Kuntze and Moerenhout, 2013 and Cimino et al., 2014). According to Kuntze and Moerenhout (2013), GATT Article XX could make some room for policymakers to implement local content policies if the defendant WTO member can prove (paragraph b) that its measure protects or aims to protect *“human, animal or plant life or health”* and if so, that it is necessary to achieve that objective, or (paragraph g) that the measure is linked to the *“conservation of exhaustible natural resources”*. Furthermore, the measure must be *“made effective in conjunction with restrictions on domestic production or consumption”*. India, for example, used paragraph d and j of Article XX to (unsuccessfully) defend its local content policies. Paragraph d of GATT Article XX relates to measures that are *“necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this agreement”*. Paragraph j relates to measures that are *“essential to the acquisition or distribution of products in general or local short supply”* (WTO n.d.f.). Nevertheless, Kuntze and Moerenhout argue that if certain support schemes with local content requirements meet the criteria set out in Article XX, they are likely to be deemed unjustifiable due to *“arbitrary or unjustifiable discrimination”* (Kuntze and Moerenhout, 2013).

**Agreement on Trade-Related Investment Measures (TRIMs).** TRIMs apply to all investments in goods production (not to services) and include regulatory measures for FDI, local content

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<sup>5</sup> Government procurement will be discussed at the end of this section.

requirements and foreign exchange/trade balancing measures. Article 2 and the “*Illustrative list*”<sup>6</sup> within the annex of the TRIMs agreement are particularly relevant for local content policies. Article 2 states that no WTO member shall apply a measure that is prohibited in the provisions of GATT Article III (national treatment) or Article XI (quantitative restrictions). For instance, WTO members may not apply any discriminatory measure against foreign products or introduce quantitative restrictions (ECA, 2016; WTO n.d.a and n.d.b; Cimino et al., 2014; Hestermeyer and Nielsen, 2015). Other regulatory investment measures such as conditions for maintaining joint ventures with local firms, transfer of technology and limitations of foreign equity ownership are not limited according to ECA (2016).

**Agreement on Subsidies and Countervailing Measures (ASCM).** The ASCM covers multilateral areas that regulate the provision of subsidies, on the one hand, and the use of countervailing measures to offset injury caused by subsidized imports, on the other (WTO n.d.c). According to ECA (2016), “*a subsidy practice must fall within the meaning of ASCM Article 1, which defines a subsidy as existing if there is a financial contribution or price support given by a government that confers a benefit to domestic firms. ASCM Article 3 also explicitly prohibits subsidies of two types: subsidies that are contingent on export performance (i.e., export subsidies) and subsidies that are contingent on the use of domestic goods over imports (i.e., LCRs and other import substitution subsidies)*” (ECA, 2016). In other words, any WTO member suffering “*adverse effects*”<sup>7</sup> from the subsidy practices of another WTO member can bring a case before the WTO panel (Hufbauer et al., 2013).

**Agreement on Government Procurement (GPA).** “*Government procurement is the purchase by governments and other government organisations of goods, services and works such as infrastructure projects (OECD, 2013e). It is a subset of total public expenditure which is the total actual spending of the government, including all expenditure of central and local government agencies (Lequiller and Blades, 2006)*” (Stone et al., 2015). Government procurement is excluded from the scope of the national treatment obligation in GATT Article III: 8a<sup>8</sup>, but is regulated by the WTO in the plurilateral Agreement on Government Procurement (GPA) (Stone et al., 2015). According to Hestermeyer and Nielsen, Article III: 8a imposes three conditions on policymakers for government procurement: first, the challenged measure must be characterized as “*laws, regulations or requirements governing the procurement of the products*

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<sup>6</sup> For more information, see WTO (n.d.b.).

<sup>7</sup> There are three types of adverse effects: first, injury to a domestic industry caused by subsidized imports in the territory of the complaining WTO member. Second, serious prejudice (e.g. export displacement), and third, nullification or impairment of benefits accruing under the GATT 1994 (WTO n.d.c).

<sup>8</sup> GATT Article III: 8a: “*The provisions of this Article shall not apply to laws, regulations or requirements governing the procurement by governmental agencies of products purchased for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale*” (WTO n.d.f).

*purchased*”, second, it must involve “*procurement by governmental agencies*” and third, the procurement needs to be undertaken “*for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale*” (Hestermeyer and Nielsen, 2015). Those WTO members that have signed the Agreement on Government Procurement must open their government procurement markets to the other parties. “*The text of the Agreement establishes rules requiring that open, fair and transparent conditions of competition be ensured in government procurement. However, these rules do not automatically apply to all procurement activities of each party. Rather, the coverage schedules play a critical role in determining whether a procurement activity is covered by the Agreement or not. Only those procurement activities that are carried out by covered entities purchasing listed goods, services or construction services of a value exceeding specified threshold values are covered by the Agreement.*” (WTO, n.d.d). The agreement is a binding international treaty for those WTO members that have signed it and was established in the 1979 Tokyo Round Code on Governmental Procurement. The last revised version entered into force in April 2014. At present, the Agreement only has 19 parties comprising 47 WTO members, with another 28 WTO members participating in the GPA Committee as observers (out of these, 8 WTO members are in the process of acceding to the Agreement) (WTO, n.d.d).

Now that we have reviewed different WTO multilateral agreements that constrain local content policies, the question arises what leaks or legal gaps for implementing local content requirements remain in practice. Hufbauer et al. (2013) point out four of them:

1. *GATT Article III National Treatment on Internal Taxation and Regulation*. Government procurement by federal and sub-federal agencies is subject to Article III and other GATT provisions only to the extent included in the WTO GPA.
2. *Agreement on Subsidies and Countervailing Measures*. The ASCM’s definition of subsidies might not include all practices that economists could regard as subsidies. Furthermore, the country complaining that it is suffering “adverse effects” must provide evidence of such “adverse effects” on its own commercial interests (see also ECA, 2016).
3. *Agreement on Trade-Related Investment Measures*. Although the TRIMs text uses strong language against the use of local content policies with authorizing or incentivizing investments, only very few complaints have been submitted involving countries that have used investment incentives with LCRs. Furthermore, the agreement only applies to goods and not to services. According to Cimino et al. (2014), LCRs relating to technology

transfers, intellectual property licensing and localization of data centres are becoming a common evasion strategy within the TRIMs agreement.

4. *Agreement on Government Procurement*. Article III: §1 on national treatment excludes government procurement, as does the General Agreement on Trade in Services (GATS). Only the GPA agreement specifically prohibits government procurement, though only 47 countries out of 159 WTO members have signed it. Furthermore, GPA is characterized by numerous exceptions for government procurement (Hufbauer et al., 2013; WTO, n.d.d).

Rules on local content policy cases have not been vigorously enforced due to diplomatic relations, the high costs as well as long waiting times for dispute settlement. Additionally, many countries have implemented similar policy practices at home and consequently avoid highlighting foreign abuses. Only WTO member governments can bring cases before the court, not private firms suffering business losses due to LCRs. In other words, private businesses need to first convince their governments to bring their case before the court. WTO cases can take two or more years to be resolved and no (retroactive) compensation is provided to the firm concerned. Non-WTO members are exempt from WTO commitments and can implement various forms of local content policies (Cimino et al., 2014; Hufbauer et al., 2013; ECA, 2016).

#### **4. Relevant country experiences using local content policies**

Different experiences of low- and middle-income countries using local content policies are discussed in this section. With the aim of enhancing value added, job creation, economic diversification and linkages to domestic industry, the countries' policymakers use a wide variety of policy instruments. These tools can vary not only with regard to their policy objective, but also depend on the implementing capacity, context and development stage of the respective country. The case studies illustrate policymakers' possibilities to implement local content policies and the countries' experiences with these policies. The following countries and industries were examined<sup>9</sup>: Nigeria as a lower-middle income country in the oil industry; Botswana as an upper-middle income country in the diamond industry; Mozambique as a low-income country in the aluminium industry, India as a lower-middle income country and Brazil as a higher-middle income country in the renewable energy industry, followed by China as a higher-middle income country in the automobile industry and Bangladesh as a lower-middle income country in the garment industry.

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<sup>9</sup> Income groups are based on the World Bank's classification of 7 November 2016.

First, Nigeria's experience with local content policies in the oil industry is examined, showing a successful path of this country despite challenging preconditions in terms of existing industrial capacity and development level.

#### **4.1 Nigeria's story of local content interventions in the oil industry**

Nigeria's oil and gas industry was established in the 1930s, when Royal/Dutch Shell launched its explorations in Nigeria's onshore areas. In 1971, Nigeria created its national oil company, Nigerian National Oil Corporation (NNOC) (which became the Nigerian National Petroleum Corporation – NNPC in 1977) and joined OPEC. Only one year later, Nigeria's onshore and shallow waters oil production already reached 2 million barrels per day. With the oil price shock of 1973, OPEC gained more influence and Nigeria introduced its programmes of nationalization and indigenization, leading to government ownership of Shell Nigeria and of 60 per cent of the other international oil companies operating in Nigeria. The government also acquired equities in subsidiaries of multinational oil service companies.

The total revenues from oil exports increased from US\$ 718 million to US\$ 94.6 billion by 2012 and recent figures indicate that the oil industry accounted for approximately 74,4 per cent of Nigeria's exports in the first quarter of 2015 (i.e. for more than one-third of the country's GDP). However, Nigeria's oil and gas supply industry received only a very small share of the benefits from this industry (Adedeji et al., 2016; Klueh et al., 2007; Ovadia, 2016).

To gain a larger share of the benefits, Nigeria's government introduced the Nigerian Oil and Gas Industry Content Development Act (CDA) in 2010 (Ramdoo, 2016). The CDA provides a comprehensive legal framework for local content and covers "*all regulatory authorities, operators, contractors, subcontractors, alliance partners and other entities involved in any project, operation, activity or transaction in the Nigerian oil and gas industry*" (Hufbauer et al., 2013). Furthermore, the CDA includes targets for Nigeria's participation in 280 different categories of oil services to foster local linkages<sup>10</sup> and local job creation (Ovadia, 2016). The local content development targets were set progressively starting at 45 per cent of local content in 2007, reaching 70 per cent in 2010 and exceeding 80 per cent by 2020 (Adedeji et al., 2016). Hufbauer et al. (2013) highlight three main policies in the Nigerian Oil and Gas Content Development Act:

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<sup>10</sup> Local linkages include both backward and forward linkages. Backward linkages involve the supply of input materials to the commodity sector that links it to other sectors in the local economy. Forward linkages include activities that involve processing of the sector's output prior to export, for instance in the oil and gas industry, the establishment of refineries, the petrochemical industry and the production of fertilizers (Tordo et al., 2013 in Adedeji et al., 2016).

- First, policies that promote “initial considerations” of Nigerian content; This generally applies to:
  - The hiring of employees: all junior and intermediate posts must be held by Nigerians and any post held by a non-Nigerian can be occupied for a maximum of four years, thereafter, the post must be occupied by a Nigerian. A maximum of 5 per cent of management posts may be filled by foreigners;
  - Procurement of goods and services: require a specific level of local content, for some goods and services, the range lies between 80 per cent and 100 per cent. All operators should only carry out fabrication and welding activities within the country;
  - Contract bidding: preference shall be given to indigenous Nigerian companies, if the lowest bid does not exceed more than 10 per cent; and
  - Selection procedure: for all contracts exceeding US\$ 1,000,000, the operator must provide the NCDM-Board with the advertisements, prequalification criteria, technical bid documents, technical evaluation criteria and the proposed bidders list for approval;
- Second, policies that outline the reporting requirements for companies:
  - A variety of companies must be local, for example, those offering financial services;
  - Companies must submit specific plans about how they intend to accomplish certain levels of local content: employment and training activities (operators need to submit a detailed Employment and Training Plan as part of their Nigerian Content Plan), technology transfer (operator must submit a R&D plan to the board every 6 months, which contains an outline of R&D activities to be conducted in Nigeria and the expected expenditures) and financial services, among others;
  - Joint ventures between foreign operators and Nigerian companies need to be encouraged.
- Third, policies that create a regulatory body to monitor these provisions: The Nigerian Content Development and Monitoring Board (NCDMB) shall:

- Facilitate the implementation of the Nigerian content, establish a Nigerian content consultative forum, a joint qualification system and a Nigerian content development fund;
- Have authority to implement provisions as well as to appraise, evaluate and approve all plans of foreign companies;
- Host content promotion efforts such as conferences, studies, workshops, seminars and training;
- Companies must submit annual local content reports, namely “Nigerian Content Performance Reports” (on their performance in terms of Nigerian content<sup>11</sup>), quarterly lists of all contracts, subcontracts and purchase orders awarded in the previous report quarter, which exceed US\$ 1,000,000 in procurement, quarterly R&D reports; and
- In case of non-compliance with the local content commitments by companies, the board can introduce sanctions and penalties (5 per cent of the project sum).

*Source:* (Hufbauer et al., 2013; Ramdoo, 2016; Columbia Center on Sustainable Investment, 2014).

Table 3 below provides a brief summary of the local content interventions of Nigeria’s government in the oil and gas industry over time.

**Table 3 Nigeria’s local content policies over time**

Timeline	(Local content) government policies
<b>1930</b>	Royal/Dutch Shell starts exploration in Niger Delta region
<b>1971</b>	Nigeria creates Nigerian National Oil Corp. and becomes a member of OPEC
<b>1995</b>	Shell discovers massive offshore Bonga field, resulting in a shift from onshore to offshore operations in Nigeria
<b>1997</b>	Establishment of One Oil and Gas Free Zone (job creation and expertise development)
<b>1999</b>	Establishment of the Local Business Development/Global Procurement Unit to pursue the following activities: <ul style="list-style-type: none"> <li>- Actual award of contracts to Nigerian firms</li> <li>- Farming out of oil fields to local Nigerian oil companies</li> <li>- Facilitating technology transfer, and</li> <li>- Holding Local Content Development fairs.</li> </ul>
<b>2010</b>	Introduction of the Nigerian Oil and Gas Content Development Act

*Source:* Klueh et al. (2007), Ramdoo (2016)

<sup>11</sup> The report shall specify expenditure on the Nigerian content by category on both a current and a cumulative cost basis, and shall set out: job creation objectives in terms of hours or days worked by Nigerian and foreign workers and their status; procurement objectives in terms of quantity, tonnage of locally manufactured minerals and materials of foreign origin (Columbia Center on Sustainable Investment, 2014).



Onshore oil fields represent an easier entry point for Nigeria's domestic industry, as these fields are less capital intensive and require less management expertise in comparison to offshore, deep-water wells. Offshore deep-water wells, on the other hand, require more sophisticated technical expertise, are more capital- and technology intensive and are more in the outreach of vandals – they are usually dominated by multinational firms and international supply chains. Furthermore, the upstream oil industry is characterized by high fixed costs in terms of production and R&D expenditure and requires economies of scale. In addition, the supply industry requires higher grades of specialization (Nordas Vatne and Heum, and Hufbauer et al., 2013). The expertise and skills of the Nigerian workforce may pose a major hurdle for foreign companies to fulfil Nigeria's local content policies targeting the labour market, as Nigeria's literacy rate lies at 65 per cent, with less than half of the population having a primary education and even less a completed secondary education (Hufbauer et al., 2013).

Despite the hurdles and challenges Nigeria has to overcome, the country has a positive outlook and a noted success in the oil industry.<sup>12</sup> NCDMB contends that the local content amounted to 90 per cent in engineering design, 60 per cent in the manufacture of valves and fabrication of subsea systems and 45 per cent in the manufacture of high voltage cables – although progress in Nigeria is difficult to measure due to the difficulties of measuring local content (Ovadia, 2016).

The following two case studies explore how two African countries used local content policies in the mining industry to pursue their economic targets of economic diversification and linkage creation: Botswana and its diamond industry and Mozambique and its aluminium smelting industry.

#### **4.2 Diamonds are paving the way for Botswana to become a middle-income country**

Botswana successfully moved from being a low- to a middle-income country following independence, thanks to its prospering diamond industry. For nearly 35 years, diamonds were the main contributor to Botswana's GDP and government revenues. Diamonds contributed 81 per cent to mining value added between 2004 and 2014, followed by copper-nicol with 16 per cent, soda-ash with 2 per cent and gold with only 1 per cent (ADB, 2016).

Prior to the diamonds boom in the 1970s, Botswana's income depended considerably on international aid sources and beef exports. From the 70s onwards, the diamond industry developed successfully and received major policy support from the government in terms of

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<sup>12</sup> Several studies exist that assess the case of Nigerian local content in the oil industry, for instance, Abedeji et al. (2016); Ovadia (2016); Ramdoo (2016) and the Colombia Center on Sustainable Investment (2014), among others.

property rights, rule of law, joint ventures and several local content measures, among others. Furthermore, the government began accumulating savings from mineral revenues. Today, around 30 per cent of government revenue is derived from central bank profits and other income from accumulated assets (World Bank, 2011). In 1999, the government implemented the Mines and Minerals Act, granting permits for industrial mineral exploitation to citizens of Botswana only, unless an exception is granted by the government. Furthermore, the Act includes soft local content policies, for instance, requirements to the holders of mineral concessions for maximum possible employment and training of Botswanans as well as the requirement to give preferential treatment to locally produced materials and goods. The Competition Act was issued in 2009, providing competition incentives for enterprises to train and employ Botswanans and use local goods (CCSI, 2016).

Apart from mining, the Government of Botswana was also very interested in fostering the down-streaming of the diamond industry to add value to its diamonds, create employment (cutting and polishing is more labour-intensive than diamond mining), create linkages to the rest of the economy and to sustain the diamond business even once the minerals have been depleted. The table below shows the value addition gains for the country by down streaming in the value chain.

**Table 4 Value addition in the diamond pipeline**

Stage of global value chain	% of original value
Producer selling value	100
Sorting and valuing	115
Cutting and polishing	127
Polished dealing	133
Jewellery manufacturing	166
Retail	320

*Source:* Even-Zohar (2007 in Mbayi 2011)

In 2005, the government signed an agreement with DeBeers company (the country's largest diamond producing company) to develop the diamond cutting and polishing industry and entered a joint venture named Debswana (50 per cent owned by the government and 50 per cent by DeBeers). Additionally, the government established a diamond hub, a diamond technology park<sup>13</sup> and a diamond office to implement the government's plan to turn the country into a diamond centre by building strategic alliances, implementing beneficiation policies, developing

<sup>13</sup> For more information, see <http://www.diamondtechnologypark.com/development.php>.

infrastructure, enabling a favourable fiscal regime and strengthening the down streaming process (Mbayi, 2011). Targets of local processing were determined, amounting to a minimum of 15 per cent of Botswana's rough diamond production, together with requirements to hire local employees to train employees in the cutting and polishing factories (for instance, 97 per cent of employees hired by Debswana were local hires). These factories bring foreign skilled labour to Botswana using fast permit application procedures through the diamond hub to train and enhance the skills of local employees. A "localization" effort policy, where foreign firms are granted work permits for expatriates with a limited contingent exist as well (KPMG, 2012; Mbayi, 2011).

To further accelerate the local down-streaming process in the value chains, companies have to only pay taxes on rough diamond exports, but not on polished ones. Foreign investors are further encouraged to enter joint ventures with citizens or citizen-owned companies and to purchase from local sources (KPMG, 2012). The companies do not need to pay import duties on their technology imports (Mbayi, 2011; Stephen, 2016).

The Government of Botswana is also active in local procurement. In February 2015, the Ministry of Trade and Industry announced that *"the public is informed that Government has directed all Central Government, Local Authorities and Parastatal Organisations to procure all their goods and services from locally based manufacturers and services providers as well as agricultural producers. Procuring Entities are required to purchase all their products from local manufacturers and service providers as well as agricultural producers. This is a critical measure through which Government wishes to ensure that its purchasing power is used to stimulate economic growth and create the much needed employment through consumption of locally manufactured products and services."* (MTI, 2015).

The aim of Botswana's public procurement policy is to promote the production and consumption of locally manufactured goods and services by awarding preference margins during tendering and to diversify the economy, supported by the Economic Diversification Drive (EDD) Initiative of 2011. Up to 30 per cent of the government's annual budget is exclusively reserved for purchases from local firms. EDD was implemented with the specific objective of diversifying the economy and its exports away from diamonds towards other industries, and considers local content to be an engine for long-term and sustainable growth (CCSI, 2016). Apart from maximization of local content in goods and services, the EDD initiative also promotes technology transfer and innovation, the development of a robust SMME sector and the attraction of foreign direct investment (CCSI, 2016; MTI, 2015; WTO, 2015; Stephen, 2016).

According to the WTO (2015), not only public procurement but state-owned or state-invested companies as well play a major role in the diamond industry. Debswana's diamond mining with 50 per cent state participation, for instance, holds a dominant market position with a production of 90 per cent of Botswana's diamonds and 70 per cent of the country's exports as well as 50 per cent of government revenues. The company's main activities are diamond and coal mining. Other examples include the Okavango Diamond Company, a 100 per cent state-owned diamond mining company and Diamond Trading Centre Botswana with 50 per cent state participation, specialized in diamond sorting, valuation, cutting and polishing (WTO, 2015).

As this case study shows, many policies in Botswana aim not only to enhance value addition and employment creation locally by fostering the diamond down-streaming industry, but also pursue the long-term target of diversifying the economy away from the country's reliance on diamonds as their depletion is foreseen within the next 20 years (WTO, 2015; OECD, 2013c).

#### **4.2 Mozal and its economic linkages – Local content policies in Mozambique**

Mozal, Mozambique's aluminium smelting industry, which transforms alumina into aluminium ingots, is a showcase for foreign direct investment acting as a channel to enhance local industrial linkages and technology spillovers. FDI was successfully attracted to the country through a combination of fiscal and financial incentives, cheap energy (aluminium smelting is very energy intensive) and other factors such as market security for aluminium. Mozal has granted tax exemptions for 50 years, including on the payment of duties on imports and value added as well as limitations of corporate taxes to 1 per cent of sales, leading to modest government revenues from this project (Ramdoo, 2015; DIE, 2011).

Mozal's aluminium smelting has three investors: BHB Billtion (now South32, see South32 (n.d.)) with around 47 per cent of shareholding, Mitsubishi Corporation and the Industrial Development Corporation South Africa with 25 per cent each and the Government of Mozambique holding only a minority of 4 per cent. The Mozal project began its operations in 1999, and the construction phase of the smelting industry was carried out in two phases: the initial investment phase from 1998 to 2000 (the core smelter) and the second expansion phase in 2001. The entire investment amounted to around US\$ 2.4 billion and Mozal contributes 42 per cent of Mozambique's export revenues as well as important linkages to the domestic economy and SME landscape through various initiatives, joint ventures and government policies (DIE, 2011).

The local content promotion in the case of Mozal is not characterized by strict clauses as in some other cases, but focuses in particular on Mozambique's underdeveloped private sector.

The private sector is only represented by a few large enterprises (partly owned by foreign capital and partly by the state or members/affiliates of the Frelimo top elite), a few formally registered SMEs owned by foreign and domestic capital with little clustering effect and a large number of informal domestic micro-enterprises (Hansen et al., 2014). The local SME sector is generally characterized by a low level of intra- and inter-firm linkages, a low level of technological development of businesses, low quality management, lacking human capital in terms of a trained workforce and of managerial leadership to meet increasing demands, know-how and access to finance (DIE, 2011; Buur, 2014; Warren-Rodriguez, 2008).

To foster the linkages of Mozal to the domestic SME landscape and enhance local value added, the following programmes were established over time:

- The SME Empowerment and Linkages Programme (SMEELP) was launched in 2001 (replaced by Mozlink I in 2003 and by Mozlink II in 2006)
  - The programme had three main targets: first, generate business opportunities for local SMEs, second, provide training to them, and third, promote the upgrading and development of technical capabilities of SMEs through mentoring and coaching programmes (Warren-Rodriguez, 2008). Mozal also fostered triangular arrangements with local banks and the contracted SMEs.
- Mozlink I was implemented from 2003 to 2007 with the aim of expanding linkages between Mozal and local SMEs in the smelting industry's operational phase. Additional activities such as the promotion of additional business development and financial services were undertaken, among others.
- Mozlink II was created to promote the same targets as SMEELP and Mozlink I, and to create market opportunities for local SMEs (Adam Smith International, 2015).

In 2013, an agreement was signed between Mozal and Midal, a global manufacturer of aluminium cables, which represents Mozal's participation and contribution to the local downstream industry by supplying aluminium ingots (South32, n.d.). Furthermore, on its website, South32 states that Mozal has contributed to Mozambique's local communities in the Boane district by establishing the Mozal Community Development Trust in 2000 with an investment of over US\$ 34 million and the development of more than 200 projects by the Trust in micro-business development, education, training, health and environment, sports and culture and community infrastructure (South 32, n.d.).

In total, Mozal seems to have had a mixed outcome and a more in-depth analysis is needed<sup>14</sup>.

The following two case studies examine local content requirements in the renewable energy industry. Due to the increasing effects of climate change and greenhouse gases, alternative technologies are being increasingly deployed to mitigate environmental impacts. Local content policies have been a common instrument to foster and support alternative technologies, particularly in the renewable energy industry. The OECD (2015) presents various arguments for and against the use of local content policies in the wind and solar energy industry. For instance, benefits of LCRs in this industry can be learning spillovers, the fostering of nascent industries, local green job creation, improved public acceptance of policy support for renewable energy, greater deployment of solar and wind energy to mitigate climate change, among others. On the other hand, reasons such as increased wholesale electricity prices in the short term to offset increased costs, higher overall costs for downstream power producers in the short run (in the case of LCRs, forcing firms to purchase more expensive or less efficient solar panel or wind turbine equipment to benefit from public support), limited capacity to create additional local green jobs, among others, represent arguments against the implementation of local content policies (OECD, 2015). The following two examples discuss the LCR experiences of India in the solar power industry and Brazil's in the wind energy industry. India's case is well-known, because it lost its WTO case due to non-compliance with WTO regulations.

### **4.3 India's WTO case on solar cells and modules**

The promotion of solar energy in India has a long history. Shortly after the oil crisis in the 1970s, the Government of India began actively engaging in the renewable energy sector. These efforts were primarily driven by the fact that India faced huge challenges across the country to cover the economy's energy needs and to address the power supply deficits. Various electricity policies were implemented and institutions established, leading to a decline of a demand-supply mismatch from 9.3 per cent to -2.1 per cent in the period 2012/13 to 2015/6, with expectations for a further decrease according to PWC (2016). The solar energy promotion policies in particular were accompanied by local content requirements, bringing the lower-middle income country into trouble with the WTO court due to policy inconsistency with WTO regulations.

The Government of India's initial attempts to strengthen solar energy supply date back to the time immediately following the oil shocks in the 1970s and were a response to the increased oil price and supply uncertainties. The Government of India created the Commission for Additional Sources of Energy within the Department of Science and Technology in 1982 (in 1992, the

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<sup>14</sup> DIE (2011), Adam Smith International (2015), Ramdoo (2015) and Buur (2014), for instance, already highlighted some interesting findings on the Mozal case.

Commission became the Ministry for Non-Conventional Energy Sources and was renamed again in 2006 into the Ministry of New and Renewable Energy) (Ministry of New and Renewable Energy, n.d.). The Ministry's main tasks are the development of national renewable energy laws, the establishment of technical standards for renewable energy, conducting resource assessments, supporting research and development in renewable energy technologies and the management of data on renewable energy use. Fiscal incentives for the promotion of renewable energy, on the other hand, are developed in collaboration with the Ministry of Power and the Ministry of Finance. Additionally, the Central Electricity Regulatory Commission (CERC) was created under the Electricity Regulatory Commissions Act in 1998 to set up guidelines for feed-in-tariffs for different renewable energy technologies and regulate regional electricity cooperation and large-scale third-party sales (Johnson, 2013; CERC, n.d.). More policies followed in the upcoming years, for instance, the Electricity Act in 2003 for the promotion, cogeneration and generation of electricity from renewable energy sources, the National Electricity Policy in 2005 as well as the National Tariff Policy in 2006, including requirements for licensed utilities and captive electricity producers to buy certain amounts of renewable energy under a renewables portfolio obligation scheme (Johnson, 2013). In 2006, the National Rural Electrification Policy was introduced to offer a wide range of incentives for renewable energy projects, followed by the implementation of a generation-based incentive scheme for solar photovoltaic in 2008 (Johnson, 2013). Subsidies in general account for the largest driver of India's solar industry growth (Hufbauer et al., 2013), and in 2010, India launched the Jawaharlal Nehru National Solar Mission (JNNSM). The JNNSM aims to reduce the costs of solar power generation in the country through long-term policies, large-scale deployment goals, aggressive R&D and domestic production of critical raw materials, components and products (Ministry of New and Renewable Energy, n.d.).

Moreover, the JNNSM pursues the ambitious target of deploying 20,000 MW of solar grid capacity by 2022 in three phases:

- First phase 2010-2013: 1,000 MW by the end of 2013
- Second phase 2013-17: additional 3,000 MW by the end of 2017, and
- Third phase 2017-22: additional 16,000 MW by the end of 2022

(Stephenson, 2013a; Hufbauer et al., 2013).

The initial phases of the JNNSM's local content requirements for solar power developers, asserting that they were obliged to use certain types of solar cells and modules manufactured in

India for power generation projects (ICTSD, 2016; Johnson, 2013). Furthermore, the JNNSM requires 30 per cent of a project's total value in solar thermal projects is sourced locally (Kuntze and Moerenhout, 2013).

These local content requirements during the initial phase for solar cells and solar modules of JNNSM resulted in the first complaints before the WTO by the United States three years after implementation:

- In February 2013, the United States complained that the local content requirements under the JNNSM on the use of locally produced solar cells and modules discriminated against imported solar cells and modules. The United States found them to be inconsistent with GATT Art. III:4 and TRIMS Art. 2.1 as well as SCM Agreement Art. 3.1b, 3.2, 5c, 6.3a/c, 25.
- In February 2014, the United States requested additional consultations on local content requirements under Phase II of the JNNSM for solar cells and modules, as only 250 MW were reserved for bidding for projects that used domestically manufactured solar cells and modules (WTO, 2016; Global Trade Alert, 2015).
- In May 2014, the WTO Dispute Settlement Body established a panel at the request of the United States, with Brazil, Canada, China, the European Union, Japan, the Republic of Korea, Malaysia, Norway, the Russian Federation, Turkey, Ecuador, Saudi Arabia and Chinese Taipei as third parties.
- The panel found that the local content requirements under JNNSM were inconsistent with:
  - The TRIMS Agreement §1a of the Illustrative List in the Annex and Art. 2.1. (for an explanation and more details on the TRIMS Agreement, see Section 2).
  - The GATT Agreement Art. III:4 (due to less favourable treatment, as Indian solar power developers are required to use locally produced rather than imported equipment) (WTO, 2016) (for an explanation and more details on the GATT Agreement, see Section 2).
- India tried to convince the panel that the measures taken were covered by the government's procurement exemption under GATT Art. III:8a.



- The panel found that the measures included in the government’s procurement exemption under GATT Art. III:8a were not justified, because the government procured electricity and not solar cells and modules (WTO, 2016).
- India countered that the local content policies were justified under the general exception of GATT Art. XX(j), arguing that solar modules and cells were in “*local short supply*” due to India’s lack of domestic manufacturing capacity in solar cells and modules and/or the risk of disruption in imports.
- India justified the measures under GATT Art. XX(d), asserting that the local content requirements are crucial in order to comply with legal obligations to promote sustainable development and identified four international and four domestic legal instruments (including the Electricity Act, the National Plan and national policy documents on electricity and climate change) (WTO, 2016; ICTSD, 2016).
- Regarding Art. XX (j), the panel countered that India had not demonstrated the existence of risks associated with short supply and therefore found that the challenged measures were not justified under Art. XX (j). As regards Art. XX (d), the panel found that “*most of the instruments identified by India did not constitute “laws or regulations” within the meaning of Art. XX (d), or were not laws or regulations in respect of which the local content requirement measures “secure compliance”*” (WTO, 2016).
- The Appellate Body’s report was circulated to members on 16 September 2016 (WTO, 2016).

India’s case shows that although developing countries usually enjoy more policy space within WTO regulations than industrialized countries (see, for instance, Ontario’s wind energy case), they are not immune against WTO complaints and convictions.

Brazil is a pioneer in the installation of wind farms in Latin America and has excellent wind resources in the north-eastern and southern regions of the country. In 2011, the Brazilian wind market was ranked ninth in the global market for investment (Simas and Paca, 2014). Brazil pursues two objectives in the wind power industry: first, due to Brazil’s increasing electricity demand, the existing infrastructure is no longer sustainable and needs to be enhanced; and second, the Brazilian government is looking for a more diversified energy mix and wind power complements the large share of existing hydro power (Global Wind Energy Council, n.d.).

Brazil has far-reaching experience with local content policies and uses them in the wind energy industry. In 2002, the country's government introduced PROFINA (Programme of Incentives for Alternative Electricity Sources), a feed-in-tariff programme coupled with local content requirements. PROFINA offered tariff incentives based on the wind capacity factor (linked to wind speed). When the capacity factor reached 44 per cent (reflecting good wind speed), the tariff was set at US\$ 62/MWh. The programme also included targets for two phases: the installation of 3,300 MW of renewables (biomass, wind and small hydro power plants) was required in the first phase, and 1,429 MW in the second phase. Moreover, PROFINA introduced nationalization indices with a minimum requirement of 60 per cent local components for equipment and 90 per cent for services (Kuntze and Moerenhout, 2013).

PROFINA was replaced by local content policies under Brazil's National Development Bank (BNDES) and auctions were organized by the Ministry of Mines and Energy in 2009. The first price auction (competitive bidding system) was introduced in 2009 with a positive impact on the wind industry and investment. Furthermore, BNDES offered a subsidized loan programme for wind turbine producers and maintained the 60 per cent local content requirement (OECD, 2015; IRENA, 2012). BNDES loan rates were often 50 per cent less than the best rates of commercial banks and these financial incentives attracted foreign investors like General Electric, Gamesa, etc. to build local factories in Brazil (Kuntze and Moerenhout, 2013). Three years later, in 2012, BNDES increased its local content requirements even more: while companies had to previously source 60 per cent of components locally, they now had to produce or assemble at least three of the four main wind farm elements such as towers, blades, nacelles and hubs in Brazil (Bloomberg, 2012).

Brazil has 15 major suppliers in its wind energy industry and the majority are foreign companies that entered the market at different stages. Newcomers in particular had to invest in factories to catch up with local content requirements and to receive and maintain BNDES accreditation. Not all companies managed to meet these obligations, and five manufacturers temporarily lost their accreditation, with negative effects for the manufacturers and developers and their subcontracts (Rennkamp and Fortes Westin, 2015).

In terms of job creation, Simas and Paca (2014) examined the number of jobs created in Brazil's wind power industry from 2010 to 2017 (covering wind power projects already installed or acquired until September 2013) and estimated that the number of jobs amounted to 170,000 person-year equivalents. They also found that in contrast to other studies, not the manufacturing sector, but the construction industry is the most labour intensive one and has the highest potential of generating jobs (Simas and Paca, 2014). According to research results of the

Brazilian Wind Energy Association, 15 jobs per MW were created, amounting to 12,000 newly created direct and indirect jobs since 2009, with an estimated 280,000 jobs in total at 18,6 GW of wind capacity by 2020 (Tavares, 2012 in Rennkamp and Fortes Westin, 2015).

The outcome of Brazil's local content policy experience in the wind energy industry seems mixed. Brazil increased its installed wind energy capacity from 22 MW in 2002 up to 931 MW in 2010, a modest increase compared to other countries (Kuntze and Moerenhout, 2013). On the one hand, BNDES's financial incentives led to successful FDI attraction and deployment of wind energy, and foreign companies entered the market and transferred technologies (although mostly low and medium technology content) (Rennkamp and Fortes Westin, 2015; OECD, 2013a; Kuntze and Moerenhout, 2013). On the other hand, Brazil's local content policies resulted in an increase in the cost of wind turbine systems and significant delays in the installation of wind power plants, in addition to the challenge of local content requirements being linked to the weight of wind turbine components (OECD, 2013a). The turbine components are mostly produced with Brazilian steel, which is about 70 per cent more expensive than imported steel, leading to higher turbine costs and increased energy prices (Kuntze and Moerenhout, 2013). Furthermore, expensive components with high technology content and high skill requirements are still being imported (Rennkamp and Fortes Westin, 2015).

In short, the local content policies in Brazil were not ideal, but managed nonetheless to attract large domestic and foreign companies and Brazil's high wind energy potential was being reached.

The following two case studies are not related to each other in terms of sector, but show parallels in terms of the importance of foreign investment and the aim of fostering the domestic industry and creating local linkages. They differ in terms of national context, industrial development, the extent of use of local content requirements and the role and ownership of national governments. The first case study covers China's automotive industry and the second the garment industry in Bangladesh.

#### **4.4 China's automotive industry and local content/procurement policy linkages**

China is the top automotive manufacturing powerhouse worldwide, followed by Japan, Germany and the United States. China produces almost one-third of global automotive products (OICA, 2015). China's success story in the automotive industry is closely related to its local content policies and state owned companies (SOEs). The Chinese central government as well as

the provincial local governments<sup>15</sup> have played a key role in the successful development of the market, beginning as early as the 1980s, when China decided to shift its focus from trucks to passenger vehicle production and China's declaration that the automotive industry was a pillar of the national economy. FDI also played a crucial role - in the 1990s, China was major a FDI recipient and by 2001, FDI accounted for US\$ 233 billion of total investment in the automotive industry (Biswajit et al., 2007).

The shift from trucks to passenger vehicles in the 1980s was supported by state owned enterprises (SOEs), joint ventures and local content policies. Chinese SOEs possess the majority of stakes in the large automobile companies, for instance, Dongfeng Motor Group, FAW Car, Guangzhou Automobile and SAIC Motor. These four companies belong to the world's largest public companies according to Forbes Global 2000 (in Hufbauer et al., 2014). SOEs also enjoy government support, such as direct subsidies (more than US\$ 300 billion between 1985 and 2005), exemptions from antitrust enforcement and concessionary financing, among others (Hufbauer et al., 2014). In 2002, Beijing enacted the Government Procurement Law of the People's Republic of China, which still influences purchasing by SOEs, particularly with regard to projects that depend on government investment. This law is also linked to local content requirements as an example from 2009 demonstrates, when China initiated the disbursement of US\$ 586 billion as economic stimulus, but limited it to government investment projects which purchased domestic products (with the exception that such goods, construction, engineering or services were not available in China or could not be purchased for reasonable commercial terms) (Haley, 2012). Furthermore, projects that required imported products required prior approval from relevant government authorities (Haley, 2012).

Local content policies were not only implemented for local procurement. Joint ventures with foreign automobile companies were heavily encouraged, for example, with ownership restrictions of 50 per cent and the first automobile joint venture Beijing-Jeep Co Ltd was signed in the 1980s (He, 2008). The Chinese government further issued subsidies to the auto parts industry<sup>16</sup>, imposed high tariffs on imported components (if 100 per cent of the components were imported, the tariff rate was 50 per cent, if the domestic components amounted to 80 per cent, the tariff rate dropped to 20 per cent), offered outright grants, preferential taxes, loans from state-owned banks, export credits and guarantees at concessional rates as well as providing

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<sup>15</sup> For example, the City of Beijing implemented policies to support the development of pure electric and plug-in hybrid vehicles, with a focus on batteries, motors and electronic controls. Beijing's target is to invest US\$ 3.1 billion to support this industry, in addition to preferential tax treatment, guiding financial institutions to provide credit and guarantee support, government procurement and consumption subsidies (Law Offices of Stewart and Stewart, 2012).

<sup>16</sup> In addition to cheap labour in China, the subsidies can partly explain why Chinese auto parts can be produced 30 per cent to 50 per cent cheaper than comparable auto parts manufactured in Europe, North America or Japan (Law Offices of Stewart and Stewart, 2012).

government vehicle purchase subsidies for public and private purchases of domestically produced vehicles (especially for new energy vehicles). Additional benefits for the automotive industry are also made available in special economic development zones in China, for instance, cheaper rates for water and electricity, exemption from certain utility fees and cash awards for technological achievements, among others. In the 12<sup>th</sup> Five-Year Plan and the foreign investment catalogue, China furthermore prioritized high-tech, high-value added and environmentally friendly industries, such as energy efficient automobile production (alternative fuel cars, hybrid cars, etc.). The government offers benefits in these industries, such as a greater scope of foreign ownership, less extensive government reviews and lower taxes to foreign companies (Haley, 2012; Hufbauer et al., 2013; Law Offices of Stewart and Stewart, 2012).

By joining the WTO in 2001, the structure of local content policies changed in China and the local content requirements were removed from official laws and regulations. For example, the tariffs on assembled auto part imports were lowered from 52 per cent to 25 per cent and tariffs on auto parts decreased from 15 per cent to 10 per cent. Nevertheless, the Chinese government retained local content policy promotion in different ways following WTO accession (Hufbauer et al., 2014; Law Offices of Stewart and Stewart, 2012; Haley, 2012). For instance, foreign ownership requirements remained, since restrictions of foreign participation in joint ventures to less than 50 per cent are not covered by WTO rules. Another example was the restructuring of the recent consumer subsidy programme for energy saving and new energy vehicles, with subsidies being channelled through manufacturers located in China and thus do not appear to be available to consumers who purchase imported cars. Furthermore, a secret local content rule of 60 per cent seems to still exist as well as the use of domestically produced engines over imports in order to have investment projects and Chinese bank loans approved. China's auto part tariff classifications resulted in higher tariffs than agreed in the WTO accession agreement to avoid imports of auto parts (Hufbauer et al., 2014; Law Offices of Stewart and Stewart, 2012; Haley, 2012).

To conclude, China achieved the creation of a top producing automotive industry, accompanied by the official and unofficial use of local content policies.

#### **4.5 The boom of Bangladesh's garment industry**

Bangladesh's garment industry experienced a rapid boom post-independence, supported by government efforts and various policy changes. Local content policies played an important role, although they were not as prominent in the garment industry as in other country case studies covered here. The path towards a prosperous export-oriented garment industry in Bangladesh

was initiated in the early 1980s and the success of the ready-made garments (RMG) industry was reflected in the jump in exports from US\$ 31.57 million in 1983/84 (accounting for nearly 4 per cent of Bangladesh's total exports) to US\$ 28,034.16 million in 2015/16 (representing 82 per cent of Bangladesh's total exports). Currently, 4,328 garment factories are operational in Bangladesh with 4 million employed workers, while in 1978, there were only nine export-oriented garment manufacturing units in the country (BGMEA, n.d.).

The early eighties were characterized by attraction of investors and the establishment of first joint ventures, which benefitted from the cheap labour market, the quota systems under the Multi-Fibre Arrangement on international trade in textiles (MFA) and Bangladesh's large internal market. The Republic of Korea's firm Daewoo entered a joint venture with Dosh Garments of Bangladesh to take advantage of Bangladesh's underused garment quota in the United States and Europe, resulting in technology, skills and know how transfers. An increasing number of ventures and investments followed (Yunus and Yamagata, 2012; UNCTAD, 2012; MakingIt, 2011; Sattar and Ahmed, 2012). The government encouraged these developments by turning socialist policies into more pro-market, pro-investment and laissez-faire-leaning policies as well as issuing licenses for duty free imports of machinery to produce garments for export purposes (Yunus and Yamagata, 2012). Back-to-back letters of credit and the provision of special bonded warehouses to access inputs at international prices were additionally introduced in the eighties to decrease working capital requirements and to allow duty-free access to inputs for RMG producers/exporters (Yunus and Yamagata, 2012):

- Back-to-back letter of credit: under the back-to-back letter of credit scheme extended by commercial banks, the exporters of RMG could import inputs as fabrics and accessories against export orders placed in their favour by RMG importers and thus saved substantial work capital costs.
- Bonded warehouse facilities: under the bonded warehouse facilities, imported inputs could be cleared through customs against export orders without paying import duties, which ensured export-oriented RMG units access to imported inputs at zero-tariff (although the rest of the country faced huge tariff- and non-tariff barriers).
- Additionally, in 1982, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) was set up to foster the promotion and protection of manufacturers' and exporters' interests in the garment industry (Yunus and Yamagata, 2012; Sattar and Ahmed, 2012).

During the 1990s, Bangladesh's garment industry received more than 70 per cent of total investments in the manufacturing sector (BIDA, 2015). After the phase out of MFA, Bangladesh noted even higher RMG exports and growth rates. Financial incentives, the adoption of conducive investments, encouragement of FDI, establishment of export processing zones and exemption of corporate taxation on export profits, among others, were support mechanisms introduced by the government to pursue export-led industrialization in the garment industry (Yunus and Yamagata, 2012). Moreover, to strengthen the links to the local economy within the garment industry, the government introduced various local content requirements and defined the garment industry as a high priority one (BIDA, 2015). Many of these support policies focused on the use of locally produced fabrics in the export-oriented garment industry. For instance, 5 per cent (of the FOB export price) subsidies for garments in place are conditional on local content requirements (UNCTAD, 2012). Cash compensation or duty drawback facilities for exports are coupled with the use of local raw materials in garments (CPDBEI, 2001). For instance, in 1992, a 15 per cent cash incentive on the value of exported locally produced fabric was provided, which increased to 25 per cent in 2002 and decreased to currently 15 per cent (ITC, 2002; BIDA, 2015). Additionally, the Bangladesh National Bank provided limited subsidies to garment exporters if their products were locally manufactured with either 100 per cent local raw materials or duty-paid imported raw materials (United Nations, 2004). Employment restrictions for foreigners were also applied to guarantee jobs for Bangladesh's citizens. The government imposed quotas on skilled foreigners for domestic and foreign companies with a maximum ratio of 1:20 of foreign to local employees in industrial enterprises at any time during regular production periods (Kathuria et al., 2016). To encourage technology transfer, the government aimed to strengthen collaboration between domestic machinery manufacturing industries and local technology institutes to develop local and affordable technologies and foster partnerships with foreign investors (GPRB, 2010 and 2016). Furthermore, specialized institutions were established, such as the National Institute for Fashion Technology, to meet the demand for a skilled labour force in Bangladesh's garment industry (Yunus and Yamagata, 2012).

Bangladesh as a least developed country has duty free access to the European Union for its garments and other finished goods if the imported components of the finished products do not exceed 70 per cent (MakingIt, 2011). Bangladesh also had preferential tariffs on imports to the U.S. under the Generalized System of Preferences, which was suspended in 2013 due to safety problems and labour rights violations<sup>17</sup> in the garment industry. Although progress has been

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<sup>17</sup> For more information, see, for example, the ILO's occupational safety and health country profile of Bangladesh: <http://www.ilo.org/safework/countries/asia/bangladesh/lang--en/index.htm>

made to address fire and building safety issues in the industry, further improvements are necessary to reinstate Bangladesh's trade benefits with the U.S. (Oustr, 2015; Kathuria et al., 2016).

In terms of policy plans, the government introduced several plans to pursue industrial development, including the Industrial Policy of 1973, the New Industrial Policy of 1982, the Revised Industrial Policy of 1986, the Industrial Policy of 1999, followed by others, the most recent being the National Industrial Policy Plan of 2010. All of these policies aimed to create a strong manufacturing base in the country (Yunus and Yamagata, 2012). The National Industrial Policy Plan 2010, in particular, aims to transform Bangladesh into an industrially developed middle-income economy, thus also posing a dilemma for Bangladesh's garment exports because the country would lose its LDC status and the related trade benefits (MakingIt, 2011).

## **5. Conclusion**

Following the economic crisis of 2008, the use of local content requirements became more widespread again. Despite the highly controversial debates in the literature about their success or failure and their non-conformity with international economic agreements, their usage has experienced an uptick since the crisis. Local content requirements may often violate multilateral WTO agreements, economic partnerships and regional trade agreements, but their non-compliance often remains without consequences due to flexible interpretations and limited enforcement by the WTO as well as for political reasons. LCRs are mostly linked to the WTO General Agreement on Tariffs and Trade, the Agreement on Trade-Related Investment Measures, the Agreement on Subsidies and Countervailing Measures and the Agreement on Government Procurement. When a country goes before the WTO court case for illegal use of LCRs, their defence usually refers to Article XX "General Exceptions" of the GATT Agreement or government procurement policies (as in India's case, albeit not successful). Although the WTO limits the room for local content policies substantially, there are enough loopholes and legal gaps, particularly for developing and least developed countries. The success of local content policies does not only vary by context, political economy, development stage, maturity, institutional readiness, resource endowments and capacity as well as a country's industrial competence, it is also affected by corruption, transparency, law enforcement, strong intellectual property rights, existing R&D capabilities and a skilled labour force. The low- and middle-income country experiences suggest that policymakers can make use of a broad range of local content policy instruments but need to develop them jointly with other policies in a realistic, transparent and non-corrupt way and assure the necessary preconditions to make them work. For a country with a very low skilled labour force, for instance, the requirement of hiring local



employees in skilled positions might be problematic. Our case studies further suggest that the same local content requirements can be applied in different industries. The experiences of the countries covered here range from the oil, mining, renewable energy, automobile and garment industries and usually depend on the target pursued rather than on the industry in which they are applied. Policymakers usually pursue objectives such as the boosting of local value addition, enhancing the links to the local economy, creating jobs, improving innovation and technology, increasing the revenue of minerals, diversifying the economy and/or increasing green industry. Most of the countries discussed here used “classic” local content instruments such as licensing grants, employment requirements, local production requirements, training of local personnel, R&D and technology transfer agreements, joint ventures, as well as procurement and instruments that entail financial incentives, among others, to achieve their targets. India was the only country covered here in which the local content requirements were challenged and the WTO case lost. Furthermore, in nearly all countries the government played a key role in designing and implementing local content requirements, the only exception being Mozambique, where the state had a rather weak position. Local governments, institutions and signed acts, such as the Nigerian Oil and Gas Industry Content Development Act, as well as development banks, for instance, BNDES, could assume a key role in implementing local content policies. Not only their implementation, but also their phasing out is crucial and is determined by a different pace across countries (if they phased these out at all or converted them into voluntary agreements).

To conclude, countries implemented local content policies in different ways, some using more rigid instruments, others applying softer regulations. These policies did not always lead to a successful domestic industrialization, value addition or increased linkages. Many factors as well as good practice need to be considered when designing and implementing local content policies. These policies can support countries on their path towards industrialization and economic growth, but are definitely not a guarantee for success on their own.

## References

- ADB (African Development Bank) (2016): Botswana's Mineral Revenues, Expenditure and Savings Policy. A case study. Côte d'Ivoire.
- Adedeji, A.N., Sidique, S.F., Rahman, A.A. and Law, S.H. (2016): The role of local content policy in local value creation in Nigeria's oil industry: A structural equation modeling (SEM) approach. *Resources Policy* Vol. 49, pp. 61-73.
- Aggarwal, V.K. and Evenett, S.J. (2014): Do WTO rules preclude industrial policy? Evidence from the global economic crisis. *Bus. Polit.* 16(4), pp. 481-509.
- BGMEA (Bangladesh Garment Manufacturers and Export Association) (n.d.): Trade. Available at: <http://www.bgmea.com.bd/> , Last access 19.10.2016.
- BIDA (Bangladesh Investment Development Authority) (2015): Garments and Textiles. Available at: <http://www.bida.gov.bd/site/page/c9ffe4ad-1b7e-4c85-b77e-b7d9427d4533/Garments-&-Textiles>, Last access 24.10.2016.
- Biswajit, N., Banerjee, S. and Chatterjee, R. (2007): Changing features of the automobile industry in Asia: Comparison of production, trade and market structure in selected countries. Asia-Pacific Research and Training Network on Trade Working Paper Series, No. 37.
- Bloomberg (2012): BNDES raises local content requirement for Brazil wind turbines. Available at: <http://www.bloomberg.com/news/articles/2012-12-13/bndes-raises-local-content-requirement-for-brazil-wind-turbines>. Last access 29.09.2016.
- Buur, L. (2014): The development of natural resource linkages in Mozambique: The ruling elite capture of new economic opportunities. DIIS Working Paper 2014.
- CCSI (Columbia Center on Sustainable Investment) (2016): Local content – Botswana Mining. Available at: <http://ccsi.columbia.edu/files/2014/03/Local-Content-Botswana-Mining-CCSI-Sept-2016.pdf>, Last access 24.10.2016.
- CERC (n.d.): Central Electricity Regulatory Commission. Available at: <http://www.cercind.gov.in>, Last access 27.10.2016.
- Cimino, C., Hufbauer, G.C. and Schott, J.J. (2014): A proposed code to discipline local content requirements. Peterson Institute for International Economics Policy Brief February.
- Columbia Center on Sustainable Investment (2014): Local content Nigeria. Available at: <http://ccsi.columbia.edu/files/2013/07/Local-Content-Nigeria-Petroleum-CCSI-May-2014.pdf>, Last access 11.10.2016.
- CPDBEI (Centre for Policy Dialogue and Bangladesh Enterprise Institute) (2001): A review of macroeconomic scenario, investment policies and regulatory framework in Bangladesh. Available at: <http://webcache.googleusercontent.com/search?q=cache:FLnNoXmpwFQJ:cuts-international.org/ifd-lm-cr-bdesh.doc+&cd=1&hl=de&ct=clnk&gl=at&client=firefox-b-ab>, Last access 19.10.2016.

- ECA (Economic Commission for Africa) (2016): Transformative industrial policy for Africa. Addis Ababa.
- Ernst and Young (2014): Creating shared value in Africa: Local content in the oil and gas industry.
- Global Trade Alert (2015): India Local content requirements under the domestic Solar Mission. Available at: <http://www.globaltradealert.org/measure/india-local-content-requirements-under-domestic-solar-mission-phase-ii-batch-iii>, Last access 27.10.2016.
- Government of the People's Republic of Bangladesh (2010): National Industrial Policy 2010 DRAFT. Ministry of Industries Bangladesh. Available at: [http://www.smef.org.bd/v2/smef\\_download/government\\_policies/Industrialpolicy\\_\\_revised2010Eng.pdf](http://www.smef.org.bd/v2/smef_download/government_policies/Industrialpolicy__revised2010Eng.pdf), Last access 19.10.2016
- GPRB (Government of the People's Republic of Bangladesh) (2016): Seventh five year plan FY2016-FY2020. Available at: [http://www.plancomm.gov.bd/wp-content/uploads/2015/11/7FYP\\_after-NEC\\_11\\_11\\_2015.pdf](http://www.plancomm.gov.bd/wp-content/uploads/2015/11/7FYP_after-NEC_11_11_2015.pdf), last access 19.10.2016.
- Haley, B.C.V. (2012): Putting the pedal to the metal. Subsidies to China's Auto-Parts Industry from 2001 to 2011. Economic Policy Institute Briefing Paper No. 316.
- Hansen, M.W., Buur, L., Therkildsen, O. and Kjaer, M. (2014): The political economy of local content in African extractives: Lessons from three African countries. Available at: <http://openarchive.cbs.dk/bitstream/handle/10398/9014/Wendelboe%20Hansen.pdf?sequence=1>. Last access 11.10.2016.
- He, X. (2008): Interaction between transnational corporations and industry clusters in China: The case of automobile industry. In: Formation of industrial clusters in Asia and regional integration, Kuchiki.A and Tsuji, M. (eds). IDE-JETRO Midterm Report.
- Hestermeyer, H.P. and Nielsen, L. (2015): The legality of local content measures under WTO law. Legal Studies Research Paper Series No. 4.  
<http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Trade-and-Industry-MTI/MTI-News/Procurement-of-Locally-manufactured-goods-and-services/>, Last access 21.10.2016.
- Hufbauer, G.C., Schott, J.J., Cimino, C., Vieiro, M. and Wada, E. (2013): Local Content Requirements: Report on a Global Problem.
- ICTSD (International Centre for Trade and Sustainable Development) (2016): WTO decision on local content requirements will not affect India solar ambitions, officials say. Available at: <http://www.ictsd.org/bridges-news/biores/news/wto-decision-on-local-content-requirements-will-not-affect-india-solar>, Last access 27.10.2016.
- IRENA (2012): 30 years of policies for wind energy. Available at: [https://www.irena.org/DocumentDownloads/Publications/IRENA\\_GWEC\\_WindReport\\_Full.pdf](https://www.irena.org/DocumentDownloads/Publications/IRENA_GWEC_WindReport_Full.pdf). Last access 29.09.2016.
- ITC (2002): Adding value: Building value-addition alliances. Available at: [http://www.intracen.org/uploadedFiles/intracen.org/Content/Exporters/Sectoral\\_Information/](http://www.intracen.org/uploadedFiles/intracen.org/Content/Exporters/Sectoral_Information/)

- Manufactured\_Goods/Textiles/Inter-firm%20Strategic%20Alliances%20in%20textiles%20and%20Clothing%20Industry,%20e.g.%20from%20Bangladesh%20and%20Sri%20Lanka.pdf, Last access 24.10.2016.
- Johnson, O. (2013): Exploring the effectiveness of local content requirements in promoting solar PV manufacturing in India. DIE Discussion Paper 11/2013. Bonn.
- Johnson, O. (2013): Exploring the effectiveness of local content requirements in promoting solar PV manufacturing in India. DIE Discussion paper 11/2013. German Development Institute.
- Kaplinsky (2011): Commodities for Industrial Development: Making Linkages Work. UNIDO Working Paper 01. Vienna.
- Kathuria, S., Mezghenni Malouche, M., eds. (2016): Strengthening Competitiveness in Bangladesh – Thematic Assessment. A diagnostic trade integration study. World Bank.
- Klueh, U., Pastor, G., Segura, A. and Zarate, W. (2007): Inter-sectoral Linkages and Local Content in Extractive Industries and Beyond – The Case of Sao Tomé and Príncipe. IMF Working Paper 07/213.
- KPMG (2012) Botswana country profile.
- Kuntze, J.-C. and Moerenhout, T. (2013): Local content requirements and the renewable energy industry – a good match? ICTSD
- Law Offices of Stewart and Stewart (2012): China’s support programs for automobiles and auto parts under the 12<sup>th</sup> five-year plan. Washington.
- Lockström, M., Schadel, J., Harrison, N., Moser, R. and Malhotra, M.K. (2010): Antecedents to supplier integration in the automotive industry: A multiple-case study of foreign subsidiaries in China. *Journal of Operations Management* 28, pp. 240-256.
- MakingIt (2011): Garment industry leads the way. Available at: <http://www.makingitmagazine.net/?p=3837>. Last access 24.10.2016.
- Mbayi, L. (2011): Linkages in Botswana’s diamond cutting and polishing industry. MMCP Discussion Paper No. 6., pp. 1-69.
- Ministry of new and renewable energy (n.d.): Jawaharlal Nehru National Solar Mission. Available at: <http://www.mnre.gov.in>, Last access 27.10.2016.
- MTI (Ministry of Trade and Industry) (2015): Public information. Available at:
- Nordas, H.K., Vatne, E. And Heum, P. (2003): The upstream petroleum industry and local industrial development. A comparative study. SNF Report No. 08/03.
- OECD (2013a): Investment policy reviews: Mozambique 2013.
- OECD (2013b): Reviews of innovation policy. Innovation in Southeast Asia. OECD Publishing, Paris.
- OECD (2013c): OECD Investment Policy Reviews: Botswana.

- OECD (2015): Local-content requirements in the solar- and wind-energy global value chains. In: *Overcoming Barriers to International Investment in Clean Energy*, OECD Publishing, Paris.
- OICA (2015): Production Statistics. Available at: <http://www.oica.net/category/production-statistics/>. Last access 29.09.2016.
- Okpe, F.O. (2015): Economic development and the utility of local content legislation in the oil and gas industry. Conflicts and effects of Nigeria's local content act in the context of international investment law. *Pacific McGeorge Global Business & Development Law Journal* (28).
- Oustr (Office of the United States Trade Representative) (2015): GSP Review of Bangladesh recognizes progress, urges that more be done on worker safety and rights. Available at: <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2015/january/gsp-review-bangladesh-recognizes>, Last access 24.10.2016.
- Ovadia, J.S. (2015): The role of local content policies in natural resource-based development. *Österreichische Entwicklungspolitik* 2015.
- PWC (2016): Round-the-clock power supply: A key milestone for the Indian power sector. Available at: <https://www.pwc.in/assets/pdfs/publications/2016/round-the-clock-power-supply.pdf>, Last access 27.10.2016.
- Ramdoe, I. (2015): Industrial Policies in a changing world: What prospects for low-income countries. E15 Expert Group on Reinvigorating Manufacturing: New Industrial Policy and the Trade System. Think piece. International Centre for Trade and Sustainable Development and World Economic Forum.
- Ramdoe, I. (2016): Local content policies in mineral-rich countries. An overview. ECDPM Discussion Paper No. 193.
- Renewable Energy Week (2013): Dialog Paper – Dealing with local content requirements. 8<sup>th</sup> Wind Energy and Development Dialogue. Berlin.
- Sattar, Z. and Ahmed, S. (2012): Reducing vulnerability in export performance: The export diversification challenge in Bangladesh. International Growth Centre Working Paper.
- Simas, M. and Pacca, S. (2014): Assessing employment in renewable energy technologies: A case study for wind power in Brazil. *Renewable and Sustainable Energy Reviews* 31, pp.83-90.
- South 32 (n.d.): Mozal Aluminium. Available at: <https://www.south32.net/our-operations/south-africa/mozal>. Last access 29.09.2016.
- Stephens, S. (2016): Digging for diversification in Botswana. Natural Resource Charter Case Study. Natural Resource Governance Institute.
- Stephenson, S. (2013a): Addressing Local Content Requirements in a Sustainable Energy Trade Agreement. ICTSD and Global Green Growth Institute.

- Stephenson, S. (2013b): Addressing local content requirements: Current challenges and future opportunities. *Biores* 7(3).
- Stone, S., Messent, J. and Flaig, D. (2015): *Emerging Policy Issues: Localisation Barriers to Trade*. OECD Trade Policy Papers No. 180. OECD Publishing. Paris.
- UNCTAD (2012): *Bangladesh sector-specific investment strategy and action plan. Pilot study results*.
- United Nations (2004): *Export diversification and economic growth: The experience of selected least developed countries*. Development Papers No. 24. Bangkok.
- United Nations Industrial Development Organization (UNIDO) (2015): *Industrial Development Report 2016. The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development*. Vienna.
- Warner, M. (2011): *Do local content regulations drive national competitiveness or create a pathway to protectionism? Local Content Solutions Briefing No. 5*.
- Warwick, K. (2013), "Beyond Industrial Policy: Emerging Issues and New Trends", *OECD Science, Technology and Industry Policy Papers*, No. 2, OECD Publishing, Paris.
- Weiss, J. (2015): *Taxonomy of industrial policy. Inclusive and Sustainable Industrial Development Working Paper Series 08/2015*. Vienna.
- World Bank (2011): *Yes Africa Can. Success stories from a dynamic continent*. P. Chuhan-Pole and M. Angwafo, eds. Washington
- WTO (2015): *Trade Policy Review Botswana*. Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/s324-00\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/s324-00_e.pdf), Last access 18.10.2016
- WTO (n.d.c.): *Disputes by country/territory*. Available at: [https://www.wto.org/english/tratop\\_e/dispu\\_e/dispu\\_by\\_country\\_e.htm#complainant](https://www.wto.org/english/tratop_e/dispu_e/dispu_by_country_e.htm#complainant), Last access 8.11.2016.
- WTO (n.d.d): *Agreement on Government Procurement*. Available at: [https://www.wto.org/english/tratop\\_e/gproc\\_e/gp\\_gpa\\_e.htm](https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm), Last accessed 19.08.2016.
- WTO (n.d.e): *Trade-Related Aspects of Intellectual Property Rights*. Available at: [https://www.wto.org/english/docs\\_e/legal\\_e/27-trips\\_01\\_e.htm](https://www.wto.org/english/docs_e/legal_e/27-trips_01_e.htm), Last accessed 19.08.2016.
- WTO (n.d.f): *The General Agreement on Tariffs and Trade*. Available at: [https://www.wto.org/english/docs\\_e/legal\\_e/gatt47\\_01\\_e.htm](https://www.wto.org/english/docs_e/legal_e/gatt47_01_e.htm), Last accessed 19.08.2016.
- WTO (World Trade Organisation) (2016): *India – Certain measures relating to solar cells and solar modules*. Available at: [https://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds456\\_e.htm](https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds456_e.htm), Last access 27.10.2016.
- WTO (World Trade Organisation) (n.d.a): *Agreement on Trade Related Investment Measures*. Available at: [https://www.wto.org/english/tratop\\_e/invest\\_e/invest\\_info\\_e.htm](https://www.wto.org/english/tratop_e/invest_e/invest_info_e.htm), Last accessed 19.08.2016.

WTO (World Trade Organisation) (n.d.b): Agreement on Trade Related Investment Measures. Available at: [https://www.wto.org/english/docs\\_e/legal\\_e/18-trims.pdf](https://www.wto.org/english/docs_e/legal_e/18-trims.pdf), Last accessed 19.08.2016.

Yunus, M. and Yamagata, T. (2012): The garment industry in Bangladesh. In: Fukunishi ed., Dynamics of the Garment Industry in Low-Income Countries: Experience of Asia and Africa, IDE-JETRO.



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