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# Binding Constraints to Trade Expansion

**AID FOR TRADE OBJECTIVES AND  
DIAGNOSTICS TOOLS**

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**BINDING CONSTRAINTS TO TRADE EXPANSION: AID FOR TRADE OBJECTIVES AND  
DIAGNOSTICS TOOLS**

**OECD Trade Policy Working Paper No. 94**

**By Jean-Jacques Hallaert and Laura Munro**

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## ABSTRACT

Trade can be a powerful engine for economic growth, poverty reduction, and development. However, harnessing the power of trade is often difficult for developing countries, particularly the least developed countries, because of supply-side domestic constraints (lack of trade-related infrastructure and capacity). The Aid for Trade Initiative was launched to address these constraints. This paper sets forth strategies to identify the most binding constraints to trade expansion so countries and donors can channel resources toward reforms and projects that have the largest effect. It shows that the four most common objectives of aid-for-trade projects (increasing trade, diversifying exports, maximizing the linkages with the domestic economy, and increasing adjustment capacity) have the potential to boost growth and reduce poverty in developing countries. However, the potential of trade may not be realized as developing countries often face binding constraints that prevent them from turning trade opportunities into trade, and trade into growth. First, they face difficulties turning trade opportunities into trade flows because of capacity constraints and lack of adequate trade-related infrastructure. Second, some domestic constraints choke the impact of trade expansion on economic growth. The paper focuses on the first set of constraints and presents various diagnostic tools available to identify them. These tools often pinpoint a long list of constraints. As all constraints cannot be addressed simultaneously, there is a need to identify the most binding ones in order to prioritize reforms. The paper suggests combining the different diagnostic tools in an appropriate framework to achieve this prioritization. An adaptation of the growth diagnostics—originally developed by Hausmann *et al.* (2005) for guiding growth strategies—can be such a framework. By shifting the focus from growth to trade, this framework can be readily adapted by local authorities and development practitioners.

*Keywords: Aid for Trade, trade expansion, export diversification, supply-side constraints, infrastructure, trade capacities, binding constraints to trade, diagnostic tools, trade and growth, trade reform.*

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## TABLE OF CONTENTS

Executive Summary .....	4
1. Introduction .....	6
2. Focusing on the Objectives of the Aid for Trade Initiative .....	7
2.1 Increasing Trade .....	7
2.2 Diversifying Exports.....	10
2.3 Maximizing the Linkages with the Domestic Economy.....	12
2.4 Increasing Adjustment Capacity.....	13
3. Addressing the Binding Constraints: The Role of Aid for Trade.....	14
4. The Diagnostic Tools.....	17
4.1 Stakeholder Consultation.....	17
4.2 Benchmarking.....	19
4.3 The Diagnostic Trade Integration Studies Method.....	20
4.4 A Sectoral Approach: The Value Chain Analysis .....	21
4.5 Identifying the Most Binding Constraints: A Growth Diagnostics Adjusted for Trade .....	23
5. Conclusion.....	26
References.....	28
<b>Tables</b>	
Table 1. Results of selected studies linking exports and economic growth.....	8
Table 2. Results of selected empirical studies linking trade and economic growth. ....	9
<b>Figures</b>	
Figure 1. Causality chain in Aid for Trade and binding constraints .....	15
Figure 2. Growth Diagnostics.....	24
Figure 3. Growth Diagnostics adjusted for trade.....	25
<b>Boxes</b>	
Box 1. The Millennium Challenge Corporation’s Constraints Analysis .....	26

## Executive Summary

Trade can be a powerful engine for economic growth, poverty reduction, and development. Although debated, this is the main conclusion of a large body of empirical literature on trade and growth. However, harnessing the power of trade is often difficult for developing countries, particularly the least developed countries, because of supply-side domestic constraints. The Aid for Trade Initiative was launched to address these constraints. This paper sets forth strategies to identify the most binding constraints to trade expansion so countries and donors can channel resources toward reforms and projects that have the largest effect.

*This paper shows that the four most common objectives of aid-for-trade projects have the potential to boost growth in developing countries.* The most common objectives of aid-for-trade projects are (i) increasing trade; (ii) diversifying exports; (iii) maximizing the linkages with the domestic economy; and (iv) increasing adjustment capacity. Literature provides ample evidence that reaching these objectives contributed to boost economic growth and reduce poverty in developing countries.

*However, there is no guarantee as developing countries often face binding constraints that prevent them from turning trade opportunities into trade, and trade into growth.* Developing countries often confront two types of binding constraints that Aid for Trade should address. First, they face difficulties turning trade opportunities into trade flows because of capacity constraints and lack of adequate trade-related infrastructure. Second, some domestic constraints choke the impact of trade expansion on economic growth. The paper focuses on the first set of constraints leaving the analysis of the second set for future work.

*Various diagnostic tools are available to identify the binding constraints to trade expansion.* Stakeholder consultation, benchmarking, diagnostic trade integration studies method, and value chain analysis can all be used to pinpoint the trade needs and constraints preventing developing countries to expand trade (as defined by the four trade objectives). All these methods have advantages, but they also suffer from various shortcomings and limitations.

*The diagnostic tools often provide a long list of binding constraints. As all constraints cannot be addressed simultaneously, there is a need to identify the most binding constraints. This paper suggests combining the different diagnostic tools in an appropriate framework to achieve this prioritization.* Combining the various tools can help overcome the shortcomings and limitations of each diagnostic tool. It can also provide evidence for use in confirming the conclusions of any single approach and reduce the risks of misdiagnosis or capture by vested interest. Finally, combining the tools can identify the most binding constraints on which aid-for-trade interventions and reforms should focus first.

*An adaptation of the growth diagnostics—originally developed by Hausmann et al. (2005) for guiding growth strategies—can be an appropriate framework.* By shifting the focus from growth to trade, this framework can be readily adapted by local authorities and development practitioners. The framework employs a decision tree in order to prioritize reforms and “get the biggest bang for the reform buck.” At each node of the decision tree, stakeholder consultation, benchmarking, and value chain approach can be used in order to rank the constraints. Drawing on a tool from the Enhanced Integrated Framework for least developed countries, a Diagnostic Trade Integration Study action matrix can then be used to identify the actions and reforms needed, as well as the sources of potential external financial support and technical assistance. This approach would have the advantage of increasing participation and ownership by stakeholders (a key principle of the Paris Declaration on Aid Effectiveness) and, consequently, the chances of success of the reforms and of aid-for-trade interventions.

*Finally, the paper points to future areas for work.* The analysis shows that sequencing and complementary policies are crucial for strengthening the impact of aid-for-trade assistance on growth and

development. Building on the 2008 OECD publication “Trading out of Poverty — how Aid for Trade can help,” these aspects will be discussed in a “good practices” paper foreseen in the 2009-10 Programme of Work and Budget for the project. Moreover, further work can deepen the analysis of binding constraints. In particular, analytical work on identifying the most binding constraints in countries that share common characteristics (*e.g.* landlocked geography, small and vulnerable economies, or dependence on commodity exports) would be useful and can be undertaken by the Secretariat.

## 1. Introduction

1. Although highly debated, a large body of empirical literature provides ample evidence that trade liberalization and trade openness have a positive impact on economic growth and poverty reduction.<sup>1</sup> However, developing countries may face two types of domestic constraints that prevent them from exploiting the benefits of trade. First, some developing countries, particularly some least developed countries, lack the capacities and the trade-related infrastructure to integrate in the world trading system, despite increased market access. Second, the trade and growth literature shows that even when developing countries manage to expand their trade, there is a sizable heterogeneity in the economic growth response. In other words, some domestic constraints may limit the impact of trade expansion on growth. This paper focuses on the first set of constraints, which are identified in the Hong Kong WTO ministerial declaration (par. 57) that launched the Aid for Trade Initiative.

2. The list of domestic constraints can be very long. This is illustrated by the many trade-related needs found by the Diagnostic Trade Integration Studies (DTIS) undertaken in the context of the Enhanced Integrated Framework (EIF) and the scope of the Aid for Trade needs assessment process developed by the UNDP (2008).<sup>2</sup> Because financial resources and political capital for reforms are scarce, there is a need to identify the most binding constraints in order to prioritize the reforms and the aid-for-trade projects.

3. The objective of this paper is to discuss the various methods and tools policy makers and development practitioners can use to identify the most binding constraints to trade faced by a country and to sequence reforms and aid-for-trade interventions. This will help them design the appropriate policies and increase the effectiveness of aid-for-trade interventions. Therefore, this paper contributes to one of the five commitments of the Paris Declaration on Aid Effectiveness (2005), Management for Results (MfR), as it is “managing and implementing aid in a way that focuses on the desired results and uses information to improve decision-making.”<sup>3</sup>

4. This paper is part of the “Facts, Tools and Methods for Strengthening the Impact of Aid for Trade on Development” intermediate output described in the Joint 2007/08 Programme of Work and Budget between the DAC and the TC on Aid for Trade [COM/DCD/TD(2006)5]. It builds on the progress report “Binding constraints and the role of Aid for Trade” presented at the October 2007 joint meeting of the DAC and the Working Party of the Trade Committee [COM/DCD/TAD (2007)11].

5. The remainder of the paper is organized as follows. Section Two discusses the most common trade objectives that the Aid for Trade Initiative seeks to attain. These objectives are supported by a vast body of literature that shows trade promotes growth, which is key for poverty reduction. Section Three identifies the domestic binding constraints on developing countries’ capacities to use trade as a tool to promote development. Section Four presents a range of tools that developing countries can use to concentrate on the most binding constraints among the numerous trade-related needs they face.

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<sup>1</sup> Among the many literature surveys, see Berg and Krueger (2003) and Hallaert (2006) for the link between trade and growth and Winters *et al.* (2004) for the link between trade and poverty.

<sup>2</sup> The Integrated Framework (revamped to become the Enhanced Integrated Framework) is an initiative of six multilateral institutions (IMF, ITC, UNCTAD, UNDP, World Bank, and the WTO). It aims to integrate trade in LDCs development strategy, and to help the delivery of trade-related technical assistance in response to needs identified by each LDC. For more details see UNCTAD (2005) and <http://www.integratedframework.org/about.htm>.

<sup>3</sup> The scoping paper “Managing for Results in Aid for Trade” [COM/DCD/TAD(2009)4] elaborates on how MfR can be used to increase the effectiveness of Aid for Trade flows. It outlines an approach to identifying good practices in making Aid for Trade more results oriented.

## 2. Focusing on the Objectives of the Aid for Trade Initiative

6. Paragraph 57 of the Hong Kong Ministerial Declaration (WTO, 2005) clearly makes expansion of developing countries' trade the core objective of the Initiative "Aid for Trade should aim to help developing countries, particularly least developed countries (LDCs), to build the supply-side capacity and trade-related infrastructure that they need to assist them to implement and benefit from WTO Agreements and more broadly to *expand their trade*" (emphasis added). However, the philosophy of the Aid for Trade Initiative is not to support trade *per se* but trade inasmuch as it contributes to growth and poverty reduction. According to the Task Force on Aid for Trade (WTO, 2006b), "effective Aid for Trade will enhance growth prospects and reduce poverty in developing countries, as well as complement multilateral trade reforms and distribute the global benefits more equitably across and within developing countries."

7. In this context, the conclusions of the trade and growth literature provide useful insights in identifying the main engines that promote trade integration. While each country needs to define and formulate how trade reform could feed into its development strategy, the four following objectives are among the most common and mirror the ones that found a strong support in the trade and growth literature:

- *Increasing trade.* This is clearly the overarching objective of the Aid for Trade Initiative and the trade and growth literature provides strong evidence that trade expansion does lead to growth. Increasing trade can be achieved through unilateral, multilateral, and regional trade reform and initiatives;<sup>4</sup>
- *Diversifying exports.* The literature shows that diversification reduces external vulnerabilities, which in turn can contribute to "enhance growth prospects" (WTO, 2006b);
- *Maximizing the linkages with the rest of the economy.* This enhances growth prospects because it increases the impact of trade on economic activity. Maximizing the linkages with the rest of the economy also contributes to poverty reduction. Thus it constitutes an objective consistent with the rationale of the initiative which, as defined by the Task Force on Aid for Trade, is to "distribute the global benefit more equitably [...] within developing countries" (WTO, 2006b); and
- *Increasing adjustment capacities.* Two aid-for-trade objectives—recommended by the Task Force on Aid for Trade in order to operationalize the initiative—are related to adjustment capacities, namely "To help facilitate, implement, and adjust to trade reform and liberalization" and "To assist smooth integration into the world trading system" (WTO, 2006b).

### 2.1 Increasing Trade

8. Despite the econometric difficulties of establishing beyond doubt that engaging in international trade enhances growth, the weight of the evidence (surveyed by Berg and Krueger, 2003; Hallaert, 2006; and Winters, 2004) is clearly in that direction and there is certainly no coherent body of evidence that it is bad for growth.

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<sup>4</sup> As this section focuses on the objectives of the initiative rather than on the tools to achieve them, the relative merits of unilateralism, multilateralism, and regionalism are not discussed. The Task Force on Aid for Trade (WTO, 2006b) recommended that Aid for Trade "assist regional integration" and indicated that "assistance in formulating and financing accompanying measures could help to make regional integration an effective building block for the multilateral trading system." In this context, it is noteworthy that (i) the trade literature has shown that the welfare impact of regional integration will crucially depend on its design, (ii) the focus of Aid for Trade is on accompanying measures rather than on regional integration *per se*, and (iii) it is important to distinguish between Aid for Trade support for regional projects (such as infrastructure) and assistance for the design of regional trade agreements. Finally, regional agreements can be a catalyst for cooperation beyond trade but, in practice, this cooperation varies significantly across agreements (Estevadeordal and Suonimen, 2007; Khandelwal, 2004).

9. In the 1970s and 1980s, a few influential, in-depth, and multi-country case studies (Little *et al.*, 1970; Krueger, 1978; Bhagwati, 1978; Balassa, 1982; Michaely *et al.*, 1991) showed that outward-oriented development strategies were, in the long run, conducive to significantly higher growth than import substitution.

10. Cross-country regressions have subsequently been used to extend the country coverage and reach more general conclusions. They focused initially on the impact of export growth and virtually all analysis found a strong impact of export growth on economic growth (Table 1).<sup>5</sup> However, these studies potentially overestimated the impact of exports on growth mainly because they captured both the impact of trade on growth and the impact of growth on trade. Indeed, studies that tried to isolate the direction of causation found a weaker impact of exports on growth.<sup>6</sup> Starting in the second half of the 1990s, studies shifted their focus away from export growth toward more sophisticated measures of openness and included variables such as technological change or human capital that were identified as important growth determinants by the new growth theory. Although still subject to econometrical problems, these studies were more robust and generally reached the same conclusion: trade expansion does contribute to economic growth (Table 2).

**Table 1. Results of selected studies linking exports and economic growth.<sup>1</sup>**

Countries	Period	Impact on economic growth	Source
50	1953-63	Positive	Emery (1967)
41	1950-73	Positive	Michaely (1977)
41	1950-73	Positive	Heller and Porter (1978)
10	1956-73	Positive	Balassa (1978)
11	1960-73	Positive	Balassa (1982)
31	1964-73	Positive	Feder (1983)
4	1955-78	Positive	Nishimizu and Robinson (1984)
73	1960-78	Positive	Kavoussi (1984)
41	1960-81	Ambiguous: Positive for 1960-70; Positive but often insignificant for the more recent period	Kohli and Singh (1989)
17	1950-80	Positive	Nishimizu and Page (1990)
4	1976-88	Positive	Tybout (1992)
104	1960-88	Positive	Greenaway and Sapsford (1994)
69	1975-93	Positive	Greenaway <i>et al.</i> (1999)

<sup>1</sup> Depending on the studies exports growth or growth in the share of exports in GDP is considered.

Source: Greenaway *et al.* (1999) and Hallaert (2006).

<sup>5</sup> This is consistent with the rationale of Aid for Trade as defined by the Task Force on Aid for Trade. Although the Hong Kong declaration indicates that the objective of the Aid for Trade Initiative is to “expand trade,” the Task Force on Aid for Trade focused on increasing exports (“Aid for Trade is about assisting developing countries to increase exports of goods and services, to integrate into the multilateral trading system, and to benefit from liberalized trade and increased market access,” WTO, 2006b).

<sup>6</sup> For a survey, see Love (1994) and Hallaert (2006).

Table 2. Results of selected empirical studies linking trade and economic growth.

Measures of trade openness	Countries	Period	Impact on growth	Source
<i>I. Trade shares</i>				
Export share	>100	1970-97	Positive	Yanikkaya (2003)
Import penetration	>100	1970-97	Positive	Yanikkaya (2003)
Trade share in GDP	51	1960-87	Positive; not robust in all specifications	Harrison (1996)
Trade share in GDP	150	1985	Positive	Frankel and Romer (1999)
Trade share in GDP	23 to 62	1913-90	Positive	Irwin and Tervis (2002)
Trade share (within country regression)	About 100	1980s-90s	Positive	Dollar and Kraay (2001)
Changes in trade share in GDP	About 100	1980s-90s	Positive	Dollar and Kraay (2004)
Trade shares in GDP	>100	1970-97	Positive	Yanikkaya (2003)
Trade shares in GDP	about 100	1961-2000	Positive	Lee, Ricci, Rigobon (2004)
Trade share in GDP	China	1978-98	Ambiguous: positive for coastal provinces but negative for inland provinces.	Jin (2004)
Trade share in GDP	>100	2000	Negative for heavily regulated economies Positive once controlled for the effect of domestic regulation	Bolaky and Freund (2004)
Trade share in GDP	82	1960-200	Positive if certain complementary reforms are undertaken	Chang et al. (2005)
<i>II. Trade barriers and measures of price distortion</i>				
Black market premium	51		Negative	Harrison (1996)
Black market premium	about 100	1961-2000	Negative	Lee, Ricci, Rigobon (2004)
Export taxes as a percentage of exports	>100	1970-97	Ambiguous	Yanikkaya (2003)
Import duties as a percentage of imports	>100	1970-97	Positive correlation between tariff and growth	Yanikkaya (2003)
Import tariff	10	1875-1914	Positive correlation between tariff and growth	O'Rourke (2000)
Import tariff	35	1865-1990	Negative correlation between tariff and growth after WWII but positive before	Clemens and Williamson (2001)
Taxes on international trade	>100	1970-97	Ambiguous	Yanikkaya (2003)
Taxes on international trade	about 100	1961-2000	Negative	Lee, Ricci, Rigobon (2004)
Current account restrictions	>100	1970-97	Negative but not significant	Yanikkaya (2003)
2 measures of price distortion	28		Ambiguous	Harrison (1996)
Price and exchange rate volatility	95	1976-85	Negative impact of trade distortions and ER volatility	Dollar (1992)
<i>III. Indexes aggregating several measures of openness</i>				
Sachs and Warner Index	111	1970-89	Positive (raises growth of GDP per capita)	Sachs and Warner (1995)
Sachs and Warner Index	111	1970-89	Positive	Wacziarg and Welch (2003)
Sachs and Warner Index	141	1990-98	Not significant	Wacziarg and Welch (2003)
Sachs and Warner Index	73	1975-93	Positive	Greenaway et al. (1998)
7 measures of openness (openness and trade barriers)	17 to 51	1960-87	Half measures robust; Positive for robust measures	Harrison (1996)
<i>IV. Trade liberalization</i>				
Trade liberalization (from Michaely et al., 1991)	17	1960-84	Positive but not robust in all specifications	Harrison (1996)
Trade Liberalization (from Thomas et al., 1991)	28	1978-88	Ambiguous	Harrison (1996)
Trade liberalization (Panel; within country regression)	108 to 133	1950-98	Positive (Liberalization raises GDP growth and investment share).	Wacziarg and Welch (2003)
Trade Liberalization	22	Since mid-70s	Positive on export growth	Santos-Paulino & Thirlwal (2004)
Trade Liberalization (Dean et al. index and structural adjustment program)	73	1975-93	Positive	Greenaway et al. (1998)

Source: Hallaert (2006).

11. In sum, there is a strong economic justification for the objective of the Aid for Trade Initiative to promote expansion of trade. Trade expansion is positively associated with economic growth. Trade expansion also appears positively associated with poverty reduction. To the extent that trade contributes to growth, it will also provide opportunities, indirectly, for poverty reduction. Although it is difficult to reach an unambiguous conclusion because the causes and expressions of poverty differ across countries, empirical evidence broadly supports the strong presumption from theory that trade liberalization reduces poverty in the long run and on average (Ben-David *et al.*, 1999; Winters *et al.*, 2004; and OECD, 2009).

Moreover, “all countries that have had major reductions in income poverty have made use of international trade” (World Bank, 2001).

12. Another conclusion from the literature is that the economic growth response to trade expansion varies significantly across countries. This is a crucial point for the Aid for Trade Initiative because it suggests that there are binding constraints that can limit the transmission from trade expansion to economic growth. As will be argued in Section Three, an effective aid-for-trade intervention should identify and address these binding constraints.

## 2.2 *Diversifying Exports*

13. Export diversification is another common objective in aid-for-trade interventions that uses trade as a lever for poverty reduction and economic growth. Al-Marhubi (2000) showed that countries with a higher product diversification grew significantly faster during the period 1961-88. He also found that, for developing countries, export diversification affects growth both directly and indirectly by stimulating the accumulation of capital.<sup>7</sup>

14. Literature suggests that export diversification stimulates economic growth for two main reasons. First, it reduces the vulnerability associated with a high concentration of exports. Second, it is associated with positive externalities.

15. Export concentration is a source of instability in export earnings.<sup>8</sup> The more a country’s exports are concentrated, the more the change in the price of one product affects its terms of trade (Jansen, 2004) and its exports earnings (Love, 1986). This instability in export earnings makes domestic demand unstable and investment more risky and, thus, may reduce economic growth (Ghosh and Ostry, 1994, Dawe, 1996, Bleaney and Greenaway, 2001, Collier and Dehn, 2001, and Guillaumont and Chauvet, 2001).

16. It is important to distinguish export product concentration from geographical concentration as the vulnerabilities come from different sources can be different. Product concentration of exports is a source of vulnerability because, for economies whose exports are concentrated in a few commodities, the change in price of one product can have far-reaching effects on the economy as a whole (Athukoralge and Huynh 1987, Gamberoni & Newfarmer, 2009; Hesse, 2008). The recent drop in commodity prices from their peak in 2008 illustrates this vulnerability. For example, economic growth in Mozambique is expected to reach 4.3% in 2009 after 6.8% in 2008 in large part due to the drop in aluminium prices. Aluminium accounts for about half of the country’s export receipts and 70% of the manufacturing sector’s output (IMF, 2009a). Similarly, the 60% collapse in copper prices in the second half of 2008 created severe imbalances in both the fiscal and external accounts of Mongolia. Fiscal revenues have fallen by 10% of GDP and the IMF projects that exports proceeds will decline in 2009 by almost one-third and that economic will fall from 9% in 2008 to 2.7% in 2009 (IMF, 2009b).

17. Geographical concentration of exports is another a source of vulnerability, as the change in business cycle, policies or regulations of the main trading partner will have a more pronounced effect on exports and on the external balance. However, empirical investigation of the role of geographical concentration of exports on exports earnings instability has remained inconclusive and is less robust than the role of product concentration (Athukoralge and Huynh, 1987). This does not mean that a geographical diversification of exports should not be sought, because if it does not appear to foster growth by reducing the instability of

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<sup>7</sup> Additional empirical evidence on the impact of export concentration/diversification on growth can be found among others in de Ferranti *et al.* (2002), Gylfason (2004), Hesse (2008), Lederman and Maloney (2007), Sachs and Warner (1995).

<sup>8</sup> See Athukoralge and Huynh (1987) for a survey.

exports earnings, it can boost growth through export expansion. As discussed below, geographical diversification of exports has been an important source (and a more important source than product differentiation) of developing countries export growth.

18. Export diversification can also foster economic growth because of positive externalities (Emery, 1967; Feder, 1983). First, export diversification generates positive externalities on the rest of the economy as exporters learn from competition in world markets. In other words, there are knowledge spillovers. Second, growth in different components of exports can have different effects on economic growth.

19. The importance of the knowledge spillover is particularly clear in a much studied case of successful export diversification: Chile.<sup>9</sup> Herzer and Nowak-Lehmann (2006) as well as de Piñeres and Ferrantino (1997) showed that the substantial impact of export diversification on Chile's economic growth is explained more by the knowledge spillovers than by the diversification into industrial exports.

20. The idea that growth in different components of exports has different effects on economic growth is related to the fact that the main channels by which trade affects growth is productivity. The reasons for which trade increases productivity and the sources (trade increases incentives to invest, increases the exploitation of size economies, improves the availability of high productivity imported inputs, etc.)<sup>10</sup> are more likely to be associated with manufactures exports than agricultural exports. This idea has found support in many empirical studies such as Greenaway *et al.* (1999), Balassa (1985), Fosu (1996), Kavoussi (1984), and Tyler (1981).

21. Moreover, recent empirical literature also suggests that export diversification is an inherent feature of economic development. Johnson *et al.* (2007) showed that almost all countries that have experienced a sustained period of growth since World War II have seen a large increase in their share of manufacturing production and manufacturing exports. Timmer and Akkus (2008) also showed that the rising share of urban economic activity in industry and modern services is a feature of the structural transformation experienced by all successful developing countries. More formally, Imbs and Wacziarg (2003) found that production and employment concentration follow a U-shaped pattern. Countries first diversify and "there exists, relatively late in the development process, a point at which they start specializing again." Cadot *et al.* (2007), found the same pattern for export diversification. The turning point is very late in the development process and suggests that the development of both low and middle income countries is accompanied by a diversification of exported products.

22. Aid for Trade can facilitate product diversification in supporting trade reform and in tackling the binding constraints that prevent the emergence of new exports. In its review of 45 countries that benefited from the World Bank trade support, the World Bank Independent Evaluation Group (2006) concluded that, following trade reform, trade diversification occurred in most regions although it was uneven across countries and rather limited in some regions such as Africa. Cadot *et al.* (2007) find some preliminary evidence that public infrastructure (telephone, railroad, and road), one of the main targets of aid-for-trade flows,<sup>11</sup> contributes to export diversification.

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<sup>9</sup> Other cases of successful export diversification include Malaysia, Thailand, and Uganda. See Bonaglia and Fukasaku (2003), Chandra *et al.* (2007), and Hesse (2008).

<sup>10</sup> See Berg and Krueger (2003), Hallaert (2006), and Winters (2004) for a survey. Many case studies find evidence on the impact of trade liberalization and productivity growth driven by reallocations of resources. To name a few, Tybout and Westbrook (1995) on Mexico, Aw *et al.* (2000) on Taiwan, and Pavcnik (2002) on Chile.

<sup>11</sup> In 2007, most aid-for-trade flows were directed at addressing infrastructures needs (OECD/WTO, 2009).

23. Aid for Trade can also help developing countries diversify their exports markets because it targets some important determinants of geographical diversification: export costs, tariffs, and international transport costs. Shepherd (2008) showed that a 10% reduction in any of these factors produces a 5 to 6% increase in the number of foreign markets entered by developing countries. Brenton and Newfarmer (2007) estimate that diversification into new products and new geographic markets explained more than 19% of total export growth of developing countries over the period 1995-2004.<sup>12</sup> Geographical diversification appears to be more important than product diversification: exports of existing products to new markets accounted for about 18% of total export growth while product diversification (exports of new products) contributed to just 1% of growth. Evenett and Venables (2002) found that about one third of 23 developing countries growth over the period 1970-1997 was caused by geographical diversification.

24. It is important to clarify the implications of the role of export diversification on growth and development for policies and aid-for-trade projects. As pointed by Massell (1970), export diversification depends on “fundamental matters” such as comparative advantage. If policies and projects aiming at diversifying exports result in shifting resources into substantially less productive uses, the cost will be large and may dampen the benefits of diversification. Therefore, aid-for-trade projects and policies aiming at diversifying exports should not seek export diversification for its own sake ignoring “fundamentals” but rather aim at tackling the constraints that prevent a diversification consistent with evolving comparative advantages.

### **2.3 Maximizing the Linkages with the Domestic Economy**

25. Maximizing the linkages with the domestic economy is related to the question regarding the impact of increasing or diversifying exports (or more generally trade) on the non-tradable part of the economy. The impact of trade on the non-tradable part of the economy can be large. Fosu (1996) estimated, for a sample of 76 least developed countries during the period 1967-86, that a one percentage point increase in the average annual growth of real exports of goods and services increased the annual real GDP growth of 0.30 percentage point and annual real non-export GDP growth of 0.17 percentage point.

26. However, all exports do not have the same impact on the rest of the economy. Supporting the assumption that most of the channels through which productivity gains may be achieved are likely to apply primarily in the production of manufactures. Fosu (1996) showed that exports of manufactured goods explain the positive impact of exports on the nonexport GDP, while exports of the primary sector have an insignificant impact. Fosu interpreted this result by the fact that “the little amount of processing characteristic of primary export economy is such that it is likely to exhibit weak forward and backward linkages.”

27. As a result, all exports do not have the same impact on poverty reduction. Winters *et al.* (2004) summarizes the issue as follows: “the effects of trade liberalization on wages and employment are complex to predict in detail. Although liberalization will often raise the demand for relatively unskilled workers in many developing countries and so, on average, be poverty alleviating, there will also be important exceptions, *e.g.* possibly where natural resources dominate exports and where out-sourcing is important-as well as cases where segmented import-competing sectors suffer adverse shocks.”

28. For example, over the past decade, Mozambique’s economic growth averaged almost 8%. It was sustained by investment financed by large aid and FDI inflows, mainly into the natural resource sector and in the production of aluminium. Both sectors are capital-intensive and their production is exported. As a result, the share of merchandise exports in GDP more than tripled, to nearly 30% of GDP. However, growth has been unevenly distributed and, although the national poverty headcount fell from 69% in 1997

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<sup>12</sup> Hummels and Klenow (2005) and Pham and Martin (2007) find that diversification explains a much larger share of export growth.

to 54% in 2003, poverty may have increased in recent years, particularly in rural areas (IMF, 2009a). Moreover, aid and FDI flows in Mozambique contributed to an appreciation of currency in real effective terms, which affected the more labor-intensive traditional exports and reinforced the export concentration. Examples of the impact of inflows on the real effective exchange rate are numerous and are well known as “Dutch disease.”<sup>13</sup> This is not unavoidable though. For example, a rapid increase in aid flows for building infrastructure may not trigger an appreciation of the exchange rate if the import content is large. This was the case in Ethiopia (IMF, 2006).

29. This points to the fact that substantial additional inflows of aid, as part of Aid for Trade should be carefully designed and take into account absorption capacity and spending in order to prevent a Dutch disease that will play against the objectives of the initiative: such as export diversification and poverty reduction.<sup>14</sup> This issue will be part of the future work on good practices in aid for Trade.

#### **2.4 Increasing Adjustment Capacity**

30. Reallocating resources toward more efficient uses is a prerequisite for sustained economic growth and development.<sup>15</sup> Similarly, increasing and/or diversifying exports in order to benefit from opportunities opened by improved market access require a reallocation of domestic resources. Finally, the gains from a country’s own liberalization also imply a reallocation of resources.

31. However, all countries do not have the same capacity to adjust *i.e.* to reallocate its scarce resources. This difference in capacity to adjust will affect the growth response to the trade reform. Recognizing that adjustment capacity is limited in many poor countries and therefore have difficulties to seize the opportunity from improved market access, the Task Force on Aid for Trade (WTO, 2006b) has made “trade-related adjustment” part of the Aid for Trade Initiative.<sup>16</sup>

32. In order to facilitate a structural adjustment, the empirical literature stresses the need for complementary policies (macroeconomic policies, labor market policies, education policies, regulatory framework, infrastructure, etc.). An OECD study (2005) provides details on trade-related structural adjustment and examines in detail how to facilitate it.<sup>17</sup> It argues that “The combined effect of complementary policies will be greater than the sum of the parts [...]. The key to successful structural adjustment lays less in individual policies than in their interaction.” It also points to the need to have a

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<sup>13</sup> See for example Madagascar where two big mining projects accounting for more than half of GDP over three years (IMF, 2007) triggered a substantial real effective appreciation that caused difficulties to the labor-intensive and export-oriented garment industry.

<sup>14</sup> Aid absorption is defined as the extent to which a country’s non-aid current account deficit widens in response to an increase in aid inflows. Spending is defined as the widening in the government fiscal deficit net of aid that accompanies an increase in aid.

<sup>15</sup> In Timmer and Akkus (2008) words: “structural transformation is the defining characteristic of the development process.”

<sup>16</sup> This includes “Supporting developing countries to put in place accompanying measures that assist them to benefit from liberalized trade.”

<sup>17</sup> For more details, see Hallaert (2006) who reviews the empirical literature of complementary policies aimed at supporting trade liberalization; Keen and Ligthart (2002) who discuss how to address the fiscal revenue shortfall from trade liberalization; and Timmer and Akkus (2008) who emphasize the role of education policy.

proper sequencing to coordinate the complementary policies because gains from trade and adjustment costs happen at different time.<sup>18</sup>

33. Moreover, complementary policies may be needed to prevent a policy reversal that may be due to an impact of trade reform that is politically, economically or socially unsustainable. For example, Ebrill *et al.* (1999) documented that trade liberalization has been in some cases reversed because of a lack of accompanying fiscal revenue reform. However, facilitating reallocation of resources and implementing adequate complementary policies in the right sequence raises serious challenges that may prove particularly acute for developing countries. At the same time, these issues are crucial for Aid for Trade to be effective. Thus, they will be discussed in the planned work on good practices in Aid for Trade.

34. Another dimension of complementary policies is relevant in the context of Aid for Trade. There is mounting evidence that complementary policies result in an increased impact of trade on growth. Dufrénot *et al.* (2009) show that there is little evidence of a statistically significant impact of trade openness on economic growth during the period 1980-95 but a strong and robust one in the period 1996-2000. Their interpretation was that trade liberalization was complemented by other policies in the second period but not in the first. They argue that in the second period “trade policies were complemented by reforms putting a stronger focus on other macroeconomic and social policies including productivity-boosting reforms, spending on social programs, improving the investment climate, and the strengthening of institutions.”

35. Although there is empirical evidence that trade helps reducing poverty on average, it also implies adjustment and thus has distributional implications. The impact of trade and trade liberalization on poverty will thus differ among sections of the community – there will be winners and losers – and drawing benefits from greater market openness will depend on policy settings and complementary policies. The ability of poor women and men to participate in the gains from trade depends on several factors, including: i) how much of the trade-induced growth occurs in sectors where a large number of the poor are economically active; ii) how much of that growth translates into job creation and wage increase; iii) how much growth trickles down to other sectors that can absorb excess labor; and, iv) how well the poor are equipped (in terms of human, economic and financial assets) to take advantage of the new job opportunities resulting from trade (Ben-David *et al.*, 1999; World Bank, 2001; Winters *et al.* 2004; and OECD, 2009).

36. This section has shown that the four most common objectives of aid-for-trade projects (increasing trade, diversifying exports, maximizing the linkages with the domestic economy, and increasing adjustment capacity) have a strong economic underpinning. Empirical literature shows that reaching these objectives has contributed to higher economic growth and poverty reduction in developing countries. However, a long list of supply-side constraints can thwart the realization of any of these objectives.

### **3. Addressing the Binding Constraints: The Role of Aid for Trade**

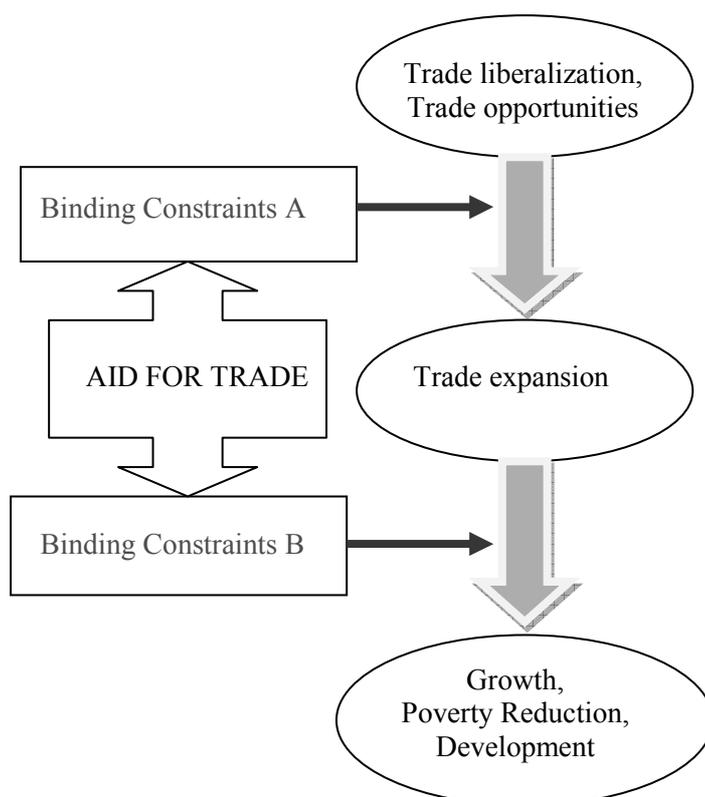
37. Aid for Trade aims at alleviating the supply-side constraints that prevent developing countries from reaching the objectives described in the previous section and thus “to benefit from liberalized trade and increased market access” (WTO, 2006b). These are the constraints contained in the block marked “Binding Constraints A” in Figure 1.

38. Addressing these types of binding constraints is a prerequisite: trade cannot be used as a tool for boosting growth and reducing poverty if trade cannot expand. Thus, not surprisingly, these binding constraints attract most of the attention under the Aid for Trade Initiative. For example, in the survey

<sup>18</sup> The role of complementary policies is even clearer when one considers, following Banks and Tumlir, (1986) that adjustment costs are not so much the result from the need to adjust but the results of market imperfections that appropriate complementary policies can address.

conducted for the “Aid for Trade at a Glance 2009 – Maintaining Momentum” publication (OECD/WTO, 2009), developing countries identified “similar binding constraints. The most common are i) network infrastructure; ii) competitiveness; iii) export diversification; and iv) trade policy analysis, negotiation and implementation.” For these reasons, this paper focuses on the binding constraints limiting the capacity to expand trade. However, there are also binding constraints that limit the impact of trade expansion on economic growth and poverty (“Binding Constraints B” in Figure 1). These binding constraints explain another key finding of literature: the growth response to trade expansion differs significantly across countries. The main transmission channels from trade expansion to economic growth are investment and productivity gains. However, in many countries, the business environment and other constraints may limit the incentives to invest and to improve productivity.<sup>19</sup>

**Figure 1. Causality chain in Aid for Trade and binding constraints**



39. This second type of constraints is crucial. Aid for Trade does not aim at expanding trade *per se*. Rather, it intends to use trade as a “tool of development” (WTO, 2006b) to foster growth, reduce poverty, and more broadly help development. This causality chain, illustrated in Figure 1, is clearly stated in the rationale of the Aid for Trade Initiative as described by the Task Force on Aid for Trade: “Aid for Trade is

<sup>19</sup> Binding constraints limiting the impact of trade expansion on economic growth will be addressed in future work. It will be among the issues addressed in the series of policy guidance on best practices foreseen in the Joint DAC-TC Programme of Work and Budget on Aid for Trade [COM/DCD/TAD(2008)7]. A more comprehensive work could be part of the activities under the Programme of Work and Budget 2011-12. Moreover, taxonomy of recipients would highlight the binding constraints of different country groups. Binding constraints are different for different recipients but, at the same time, countries in similar circumstances may face similar constraints, *i.e.* landlocked, small and vulnerable economies, commodity exporters, etc. For these various groups, the taxonomy would aim at identifying the binding constraints affecting trade performance and growth.

about assisting developing countries to increase exports of goods and services, to integrate into the multilateral trading system, and to benefit from liberalized trade and increased market access. Effective Aid for Trade will enhance growth prospects and reduce poverty in developing countries, as well as complement multilateral trade reforms and distribute the global benefits more equitably across and within developing countries.” Moreover, the first objective the Task Force on Aid for Trade sets to operationalize the initiative is “to enable developing countries, particularly LDCs, to use trade more effectively to promote growth, development and poverty reduction and to achieve their development objectives, including the Millennium Development Goals (MDGs)” (WTO, 2006b).

40. As detailed in the previous section, there is ample empirical evidence that trade expansion does foster economic growth. However, the same literature has also shown that the growth response to trade expansion and trade reform varies significantly across countries (see among many others, Rodrik, 1998; Wacziarg and Welch, 2003; Bolaky and Freund, 2004, Chang *et al.*, 2005; the World Bank Independent Evaluation Group, 2006; and Dufrénot *et al.*, 2009). For example, Rodrik (1998) showed that over the period 1964-94, trade policy in Sub-Saharan Africa had the same impact on exports and trade performance than anywhere else in the world but that the effects of trade policy on economic growth seem to be indirect and more modest. Dufrénot *et al.* (2009) found that the growth impact of trade openness is bigger on developing countries with low economic growth than on developing countries with high economic growth. Trying to explain this result, the authors looked at the characteristics of low growth countries and found that they have a high export concentration ratio and a low share of manufacturing sector in GDP; an obviously interesting observation in light of the discussion in the previous section.

41. The difference across countries in the growth response to trade expansion suggests that some countries may face binding constraints that limit the impact of trade and economic growth. The trade and growth literature has shown that trade does not affect growth directly but through transmission channels. Many transmission channels have been identified but the most commonly mentioned are investment and productivity.<sup>20</sup>

42. Many factors can affect the functioning of these transmission channels. They include macroeconomic instability, financial constraints, financial sector development, limited labor skills, and the impact of many policies that affect the business environment and the reallocation of resources. Drawing lessons from reforms undertaken in the 1990s, the World Bank (2005) summarizes the issues as follow: “Trade is an opportunity, not a guarantee. While trade reforms can help accelerate integration in the world economy and strengthen an effective growth strategy, they cannot ensure its success. *Other elements that address binding constraints to growth are needed*, possibly including sound macroeconomic management, trade-related infrastructure and institutions, and economy wide investments in human capital and infrastructure” (emphasis added). Many of these “other elements” fall in the scope of the aid-for-trade agenda and their nature suggests that they should be addressed by complementary policies to the trade reform.<sup>21</sup>

43. It should be noted that in some cases, binding constraints that prevent exploiting the opportunities of liberalized trade are also constraints that block the transmission channels between trade and growth. For example policies that affect negatively the business environment can deter firms to export (they are thus a binding constraint B) and to invest (and are thus a binding constraint A). These potential synergies should be taken into account in the design of aid-for-trade projects.

<sup>20</sup> For more details on the impact of trade on productivity see, among others, Berg and Krueger (2003), Edwards (1998), Hallaert (2006), Harrisson (1996), Tybout (2000), and Winters (2004).

<sup>21</sup> The previous section focused on the part of the trade and growth literature that highlight the role of trade flows (“outcome” variables) on growth. A more recent literature focused on the impact of policy variables on growth. It is this more-recent part of the analytical work between trade and growth that is relevant here. The complementary policies identified by the trade and growth literature are surveyed in Hallaert (2006).

#### 4. The Diagnostic Tools

44. The list of constraints that prevent a country to expand trade is often very long. Thus, there is a need to identify the most binding constraints and prioritize the reforms. This section discusses the tools available to do so. It focuses on the tools relevant to identify the most binding constraints to the four objectives described in the Section two. Other objectives may require other tools.

45. Many diagnostics have already been undertaken. They have shown that developing countries' trade-related needs are numerous and multi-faceted. The list of needs is so long that it could affect the implementation of aid projects if no prioritization is undertaken. In fact some developing countries argue that few diagnostic studies have resulted in actual programs and projects and the 2008 Accra Agenda for Action emphasizes that donors should be practical about planning. If consensus about the perfect plan remains elusive, donor should be prepared to start implementation, measure results and improve the project through continued feedback loops

46. It is usually unrealistic to address all needs and implement all required reforms simultaneously, both for political economy and financial reasons. Political capital for reform is at least as scarce as financial resources and both should be invested where maximum impact can be expected. Thus, rather than indiscriminately tackling a country's laundry list of needs, the focus should be on identifying and tackling first the most binding constraints *i.e.* addressing first those that can have the greatest impact on expanding trade and promoting economic growth. Good sequencing of reforms and projects are critical in the design and implementation of effective aid-for-trade interventions. This was one of the main messages from the 2008 OECD Policy Dialogue on Aid for Trade (Evenett, 2008).<sup>22</sup>

47. At this stage of the empirical and academic analysis, past experience cannot be a diagnostic tool in identifying binding constraints nor inform the design of new initiatives. Past experience could provide useful information on how projects identified and tackled (or not) binding constraints. However, information is scant on the effectiveness of previous Aid for Trade Initiatives.

48. Unfortunately, there is no standard method to identify the most binding constraints. As distinct situations and conditions arise for each country, needed reforms are as diverse as the problems themselves. That said, there are several approaches to the binding constraint identification process that can provide useful insight. This section presents some of the tools and methods most commonly used. In particular, it discusses the pros and cons of stakeholder consultation, benchmarking, DTIS method, and value chain analysis. It also proposes a trade adjusted version of the growth diagnostics developed by Hausmann *et al.* (2005) to identify binding constraints to economic growth. The trade adjusted version of the growth diagnostics focuses on identifying constraints to trade expansion and combines other approaches such as stakeholder consultation, benchmarking, and the DTIS to benefit from the insight of each. Indeed, as each tool or method approaches the identification of binding constraints from a different angle, a combination of these approaches is appropriate in most cases.

##### 4.1 Stakeholder Consultation

49. Stakeholder consultation is about asking the constrained about the constraints. It has long been acknowledged as best practice in trade capacity building (OECD, 2001) and is crucial to increase genuine local ownership, which is required to maintain momentum in Aid for Trade (OECD/WTO, 2009), and to

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<sup>22</sup> The most binding constraints change over time and with the implementation of reforms and aid-for-trade projects. Identifying the most binding constraints and prioritizing the reform is thus, by nature, a dynamic process. A dynamic process is important to maximize the aid-for-trade intervention outcomes. As such it is consistent with the MfR approach (see scoping paper "Managing for Results in Aid for Trade" [COM/DCD/TAD(2009)4]).

make Aid for Trade effective (WTO, 2006b). Private and public sector organizations, non-governmental organizations, and academic stakeholders can provide diverse insights into practical details of an issue. The stakeholders' insider knowledge and relationships are invaluable resources and essential elements for uncovering and prioritizing the most critical constraints to trade expansion. For that reason, stakeholders should be consulted, from the early stages of the project formulation to the final stages of the evaluation process. Involvement of stakeholders from early stages fosters ownership, thus ensuring a higher probability of the implementation of recommendations to tackle the binding constraints in later stages.<sup>23</sup>

50. To achieve regular and effective dialogue, formal and informal consultation channels should be strengthened and enhanced. In practical terms, this can take several forms. Official contact points, for example, should be established within labor organizations, private sector organizations, and other stakeholder groups. Contact points can organize consultation sessions and facilitate the disbursement of questionnaires, for example. While resource-intensive, questionnaires are an extremely useful tool in the identification stage, asking the right questions is a challenging task, but dialogue with the stakeholders is particularly useful for this. Logically, as constraints voiced in a single interview offer insight in the identification process, even greater value and reliance can be taken from questionnaire responses from a wide range of recipients.

51. The private sector has an interest in the removal of binding constraints it faces and, thus, should be receptive to developing a consultation process. Against this background, Business Membership Organizations can be a useful intermediary institution between the private sector serving both as beneficiaries as well as facilitators of aid-for-trade interventions (Agboghroma *et al.*, 2009). However, while recognizing that the private sector and other stakeholders are an invaluable source of information of what is happening on the ground, and that they deserve to be consulted as the ultimate target group of any aid-for-trade intervention, it is important to consider the risk of biasing the analysis when using stakeholder consultations to identify binding constraints and formulate aid-for-trade interventions.

52. The first main source of consultation bias is the lack of comprehensive representation of all concerned stakeholders. In many developing countries, the formal private sector is often very small and unorganized. Thus they do not have representatives that can speak on their behalf. Moreover, many countries have a large informal sector, for which it can be very difficult to set up representative contact points. Nonetheless, the heterogeneity of the experiences shows the importance of consulting the gamut of stakeholders and of taking into account, *inter alia*, the nature of regulation enforcement, "gender perspective" (2006b), and the diverse strategies taken by firms to deal with officials.

53. The second main source of bias is the inherent subjectivity of those consulted. While the objective of the aid-for-trade interventions may be to expand trade and its impact on the economy, firms typically offer a limited angle in interviews. For example, incumbent firms can have a vested interest in maintaining anti-competitive practices that might be restraining the spreading of the benefits of trade liberalization. Labor, business, and other non-governmental organizations are not always fully independent, particularly when state-controlled firms and/or informal political networks dominate the associations. Likewise, when the objective of the aid-for-trade intervention is the creation of new economic activity, rather than improving the performance of existing export sectors, the value of the information from existing private sector organizations may be more limited as they may not be independent or representative of the various target beneficiaries. This is an important point as in one of the few analysis of effectiveness of past trade assistance programs, Brenton and von Uexhull (2009) found that product specific export development programs are more effective (effectiveness is measured by export growth of the partner countries) where there is already significant export activity. The authors conclude that it may be that the constraints to the

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<sup>23</sup> International Finance Corporation (2007) provides good practices in stakeholder consultation and describes the benefits of the consultation as a continuous process.

growth of existing exports are easier to identify and alleviate in technical assistance projects than are the constraints to new exports.

54. A related problem is that asking the constrained is really asking the incumbents, *i.e.* those that have already adapted successfully to the existing constraints. There has been some debate on the value of perception for assessing the constraints and identifying the binding ones. Indeed, perception of critical binding constraints may not always correspond fully to “objective” reality. To put it in Hausmann and Velasco’s (2005) words if you are in the desert and interview camels about the investment climate you would get a very different idea about what the main problems are of living/working in a desert than if you could interview hippos who don’t live there. However, Gelb *et al.* (2007), using the World Bank’s Enterprise Surveys database for 26 Sub-Saharan African countries and almost 5,000 firms, show, there is a good correlation between the complaints of African businesses and objective indicators *i.e.* overall, firms discriminate between constraints in a reasonable way and that “adjusting to a constraint does not mean that firms do not recognize it—for example, generator-owning firms are not distinguishable from other firms when ranking electricity as a constraint.”

55. In short, stakeholder consultation, particularly with the private sector, is an invaluable tool to collect information on the binding constraints to improving trade performance, assess progress, and evaluate and increase accountability. It is also a key process in order to achieve an important target of Aid for Trade: local ownership. However, because of its limitations, the role of stakeholder consultation in determining the design of aid-for-trade interventions and the priorities for reforms should be complemented by other tools.

#### 4.2 *Benchmarking*

56. Benchmarking is a second diagnostic tool that can help identify the domestic binding constraints. The number of cross-country indicators available has increased markedly, particularly thanks to the World Bank effort.<sup>24</sup>

57. These indicators help policy makers to compare their country’s performance with the performance of other countries. In broad terms, international comparisons are extremely helpful to distinguish country specific factors from more general determinants of export performance. For example, an indicator such as a change in the share of the world market in a given commodity would provide a quick and relatively reliable picture of this country’s competitiveness in that sector, independent of the evolution of world prices in that same sector, and would enable policy makers to quickly identify good and poor performers.

58. These indicators also provide researchers and practitioners with a wealth of data to assess the determinants of trade performance and identifying developing countries binding constraints. For example, Johnson *et al.* (2007) used various benchmark indicators to evaluate potential constraints on sustained growth for sub-Saharan Africa. They found that addressing institutions that affects the cost of exporting and the level of the real exchange rate (*i.e.* the need to avoid overvaluation) are two key elements for a development strategy based on expanding exports of manufactures.

59. Gamberoni and Newfarmer (2009) provide a good illustration of the benchmarking approach applied to Aid for Trade. Their cross-sectional analysis for 2006 show that developing countries capacity constraints as measured by five benchmark indicators (reflecting transport infrastructure, customs efficiency and trade policy restrictiveness) have a strong effect on several measures of export performance (such as export growth and export concentration). The use of benchmark indicators allows a comparison of each country’s trade performance and trade capacity constraints with other developing countries in the

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<sup>24</sup> To name a few: Logistics Performance Index, Overall Trade Restrictiveness Indices, Governance indicators, Costs of Doing Business, and World Trade Indicators.

sample. Arguing that poor trade performance and relatively low capacity are two reasons why countries might need aid-for-trade assistance, Gamberoni and Newfarmer rank countries across the ten trade performance and capacity indicators they used in the regression to measure each country potential “demand” for aid-for-trade projects. As the indicators reflect activities that fall in the mandate of Aid for Trade and the trade performance objectives match those of the Aid for Trade, it provides a strong support to the initiative.

60. The benchmarking approach is useful in comparing a country’s performance with those of other countries (although some caution is needed as some indicators, in particularly those based on surveys may not be fully comparable) or for cross-sectional analysis, but is more limited at a country level, *i.e.* identifying the most binding constraints among the many constraints faced by a specific countries. Another limitation to the approach is data availability. In particular, while most indicators cover a large number of countries, they usually do not provide the evolution of the indicators over times. This is problematic for the identification of the current binding constraints and their impact on the trade performance at the country level.

61. As a result, of these limitations, although the perspective gained through benchmarks is useful, benchmarking is probably better employed as a confirmation tool for constraints identified by other methods and in conjunction with other identification approaches. Benchmarking can also provide a useful counterpoint to other sources of information and analysis and be a means to measure the progress achieved.

#### **4.3 The Diagnostic Trade Integration Studies Method**

62. The DTIS follows a template designed by the Integrated Framework in order to identify LDCs trade-related needs that will help countries to integrate the multilateral system. It results in a country-specific report and in an action matrix that serve as a basis for policy recommendations and Trade Related Technical Assistance and Capacity Building. As of early 2009, 35 countries had validated their diagnostic studies and action matrix lists.<sup>25</sup>

63. As the DTIS should take into account each country’s specificities, it should be tailor made. Therefore, the template provides “an illustrative but not prescriptive overview of the issues to be covered” in the DTIS (Integrated Framework, 2008). “However, there are certain areas that have been identified as important constraints for the integration of LDCs into the multilateral trading system. These areas will probably be reflected, in one form or other, in the integration studies” (UNCTAD, 2005). This list of areas is large, given the multi-faceted nature of trade, the numerous trade-related needs faced by LDCs, and the broad set of objectives of the DTIS (“assesses the overall competitiveness of a country’s economy, identifies sectors of greatest export potential, outlines constraints to trade” – UNCTAD, 2005). In general, the areas covered are:

- The country’s economic and export performance, macroeconomic environment, investment climate and institutional issues;
- The international policy environment and specific constraints that exporters face, such as trade barriers;
- Challenges in meeting product standards, including sanitary and phytosanitary measures;
- Transport and trade facilitation needs;

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<sup>25</sup> The template and the process are described in Integrated Framework (2008) and <http://www.integratedframework.org/about.htm>. The DTIS reports are posted on the IF website at <http://www.integratedframework.org/doctype/dtis.htm>.

- An assessment of a small number of key sectors believed to have significant potential for expansion in output, including an assessment of national capacity (public and private) to formulate and implement trade policy; and
- A pro-poor trade integration strategy.

64. As a result, the report and the action matrix are quite long and there is a clear need to prioritize the needs identified. It was initially assumed that the prioritization would be done during the so-called validation workshops convened by the Government in order to discuss the findings and the action matrix<sup>26</sup> and attended by relevant key stakeholders among government officials, private sector and civil society as well as representatives of EIF agencies and the donor community.

65. However, as recognized by the DTIS Explanatory Note (Integrated framework, 2008), “the main challenge of future DTISs/DTIS updates is the prioritization of topics to be discussed in the studies and to be covered in the Action Matrix.” Despite the wealth of the analysis and inclusiveness of the process, the recommendations emerging from the action matrixes have not always been followed up either by the governments or by donors. The failure to follow up can be attributed, at least in part, to the structure of the template and the process that are more conducive to the identification of overall needs rather than the identification of the binding constraints. The action matrixes are often laundry lists, daunting in scope, which are then presented to all the different stakeholders to be reduced to a more manageable size. While consultation and dialogue with national stakeholders is essential, it is also easy to imagine how, in the absence of an approach that ranks priorities in terms of impacts, such consultations can yield a choice that elects the less threatening interventions to the special interests present in the consultation.

66. As they stand, the DTISs are thus a useful first step that “can provide building blocks for [the] prioritization process” (Integrated Framework, 2008); building blocks that will help in the identification of the main binding constraints to trade expansion. Based on the DTIS, UNDP has developed a guide to conduct aid for trade needs assessments (UNDP, 2008). The trade needs assessment report resulting from using this guide are intended to identify a set of policy recommendations and assistance needs aimed at improving the contribution of trade to human development and poverty reduction. While the human development perspective should be reflected throughout the assessment, practical and operational recommendations should be established on a sector-by-sector basis. In addition, quantitative tools and methods to address these issues - such as sector assessments including value chain analysis and trade policy impact assessments are also included in the guide.

#### **4.4 A Sectoral Approach: The Value Chain Analysis**

67. Value Chain Analysis (VCA) is receiving growing attention from donors and developing countries as an alternative tool for identifying binding constraints and how Aid for Trade can be best utilized. For example, in a communication to the Task Force on Aid for Trade, the Delegation of Zambia, on behalf of the LDC Group, noted “Value Chain Analysis is one of the tools that can be used to effectively pinpoint the needs and gaps that Aid for Trade Projects could focus on so as to deliver maximum value for the least possible costs in economies and Developing and Least developed countries” (WTO, 2006a). The use of the VCA in the context of Aid for Trade is also a way to involve the private sector. This is important because, as mentioned by the Task Force on Aid-for-Trade, “as actors in the field, private enterprises are well placed to identify trade-related problems and bottlenecks. An increased dialogue between the public sector

<sup>26</sup> “Participants may wish to (i) discuss whether priorities set in the DTIS are consistent with the overall development agenda as articulated in the PRSP [Poverty Reduction Strategy Paper], and adjust them if necessary, (ii) review the measures articulated in the draft Action Matrix and agree on a well prioritized Matrix, (iii) ensure that the proposed actions are coherent with the PRS and are planned within the national budget and the medium-term expenditure framework” (UNCTAD, 2005).

and private entrepreneurs could improve effectiveness in assessing Aid-for-Trade needs, in diagnostics, and in implementation, as well as in evaluating effectiveness in implementation” (WTO, 2006a).

68. Traditionally, VCA was a tool for identifying the binding constraints to selected company’s growth and competitiveness, but it has since been applied to entire sectors by identifying areas of underperformance in a representative sample of companies. The value chain is mapped across the life of the product, from research and development to raw material sourcing to production to delivery to product disposal. Time and cost levels are recorded throughout in order to expose the areas where the company or sector is falling behind the competition. High time and cost levels suggest the presence of binding constraints and areas where greater value can be captured.

69. In the aid-for-trade context or at the national level, VCA can be used to identify where a country should decrease time or costs in order to improve competitiveness and achieve the objective of expanding trade. VCA would look for binding constraints from a unique angle, “identifying major bottlenecks that apply to each section of the value chain in the areas of physical infrastructure, logistics (including customs procedures and facilities, technical barriers to trade, such as standards for product quality and testing, certification processes, etc); other supporting services; business/ investment climate issues (policy and regulatory impediments, administrative requirements, etc.), and availability and cost of finance and skilled labor” (WTO, 2006a).

70. As argued by the ITC (2003), the VCA can also help (i) increase efficiencies within the existing national component of the value chain; (ii) identify parts of an existing international value chain that can be done by domestic companies; and (iii) identify new value chains that can be associated with an existing value chain (for example the waste of an existing industry can be used by another industry). This will contribute to identifying potential areas of export expansion and of export diversification.

71. In practice, VCA combines benchmarking and stakeholder consultation to assess competitiveness and identify binding constraints. Benchmarking is used along the various steps of the value chain to identify performance gaps in comparison with competitors. In-depth consultations with company owners, managers across the organization (marketing, finance, operations, etc.), as well as industry associations and government ministries can then provide a comprehensive picture of constraints causing the high time or cost levels.

72. However, there are two main limitations to the use of the VCA in the context of Aid for Trade.

- First, as VCA is performed at the sector level, the choice of the sector is crucial. Picking the winners is notoriously difficult and government can be captured or influenced by vested interests in their selection process. The DTIS sectoral analysis can inform the process but it should be noted that it faces the same problems in selecting the sectors. The Delegation of Zambia suggested that priority sectors could be identified by the government, selected from private sector proposals or identified through a cost-benefit analysis of new areas for investment (WTO, 2006a).
- Second, because it relies heavily on stakeholder consultation and benchmarking, the VCA shares the same limitations. The approach requires in-depth use of stakeholder consultation, capitalizing on the breadth of their market knowledge. This has the advantage of strengthening private sector’s interest and commitment to the aid-for-trade intervention strategy (ITC, 2003). However, relying on sectoral knowledge in a method initially designed to capture or retain more earnings from goods and services produced for exports, presents the risks of being captured by sectoral vested interests that aim at increasing their export earnings and profits rather than reaching the objectives set in Section two such as increasing trade. Stakeholder questions should be designed with this potential bias in mind. It is also important to select the right benchmarks and to identify an adequately representative pool of stakeholders for consultations.

73. While VCA identifies binding constraints at the sector level, these constraints often apply to the entire economy (although the question remains if the most binding constraints for one sector may or may not be the *most* binding constraints for the rest of the economy). Indeed, this approach can expose institutional, policy or infrastructure weaknesses that may also impact the economy as a whole (FIAS, 2007). As such, VCA is most useful when used in conjunction with other diagnostic tools to confirm constraints or to identify constraints that may have been overlooked.

#### 4.5 *Identifying the Most Binding Constraints: A Growth Diagnostics Adjusted for Trade*

74. The diagnostics tools discussed so far aim at identifying the trade-related needs. Because the needs are numerous in developing countries, it is crucial to identify the most binding constraints to trade expansion. This will guide the sequencing of reforms and of aid-for-trade interventions. If they address the most binding constraints their impact on trade expansion will be as large as possible. This section shows that a prioritization of reforms and aid-for-trade interventions can be achieved by combining the various diagnostics tools in an appropriate framework. Such a framework can be the Growth Diagnostics framework adjusted for trade.

75. Hausmann *et al.* (2005) developed the Growth Diagnostics framework in order to diagnose the binding constraints to economic growth and formulating growth strategies. Growth diagnostics is a useful method not only for identifying the most binding constraints to growth but also for sequencing reform priorities according to the marginal welfare benefit that could be achieved by reducing the market distortion.

76. The process can be illustrated with a decision tree, which guides a series of probing questions to identify the biggest impediment to higher growth (Figure 2). Hausmann *et al.* (2005) argue that “economic growth depends on the returns to accumulation (broadly constructed), their private appropriability, and on the cost of financing investment.” The first step is to identify which of the three constraints is the main impediment to growth. The next step is to identify the specific distortions underlying these constraints. If the main problem for growth is low levels of private investment, is this due to low return to economic activity or to the high cost of finance? If the reason is high costs of local finance, is that because of fiscal deficits and low domestic saving or because of poor intermediation? Answering these questions points to areas where a reform would have the biggest impact on growth. The process is thus one of gradual reforms. Once the most binding constraint has been addressed, the identification process can restart in order to identify the *next* most binding constraint.<sup>27</sup> With such a dynamic approach, the authors argue that the impact of the reform will be maximized.

77. Despite potential conceptual limitations and the implementation difficulties related to the need to have an in-depth knowledge of the country specific conditions and institutions as well as good data (Aghion and Durlauf, 2009; Leipziger and Zaghera, 2006), the Growth Diagnostics framework provides a relatively simple and appealing approach that has been applied to several countries.<sup>28</sup>

78. The rationale underpinning the Growth Diagnostics approach is very similar to the principles guiding this paper.

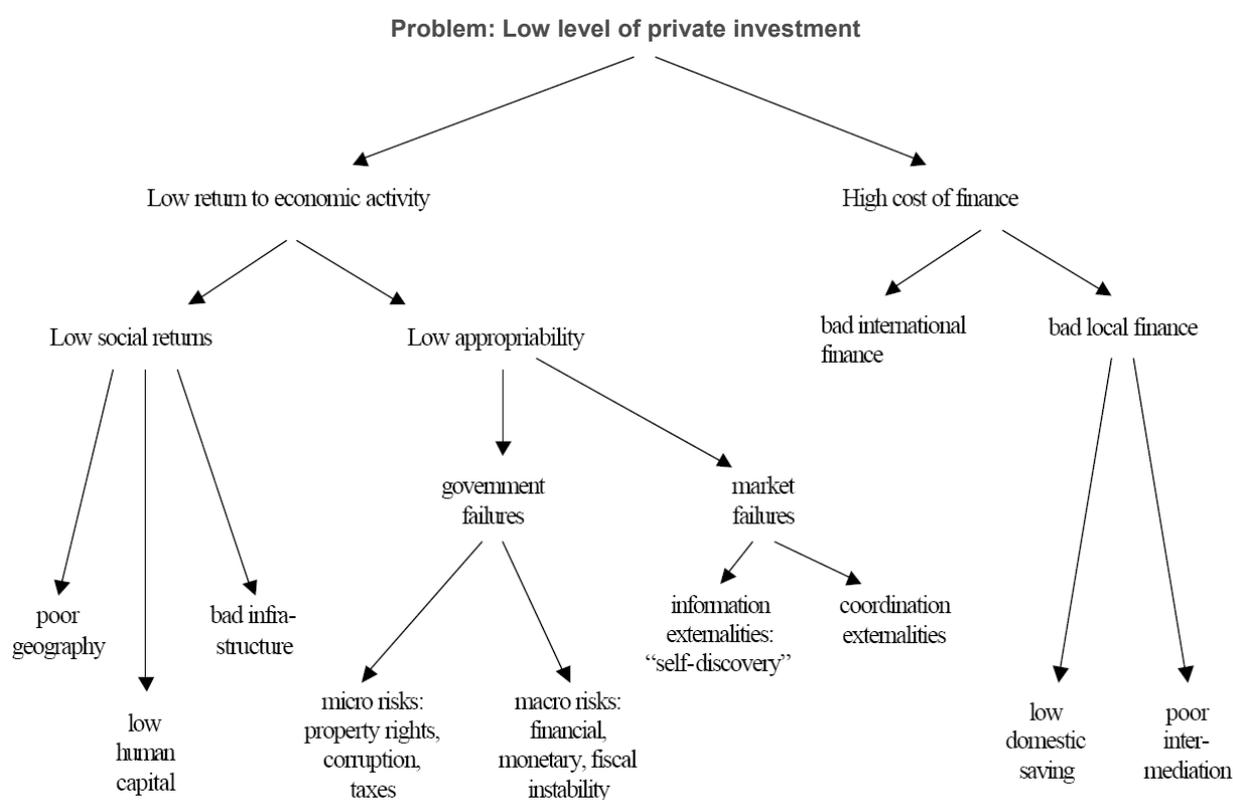
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<sup>27</sup> As many binding constraints to trade expansion may change over time, the dynamic dimension of the process is important.

<sup>28</sup> For a list, see Dani Rodrik’s weblog at: [http://ksghome.harvard.edu/~drodrik/Growth\\_Diagnostics\\_Index.html](http://ksghome.harvard.edu/~drodrik/Growth_Diagnostics_Index.html). See also the lessons draw from twelve pilot studies undertaken by the World Bank in Leipziger and Zaghera (2006) and the significant contribution of Growth Diagnostics in the context of aid (Wiebe, 2008).

- Both recognize that policies, be they to increase growth or expand trade, should be country specific. Hausmann *et al.* (2006) argue that the lessons of growth strategies were that “policies that work wonders in one place may have weak, unintended, or negative effects in other place. [...] we propose a new approach to reform—one that is much more contingent on the economic environment. Countries, we argue, need to figure out the *one or two most binding constraints* on their economy and then focus on lifting them.”
- Both recognize that all needs and constraints cannot be addressed at the same time and reforms needs to be sequenced. Political capital for reforms and financial resources under Aid for Trade are limited. Thus, it is important to identify among all the needs the most binding constraints to trade expansion in order to sequence and prioritize policy reforms and orient aid-for-trade flows. Similarly, Hausmann *et al.* (2005) emphasize that due to political and administrative limitations, policy-making capital is more useful in addressing constraints that will have the greatest impact, as opposed to too many needs simultaneously. The objective should thus be to obtain “the biggest bang for the reform buck.”

**Figure 2. Growth Diagnostics**



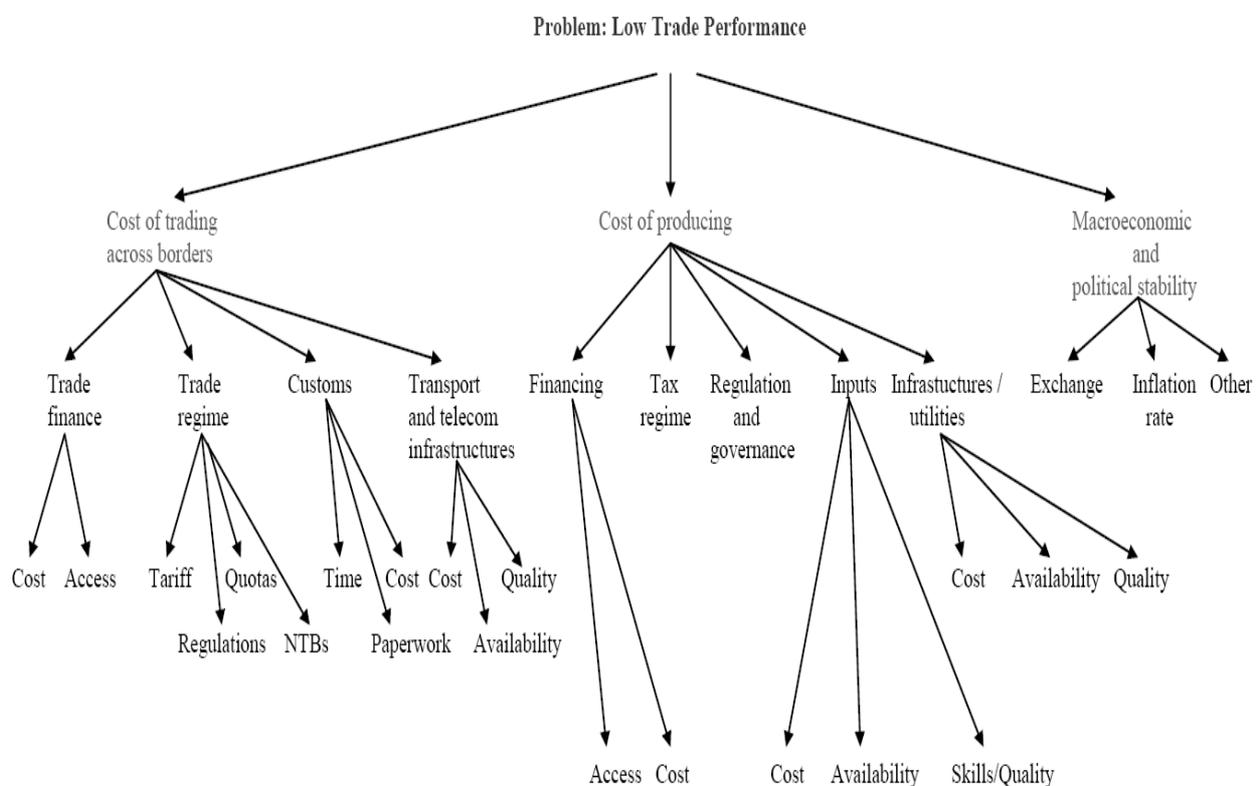
Source: Hausmann *et al.* (2005).

79. Adapting the Growth diagnostics to trade expansion can be very useful for developing countries' policy makers and development practitioners. It would help identify the most binding constraints to trade expansion. It will also result in a clear prioritization of reforms. Participants of the 2008 Policy Dialogue on Aid for Trade emphasized that “getting the right sequence of interventions is vital” for getting the delivery right (Evenett, 2008) and thus to strengthen the effectiveness of Aid for Trade. A Growth diagnostics adjusted for trade could also be used in situations where the trade expansion following a trade

reform has been disappointing (Binding Constraints A in Figure 1) as well as in situations where trade response has not resulted in substantially higher growth (Binding Constraints B in Figure 1).

80. Figure 3 provides an illustrative decision tree of how such an adaptation may look, building on the many factors that have been identified in the trade literature as potential constraints to trade expansion.<sup>29</sup> The decision tree shown in the figure is most suited for objectives such as increasing trade or diversifying exports rather than for maximizing the link with the rest of the economy or increasing adjustment capacities. For these other objectives, other decision trees can be designed. Moreover, it should be emphasized that the decision tree is designed to identify the most binding constraints that prevent a country from reaching one specific objective (as opposed to helping simultaneously prioritize multiple policy objectives).

**Figure 3. Growth Diagnostics adjusted for trade**



81. Such an approach is intended primarily to assist in pinpointing the most binding constraints for a specific country. The process for identifying the most binding constraints to trade expansion would be similar to the one described for the Growth Diagnostic. If a country wants to increase its international trade or diversify its exports, what would be the most efficient reform taking into account the trade-related institutions and the need to ultimately increase incentives to trade? Is the trade performance low because of the cost of trading across borders is high (making exports uncompetitive and imports too expensive) or is it because of the cost of producing is too high (affecting exports competitiveness), or is it because of uncertainties (economical, institutional, or political) that discourage firms from engaging in external trade? If the main problem is the cost of trading across borders, what is the main reason for this high cost? Is it because of issues related to trade finance, an unfavorable trade or customs regime, or inadequate infrastructures? If the main problem is related to infrastructures, is due to their cost, their availability, or

<sup>29</sup> Some of the factors in Figure 3 may be irrelevant for some countries.

their quality? The answer to this question will point to the most binding constraint and the area where reforms and Aid for Trade would have the biggest impact on trade performance.

82. Stakeholder consultation, benchmarks, and value chain analysis can be used at each node of the diagnostic tree. Their specific insight will increase the accuracy of the diagnosis because they provide the in-depth knowledge of the specific conditions of the country. Combining the diagnostic tools will also limit the risk that the diagnostics is biased by vested interests. In other words, this process combines the strength of each diagnostic tool while limiting the impact of their shortcoming. Undertaken in isolation, a stakeholder consultation, a value chain analysis, or a benchmarking exercise may point to different areas where reform should focus. In the framework of a growth diagnostics adjusted for trade, these tools are combined to answer a specific question. Although this does not exclude that differences of views regarding the main problems at each node of the trees will remain, it will narrow down the number of areas where reforms are the most needed.

83. Moving from the area where a reform or an action is most needed to designing and implementing the reform or an Aid for Trade project is not a simple task. The DTIS and Aid for Trade Needs Assessments (UNDP, 2008) action matrices may recommend the most adequate reform and some possible technical assistance.

84. This process can be expected to increase local ownership. Local ownership will be strengthened because the diagnostics will be best undertaken by national authorities. Diagnostics are best undertaken by national authorities as, a key lesson from applying the Growth Diagnostics at the World Bank (Leipziger and Zaghera, 2006) is that country specificities needs to be taken into account, which requires an in-depth knowledge of the country. Already, partner countries are responsible for conducting the Millennium Challenge Corporation's "Constraints Analysis", modeled on the Growth Diagnostics framework (Box 1). Local ownership will also be strengthened because combining the diagnostics tools requires a strong participatory process. Local ownership is important to make Aid for Trade more effective (OECD/WTO, 2009 and WTO, 2006b) as it makes the implementation of reforms easier and reforms more sustainable.

#### **Box 1. The Millennium Challenge Corporation's Constraints Analysis**

The Millennium Challenge Corporation developed an analytical framework to keep the focus on results throughout the process of compact development and implementation. As part of this framework, country partners are asked to establish local teams that will undertake a constraints analysis (CA).

The CA is modeled on the Growth Diagnostics framework and aim at indentifying the main bottlenecks to growth in the local economy. The CA helps country counterparts sift through the evidence to find the appropriate intersection of core priorities that hold the potential to accelerate growth. Ultimately, the CA is an analytical framework for focusing on problems that, when appropriately addressed, can be expected to raise incomes.

The initial CA identifies a small number of sectors where problems may limit economic growth. Partner countries need to extend the analysis to identify the root cause of problems, formulate potential solutions, and evaluate alternatives to define investments for MCC consideration. As countries move from problem evaluation to the development of specific investment proposals, they are required to evaluate possible activities using benefit-cost analysis models, including changes in local income

Source: Wiebe (2008).

## **5. Conclusion**

85. Past experience shows that trade can be a powerful engine for economic growth, poverty reduction, and development. This paper shows that the four most common objectives of aid-for-trade projects (increasing trade, diversifying exports, maximizing the links with the rest of the economy, and increasing adjustment capacities) have strong economic underpinning. Economic literature provides ample evidence that they can contribute to economic growth.

86. However, many developing countries face constraints that prevent them from turning from trade opportunities into trade expansion and/or constraints that limit the growth response to a trade expansion. The Aid for Trade Initiative aims to address these constraints and make the trade engine work better.

87. The constraints faced by developing countries are plentiful and there is a clear need to identify the most binding constraints and thus prioritize the reforms. In other words, in order for Aid for Trade to be the most effective, it needs to tackle the most binding constraints (taking into account that aid-for-trade resources and political capital for reforms are limited). The binding constraints need to be first identified as they differ across countries. This paper discussed the various diagnostics tools and methods that are available. Then it is crucial to identify the *most* binding constraints. This can be achieved by combining the various diagnostics tools and methods in an appropriate framework such as the growth diagnostics adjusted for trade, which is simple and practical and can be used by development practitioners and by country authorities. This would help mainstream trade in the development strategy and improve ownership.

88. This paper highlights some areas for future work. It shows that sequencing and complementary policies are crucial for strengthening the impact of aid-for-trade assistance on growth and development. These aspects will be discussed in a “good practices” paper foreseen in the joint DAC-TC programme of work and budget 2009-2010 [COM/DCD/TAD(2008)7]. There is a need to further investigate the right sequencing, possibly by looking what worked and what did not in promoting trade reforms. This relates notably to the necessities for complementary policies to the trade reforms. Complementary policies are crucial in many areas notably to ensure the sustainability of the reforms and projects financed by aid-for-trade flows but also to ensure consistency. For example, the scaling up of aid-for-trade flows could put pressure on the exchange rate and thus affect negatively the competitiveness of the exports that these very aid flows aim at boosting. This is not a fatality though and much depends on the design of aid-for-trade projects. Complementary policies are also needed to maximize the growth response to the trade expansion.

89. Moreover, further work to analyze the specific aspects of the binding constraints can be undertaken by the Secretariat. Although the most binding constraints are likely to be country specific it is likely that countries facing the same characteristics (*e.g.* landlocked countries, small and vulnerable economies, commodity exporters) face similar constraints. Developing such taxonomy of supply-side constraints could then be used to pinpoint the key needs that are currently underfunded.

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