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Upgrading ASEAN Textiles and Apparel Supply Chains

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Upgrading ASEAN Textiles and Apparel Supply Chains

INTRODUCTION

The ASEAN Competitiveness Enhancement (ACE) project falls under the ASEAN Development Vision to Advance National Cooperation for Economic Integration (ADVANCE) indefinite quantity contract. ADVANCE is a joint effort of USAID and the State Department that was launched in October 2007 to support the ASEAN-US Enhanced Partnership. ADVANCE and its component programs are implemented by a consortium of firms led by Nathan Associates Inc.

The ACE project provides technical assistance in fostering the competitiveness of ASEAN value chains and supply chains. Focusing on the growth and productivity of regional value chains and supply chains—i.e., those that organize production and value-adding activities across ASEAN borders before selling to markets inside or outside the region—will help increase intra-ASEAN trade and reinforce regional economic integration among ASEAN member states. Accordingly, the ACE project aims to

- Improve the competitiveness of selected value chains that present opportunities for intraregional trade;
- Catalyze changes in the business-enabling environment that facilitate the competitiveness of value chains and increase momentum to reduce trade barriers; and
- Generate, share, and manage lessons learned from this program to assist the private sector in ASEAN member states in taking advantage of trade and growth opportunities.

The textiles and apparel sector offers many opportunities—apparel is one of the single largest export products from ASEAN. It has a complex supply chain, and every link in the supply chain—from agents and buyers to suppliers of fibers and fabrics—can be found in ASEAN member states. Nevertheless, intra-ASEAN trade in these products is disappointingly low. Tables 1, 2 and 3 demonstrate the relatively modest dimensions for this intra-ASEAN trade, in total, for yarns and fabrics, and for apparel, respectively. Decision makers in all segments of the ASEAN textile and apparel industry see greater ASEAN integration as a strategic requirement for growth and competitiveness in their industry. Even small gains in integration have the potential to create intra-ASEAN trade worth billions of dollars.

Table 1
Total Textiles and Apparel, HS Categories 50-63, Intra-ASEAN Exports and Global Exports, by ASEAN Member Country, 2001 and 2006 (US\$ million)

From	Year	To										Subtotal ASEAN	Total Global Exports	ASEAN Share (%)
		Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam			
Brunei	2002		0.0	0.0	0.0	0.7	0.0	0.0	78.8	0.0	0.0	79.6	229.4	34.7
	2006		0.0	0.0	0.0	0.3	0.0	0.0	35.4	0.0	0.0	35.8	132.2	27.0
Cambodia	2001	0.0		0.5	0.0	0.6	0.0	1.5	2.2	0.7	0.4	5.9	1,153.0	0.5
	2004	0.0		0.7	0.0	1.5	0.1	1.6	1.7	0.8	1.2	7.5	2,001.2	0.4
Indonesia	2001	2.4	17.5		0.8	164.5	5.6	74.1	145.4	79.0	46.6	535.9	7,675.4	7.0
	2006	2.8	17.2		0.3	181.0	5.8	102.5	163.4	110.9	78.1	662.0	9,446.3	7.0
Laos PDR	2002	0.0	0.0	0.0		0.0	n/a	0.0	0.0	0.6	0.0	0.6	130.2	0.5
	2006	0.0	n/a	0.0		0.0	n/a	0.0	0.1	2.2	n/a	2.3	196.9	1.2
Malaysia	2001	28.0	26.4	35.4	0.1		3.5	22.3	167.2	19.5	55.3	357.6	2,296.0	15.6
	2006	11.0	55.9	87.3	1.9		5.6	38.0	132.4	42.0	108.8	482.7	2,848.4	16.9
Myanmar	2001	n/a	0.1	0.6	n/a	2.0		0.0	28.8	0.3	n/a	31.9	895.2	3.6
	2006	0.0	n/a	0.0	n/a	8.2		0.0	8.4	0.4	n/a	17.1	416.8	4.1
Philippines	2001	0.0	1.2	9.6	0.0	15.5	0.3		11.8	5.5	2.3	46.3	2,598.5	1.8
	2006	0.4	3.2	9.5	0.0	9.1	0.2		13.1	6.2	4.2	46.0	2,867.8	1.6
Singapore	2001	45.0	20.8	0.0	0.0	331.0	16.3	21.9		39.3	14.0	488.3	2,368.7	20.6
	2006	32.6	38.4	514.3	0.0	256.4	8.1	24.5		52.3	37.8	964.4	2,914.4	33.1
Thailand	2001	2.4	23.4	78.6	40.2	68.4	39.6	73.1	97.8		41.7	465.1	5,293.2	8.8
	2006	3.1	80.2	136.3	70.7	112.1	67.3	96.8	103.5		142.3	812.1	6,950.0	11.7
Vietnam	2002	0.1	9.3	4.1	25.7	35.8	2.1	4.1	22.8	10.5		114.4	3,006.4	3.8
	2005	0.0	21.9	8.8	16.8	45.9	2.8	20.3	15.6	29.3		161.5	5,308.4	3.0
Total	2001	77.9	98.6	128.8	66.7	618.6	67.3	197.0	554.8	155.3	160.4	2,125.5	25,645.9	8.3
	2006	49.8	216.8	756.9	89.7	614.4	89.8	283.8	473.5	244.1	372.4	3,191.3	33,082.5	9.6

Notes : Data for Brunei and Laos PDR are 2002-2006; for Cambodia are 2001-2004; for Vietnam are 2002 and 2005

Source : Nathan Associates and Kenan Institute Asia based on ITC TradeMap database

Table 2

Textile Fibers and Fabrics, HS Categories 50-60, Intra-ASEAN Exports and Global Exports, by ASEAN Member Country, 2001 and 2006 (US\$ million)

From	Year	To										Subtotal ASEAN	Total Global Exports	ASEAN Share (%)
		Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam			
Brunei	2002		0.0	0.0	0.0	0.3	0.0	0.0	20.9	0.0	0.0	21.2	22.3	95.0
	2006		0.0	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.8	1.0	79.1
Cambodia	2001	0.0		0.4	0.0	0.2	0.0	1.4	0.8	0.0	0.3	3.1	8.9	34.4
	2004	0.0		0.6	0.0	0.4	0.1	1.4	0.6	0.1	1.2	4.3	19.8	21.5
Indonesia	2001	1.1	16.9		0.6	135.1	5.0	67.9	71.5	76.0	45.6	419.9	3,086.0	13.6
	2006	0.9	17.1		0.3	136.5	5.6	96.7	85.7	102.5	77.4	522.8	3,688.9	14.2
Laos PDR	2002	0.0	0.0	0.0		0.0	n/a	0.0	0.0	0.5	0.0	0.6	0.7	83.2
	2006	0.0	n/a	0.0		0.0	n/a	0.0	0.0	0.6	n/a	0.6	0.8	72.8
Malaysia	2001	24.7	25.9	24.4	0.1		3.4	13.1	95.3	16.3	55.0	258.2	1,057.2	24.4
	2006	7.6	53.6	67.3	1.9		5.1	29.7	62.2	31.0	107.2	365.5	1,448.2	25.2
Myanmar	2001	n/a	0.1	0.6	n/a	1.5		0.0	0.1	0.3	n/a	2.6	4.9	52.5
	2006	0.0	0.0	0.0	n/a	0.5		0.0	0.1	0.4	n/a	1.0	4.3	23.0
Philippines	2001	0.0	1.1	4.4	0.0	6.4	0.3		4.1	4.8	1.8	23.1	191.2	12.1
	2006	0.2	3.2	7.8	0.0	4.3	0.2		2.4	4.4	3.7	26.2	211.5	12.4
Singapore	2001	34.0	18.7	0.0	0.0	232.3	11.3	14.8		32.8	12.3	356.2	701.0	50.8
	2006	15.5	35.8	283.0	0.0	145.2	6.7	11.8		30.8	34.1	563.0	875.9	64.3
Thailand	2001	1.2	20.6	76.7	36.0	60.6	29.4	64.4	64.6		40.4	393.9	1,931.2	20.4
	2006	1.2	74.7	130.8	65.8	100.3	53.4	85.4	60.4		138.4	710.6	3,048.7	23.3
Vietnam	2002	0.0	8.7	3.8	22.3	9.0	1.8	3.6	5.8	6.9		61.9	313.4	19.7
	2005	0.0	20.7	7.0	14.1	19.6	2.7	19.1	9.5	21.7		114.4	481.3	23.8
Total	2001	61.1	92.0	110.3	59.0	445.4	51.2	165.4	263.0	137.6	155.5	1,540.5	7,316.7	21.1
	2006	25.4	205.2	496.5	82.2	407.0	73.9	244.1	221.4	191.5	362.0	2,309.2	9,780.5	23.6

Notes : Data for Brunei and Laos PDR are 2002-2006; for Cambodia are 2001-2004; for Vietnam are 2002 and 2005

Source : Nathan Associates and Kenan Institute Asia based on ITC TradeMap database

Table 3

Apparel and Related Articles, HS Categories 61-63, Intra-ASEAN Exports and Global Exports, by ASEAN Member Country, 2001 and 2006 (US\$ million)

From	Year	To										Subtotal ASEAN	Total Global Exports	ASEAN Share (%)
		Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam			
Brunei	2002		0.0	0.0	0.0	0.5	0.0	0.0	58.0	0.0	0.0	58.4	207.1	28.2
	2006		0.0	0.0	0.0	0.2	0.0	0.0	34.7	0.0	0.0	34.9	131.2	26.6
Cambodia	2001	0.0		0.1	0.0	0.4	0.0	0.1	1.5	0.6	0.1	2.9	1,144.1	0.2
	2004	0.0		0.1	0.0	1.1	0.0	0.2	1.1	0.7	0.0	3.2	1,981.4	0.2
Indonesia	2001	1.4	0.6		0.2	29.4	0.5	6.1	73.9	3.0	1.0	116.0	4,589.4	2.5
	2006	1.9	0.1		0.0	44.4	0.1	5.8	77.7	8.3	0.7	139.1	5,757.3	2.4
Laos PDR	2002	0.0	0.0	0.0		0.0	n/a	0.0	0.0	0.1	0.0	0.1	129.5	0.1
	2006	0.0	0.0	0.0		0.0	n/a	0.0	0.1	1.6	n/a	1.7	196.1	0.9
Malaysia	2001	3.2	0.5	11.0	0.0		0.1	9.2	71.9	3.2	0.3	99.4	1,238.9	8.0
	2006	3.4	2.2	20.0	0.0		0.5	8.3	70.2	11.0	1.7	117.2	1,400.2	8.4
Myanmar	2001	n/a	0.0	0.0	n/a	0.6		0.0	28.7	0.1	n/a	29.3	890.2	3.3
	2006	0.0	n/a	0.0	n/a	7.6		0.0	8.4	0.0	n/a	16.1	412.5	3.9
Philippines	2001	0.0	0.1	5.2	0.0	9.2	0.0		7.6	0.7	0.5	23.2	2,407.3	1.0
	2006	0.1	0.1	1.7	0.0	4.8	0.0		10.7	1.8	0.6	19.8	2,656.3	0.7
Singapore	2001	11.0	2.1	0.0	0.0	98.6	5.0	7.1		6.5	1.7	132.1	1,667.7	7.9
	2006	17.1	2.6	231.3	0.0	111.2	1.3	12.8		21.5	3.7	401.4	2,038.5	19.7
Thailand	2001	1.2	2.8	1.9	4.2	7.8	10.2	8.7	33.2		1.3	71.2	3,362.0	2.1
	2006	1.8	5.5	5.4	4.8	11.8	13.8	11.3	43.1		3.9	101.5	3,901.3	2.6
Vietnam	2002	0.1	0.6	0.3	3.4	26.8	0.2	0.5	17.1	3.6		52.5	2,693.0	2.0
	2005	0.0	1.2	1.8	2.7	26.3	0.1	1.2	6.1	7.6		52.5	2,693.0	2.0
Total	2001	16.8	6.6	18.5	7.7	173.2	16.1	31.7	291.8	17.7	5.0	585.0	18,329.2	3.2
	2006	24.4	11.6	260.4	7.6	207.4	15.9	39.7	252.1	52.7	10.5	887.5	21,167.8	4.2

Notes : Data for Brunei and Laos PDR are 2002-2006; for Cambodia are 2001-2004; for Vietnam are 2002 and 2005

Source : Nathan Associates and Kenan Institute Asia based on ITC TradeMap database

STAKEHOLDERS' RESPONSE

To ensure that the ACE program involves all stakeholders, representatives of every part of the textiles and apparel value chain in ASEAN—representatives of textile business associations and buyers of end products—were interviewed for this report. Table 4 lists the interviewees.

Table 4
ASEAN Textile and Apparel Supply Chain Stakeholders Interviewed, and their Links in the Value Chains

Company or Association	Country	Sourcing or Buyer	Fiber, Yarn, Fabric	Garments	Finishing	Logistics	AFTEX Member
Buyer A ^a	Singapore	✓					
Buyer B ^a	Hong Kong	✓					
Buyer C ^a	Hong Kong	✓					
Buyer D ^a	Hong Kong	•					
Malaysian Textile Manufacturers Association	Malaysia		✓	✓	✓		✓
Textile and Fashion Federation of Singapore	Singapore	✓				✓	✓
Thai Synthetic Textile Manufacturers Association	Thailand		✓		✓		✓
Thai Textile Institute	Thailand		✓		✓		✓
Philippine Garment Associations	Philippines	✓		✓			✓
Vietnam Textile and Apparel Association	Vietnam			•	•		•
Indonesian Textile Manufacturers Association	Indonesia			•	•		•
Laos Garment Manufacturers Association	Laos			•			•
Garment Manufacturers Association of Cambodia	Cambodia			•			•

✓—Surveyed

•—Yet to be surveyed

^aThe names of buyers interviewed are confidential.

AFTEX

The ASEAN Federation of Textile Industries (AFTEX) is the regional coordinating group for the textile industry; its members are principally association leaders. There are two tiers of AFTEX representatives, the executive council and the secretary general. The executive council is made up of association presidents who often have a major investment stake in the sector, through ownership of plants and equipment. The secretary general is the right hand of the executive council and is made up of executive directors and the like from each association. These are often professionals without a stake in productive operations.

The Malaysian Textile Manufacturers Association (MTMA) takes an active role in coordinating AFTEX activities. Singapore, Thailand, and the Philippines have also played a leadership role in coordinating AFTEX activities. Although Cambodia has also been active, the executive director of the Garment Association of Cambodia had recently resigned and was therefore not interviewed. The other members of AFTEX—Vietnam, Laos, and Indonesia—have been active AFTEX members and are being made aware of the ACE program by other AFTEX members. They will have a chance to respond to this report's recommendations at the executive council meeting.

Malaysia

Malaysia, through the MTMA, is the coordinating country for the ASEAN Textile and Apparel Integration Road Map. The MTMA executive director spent six hours reviewing ASEAN programs for this study, an indication of the strength of MTMA's support for the ACE program. MTMA volunteered to go to Bangkok and speak to USAID about their support for the ACE project. MTMA offered to coordinate submitting the project work plan to the executive council. MTMA supports working with two or three supply chains to see what works and what does not work as well as the posting of a directory of ASEAN suppliers on the web.

Singapore

Singapore's representative, the secretary general of The Singapore Textile and Fashion Federation, spent about two hours in the interview for this report. He indicated that Singapore would be supportive of the project but its association has no funds for travel or other out-of-pocket expenses. The Singapore Textile and Fashion Federation offers a large training program and can secure funds from the Singapore government to assist Singaporean firms in working in other ASEAN countries. The secretary general also noted that ASEAN has a cost-sharing program, whereby the Secretariat pays for half the costs of joint regional selling missions outside ASEAN out of a general fund. He noted that project funding was modest, so proposed a number of ways to save money. He supported working with a few value chains as examples and noted the importance of buyers and agents; without their cooperation, things would move slowly. He recommended focusing on soft skills because heavy technical interventions, requiring high level engineering or design skills can get expensive and time consuming despite having uncertain outcomes.

Thailand

The president of the Thai Synthetic Suppliers Association was interviewed for the study. The Thai association president noted considerable e-mail traffic among members discussing the formulation of the ACE program, which indicates a high degree of interest. He supported working with a few supply chains in ASEAN but did not consider the choice of supply chain important. He noted that starting with firms that have demonstrated capability in exporting would be better – starting with anything less would be an uphill battle given the limited resources. A CLV garment factory that already uses fabric from Thailand or Indonesia would be a natural case study in part because that is the ASEAN road map and that is how the market sees the situation.

The executive director of the Thai Textile Institute was also interviewed for this study. He was supportive of the project and ready to work with it. The Thai Textile Institute has in-

house training capability for factory interventions and is developing a textile testing laboratory.

Philippines

The Philippines was represented by the executive director of the Clothing and Garment Federation of the Philippines (CONGEP). CONGEP looks forward to working with the project, especially on trade issues (e.g., tariff harmonization). CONGEP was the founder of Source It, the ongoing AFTEX selling mission for regional sourcing. Despite—or because of—CONGEP’s involvement in Source It, the CONGEP executive director recommended that the ACE program not invest heavily in selling missions because they are difficult and sometimes fruitless, but instead focus on overcoming constraints to competitiveness within ASEAN. CONGEP looks forward to working with the project as an operational partner.

Conclusions

Stakeholder support for the ACE program was generally strong, and the project can expect a good collaboration with national associations and AFTEX. Material support, however, is of significant concern. Most associations operate on slim budgets, so stipends and cost offsetting for association members’ time will be important. For example, travel will have to be reimbursed, and the cost of association members’ time spent developing a directory of ASEAN producers will have to be offset by the project.

CURRENT INTRA-ASEAN TEXTILE TRADE

General Trends in Intra-ASEAN Textile Trade

For our supply chain analysis, we first considered exports of textile products from the developed ASEAN member states (Singapore, Indonesia, Malaysia, and Thailand) to the least-developed ASEAN member states (Cambodia, Laos, and Vietnam [CLV]) (Table 5).

Table 5

Exports of Textiles and Yarn from Singapore, Indonesia, Malaysia, and Thailand to CLV, 2003–2007 (in 2007 US\$ million)

	2003	2004	2005	2006	2007
Indonesia	58.9	68.7	79.3	84.9	85.4
Malaysia	83.0	91.1	114.2	159.5	169.1
Thailand	127.6	158.6	200.1	238.8	--
Singapore	32.5	39.8	62.2	62.2	--
Total to CLV	302.0	358.2	455.8	545.4	--
Year-on-year growth	--	19%	27%	20%	--

Source: UN COMTRADE database.

Intra-ASEAN trade in textiles grew at double-digit rates—ranging between 19 percent and 27 percent—during the 2003–2007 period, starting from a low level of just US\$300 million in 2003 and accelerating with the elimination of textile and apparel quotas in 2005. Growth in worldwide textile exports from the same countries ranged from 4 percent to 12 percent during the same period. In comparison, intra-ASEAN trade has been robust.

Malaysia and Thailand dominate intra-ASEAN trade in textiles, and both suppliers demonstrate strong growth. Indonesia lags somewhat behind, but this may be because it has both a significant textile manufacturing base and a low-wage, competitive labor force in the making-up (garment) segment of the supply chain, and Indonesian textile manufacturers find shipping textiles to CLV for making up less profitable. Singapore is an important hub for entrepot trade, so its role is ambiguous, but with land, rent and labor costs rising rapidly in Singapore, its continued role as a major supplier of textiles to ASEAN is in doubt.

Intra-ASEAN Textile Trade by Product

Table 6 presents the shares of intra-ASEAN exports of textiles by destination and product category. Knit fabrics are the leading intra-ASEAN textile product traded (27 percent), followed by yarns and cotton wovens (both at 21 percent).

Table 6

Share of Exports from Indonesia, Malaysia, and Thailand to CLV, by Major Product Category, 2006 (%)

Product Category	Cambodia	Laos	Vietnam	Total CLV
Knit or crochet fabrics	17	6	5	27
Yarns (cotton, manmade, wool)	1	1	19	21
Cotton wovens	9	3	8	21
Manmade wovens	2	1	10	13
Special yarns and nonwovens	3	1	10	14
Tulle, lace, embroidery etc.	1	1	1	3
Other wovens of silk, wool, and vegetable fiber	0	0	0	0
Total	33	13	53	100

Source: UN COMTRADE database. May not add to totals due to rounding

Cambodia imports more knit fabrics from ASEAN partners than any other ASEAN textile product by a large margin. Laos also imports considerable knit fabric from within ASEAN. For Vietnam, knit fabrics play a smaller role in textile imports from the ASEAN region.

Intra-ASEAN trade in yarns is asymmetric, with Vietnam by far the dominant importer of these products. This is not surprising because neither Laos nor Cambodia has Vietnam's capacity to weave or knit yarns into fabric. Cotton woven imports are more evenly balanced among Cambodia, Laos, and Vietnam.

Table 7 takes a different look at intra-ASEAN textile trade. It breaks the major product categories into subcategories and shows the 14 products that make up over 85 percent of intra-ASEAN textile trade. In this breakdown, knit pile fabrics are the largest category of intra-ASEAN textile exports to CLV. Most of this is cotton pile fabric, the primary input for towels and other home textiles. These products have low value added in the making-up process and therefore low value added for CLV. Promoting trade in these products is therefore not a high priority for the ACE program.

Table 7

Top 14 Textile Products Exported by Indonesia, Malaysia, Thailand, and Singapore to CL, 2006

Product	Category	US\$ million
Pile fabric, knit, crochet	Knit	77
Other knit or crochet fabrics	Knit	69
Other synthetic filament yarn	Yarn	65
Other 85%+ cotton fabric < 200 g (lightweight)	Woven cotton	48
Fabrics of synthetic filament yarn	Woven manmade	33
Nonwovens, impregnated or coated or not	Other	32
Fabric <85% synthetic staple fiber and cotton	Woven manmade	27
Synthetic, filament yarn, bulk	Yarn	24
Twine, cordage, etc.	Other	24
Other < 85% cotton fabric < 200 g (lightweight)	Woven cotton	21
Other 85%+ cotton fabric 200 g+ (heavyweight), including denim	Woven cotton	21
Other woven fabrics, of cotton	Woven	13
Thread of man-made fiber	Other	10
Wadding etc.	Other	10

Source: UN COMTRADE Database

Yarns, of which Vietnam is the largest intra-ASEAN importer among CLV (see Table 6), are filament yarns constructed principally of manmade fiber. Manmade filament yarns are an input into many products, including industrial, home, and apparel products. Because of the limited potential in Cambodia and Laos of filament yarn products, however, promoting their trade is also not a high priority of the ACE program.

Lightweight, principally cotton, woven fabrics are also important to intra-ASEAN textile trade and are traded in roughly similar proportions among CLV. They are often traded in the unbleached and undyed “greige” state and require printing and other finishing to be made into consumer products. They are used for many apparel products—women’s and girls’ dresses, blouses, skirts, and shirts and men’s and boys’ lightweight cargo pants, shorts and shirts. Improvements in producing a single segment, such as women’s and girls’ print dresses, could be leveraged for manufacturing other products, such as men’s and boys’ casual shirts and shorts. Lightweight cotton fabrics therefore have great potential for increased production in CLV.

SUPPLY CHAIN LINKS

Figure 1 illustrates the major supply chain linkages in intra-ASEAN textile trade and lists the major needs for each link.

Figure 1
ASEAN Value Chain and Major Components



Figures 2 and 3 illustrate the major supply chain linkages for the production of denim jeans, from yarn to shipment. The figures show the supply chain broken where production could be split between two ASEAN countries. For example, Malaysia could make the denim fabric and Cambodia the garment. The figures are also color coded to indicate the links that interviewees indicated require intervention the most. The most-cited links are in red and the second-most cited are in yellow. The processes are divided between the textile industry (Figure 2) and the garment manufacturing industry (Figure 3).

The figures break down the major processes in the weaving of fabric and the making of garments. Furthermore, parts of each of the major processes—although not illustrated in the figures—are often subcontracted. For example, in importing cotton to make denim, subprocesses for logistics and customs are contracted out to freight forwarders and logistics firms. The dyeing of the cotton yarn may be subcontracted to one supplier and the testing to another. The same is true for the making up of garments. The fabric is sourced and vetted for quality and consistency (i.e., tested), agents arrange export and import paperwork, and freight forwarders arrange shipping for a container from point to point. When fabric arrives, it is usually cut in the factory in which sewing will take place, but not always—cutting may be outsourced. Trims, such as zippers, pocketing, and thread, are sourced and gathered for assembly. After the jeans are assembled, pocket embroidery or other finishing operation is often subcontracted to local firms. After this finishing, garments may undergo further finishing such as distressing, tasks often subcontracted to specialized firms. The garment is washed to give the garment the look and feel that consumers expect, and this again is often subcontracted to a specialized firm. Packaging may be sourced locally or imported.

Figure 2
Supply Chain for Making Denim Fabric (Share in Total Manufacturing Cost) (Indonesia)

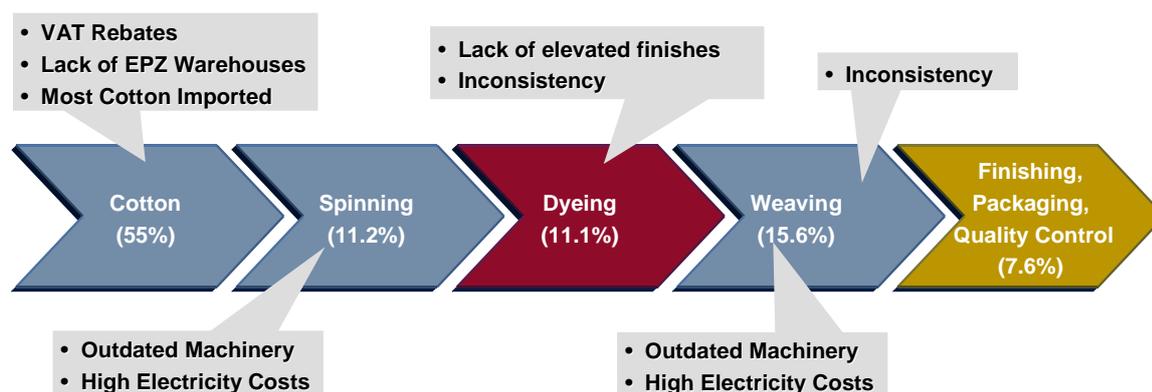
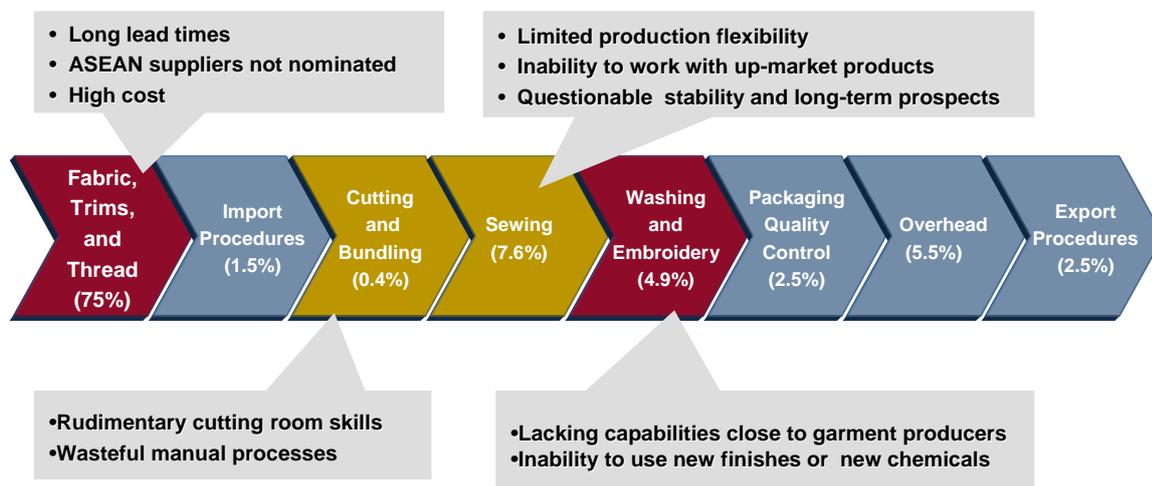


Figure 3
Supply Chain for Cutting and Sewing of Denim Apparel (Share in Total Cost) (Cambodia)



So the garment production process can be highly fragmented, with dozens of specialized service providers involved. The ability of such service providers and subcontractors to respond rapidly to buyers' demanding requirements at low—although not necessarily the lowest—cost and with high quality is what makes an industry competitive and allows it to thrive in the global marketplace. Some industry experts, including David Birnbaum of Harvard University, assert this is China's major advantage—cities dedicated to the production of single product lines such as socks, print skirts, or knit underwear.

The clustering of product-specific industries and allied services allows sourcing agents to rest assured that they can go to traders and producers in a given region or city and get what they want. Some ASEAN member states offer the same advantages—for example, the denim cluster in Bandung, Indonesia, and the woven shirt industry of East Java. For ASEAN integration to work, more such clusters of product-specific service providers are needed, not only to leverage the strengths of multiple providers, but to provide one-stop shopping for buyers and sourcing agents. The advantages of clusters can be created in ASEAN through product corridors that link supplier and allied industries for production and also meet the needs for logistics and cross-border or regional trade.

WORKING WITH OTHER ADVANCE PROGRAMS

Much of what makes integrating the ASEAN textile and apparel industries difficult is related to transportation, customs, and tax law, but these topics are outside the scope of the ACE program. Conversely, however, the ACE program and AFTEX could be useful sources of information for other programs engaged in customs and trade facilitation in ASEAN, which include

- Reform of ASEAN outward processing arrangements
- An ASEAN single window to speed customs processing for “green lane” producers
- Harmonization of tariff codes among ASEAN member states
- Increased use of electronic customs processing
- Selective inspection of cargo
- Reduction of all ASEAN tariffs on textiles and apparel from 5 to 0 percent, eliminate all exceptions, and speed up the phasing down of tariffs for Cambodia, Laos, and Vietnam
- Harmonization of rules of origin within ASEAN on the basis of both a transformation and a value-added rule
- Harmonization of rules of origin among all ASEAN free trade agreements, including bilateral agreements with Korea, China, Japan and United States

To create product corridors in the ASEAN textile industry, logistics and cross-border constraints must be removed where possible, so the ACE program will have to work closely with the ADVANCE trade facilitation and single window programs.

CONSTRAINTS ON INDUSTRY COMPETITIVENESS

The ACE program does aim to overcome the following constraints:

- A lack of awareness among manufacturers and service providers of the producers of materials and services available in ASEAN member states (weak business-to-business knowledge)
- A lack of knowledge about the advantages of ASEAN member states as alternatives to China, Korea, and Taiwan for sourcing materials
- A lack of understanding of the logistical advantages of working within ASEAN (e.g., reduction in lead time for Cambodian firm to source fabric from Malaysia rather than Taiwan or China)
- Weak skills of material suppliers
- Inadequate basic education in CLV
- Low productivity
- Long lead times
- Poor basic production skills, such as spinning, weaving, and finishing
- Rudimentary finishing skills
 - Fabrics—lack of finishes that go beyond the basics

- Garments—lack of printing, embroidery, and washing (e.g., stone, enzyme, wrinkle free) capabilities
- Lack of R&D and innovation
- Low production volumes
- Limited fabric sampling capabilities
- Limited financing from local banks for investment in new equipment

ACE PROGRAM GOALS

In the interviews conducted for this study, buyers and producers had somewhat differing ideas about the activities needed most urgently to achieve integration of the ASEAN textile and garment industries into effective value chains. They did agree, however, that ASEAN producers must reduce lead times and improve product capabilities (quality and innovation). Reducing costs was rarely mentioned in interviews—not because it is not important but because it is a given. Lead times and product capabilities therefore must be balanced against cost.

Reducing Lead Times

The textile industry requires ever shorter lead times. Ten years ago, six-month lead times for shipping an order were common. Today, the benchmark is 45–60 days. The best turnaround times are approaching 28 to 35 days. And because most ASEAN manufacturers ship fabric from China or elsewhere in Asia, such short lead times are becoming more difficult to achieve.

Reductions in lead times can come from several areas. All parties—buyers and sellers—recognize that lead times can be reduced at multiple points in the manufacture, trade, and development of textiles and garments. Reducing lead times by reducing border delays is just one method, one that the ASEAN Trade Facilitation project can help achieve. In the context of the ACE program, reducing lead times could come from

- Moving material and trim manufacturers closer to garment factories;
- Moving the final finishing of fabric and garments closer to garment factories;
- Reducing the time required by a factory to initiate a new style and ship an order; and
- Improving factories' ability to increase manufacturing capacity rather than outsource production.

Moving Material and Trim Manufacturers and Finishers Closer to Garment Factories

Moving materials and trim suppliers closer to making-up operations is a major undertaking that may not be feasible in the short to medium terms and is therefore probably outside the scope of the ACE program. Instead of geographic proximity, though, the project may be able to help achieve virtual proximity, whereby suppliers of materials, trims, and finishing move closer to garment factories through better communication, planning, and trade and transport linkages. Most parties interviewed for this survey indicated that the project can first improve the knowledge of regional suppliers and thereby lead times for production and border crossing required. Buyers indicate varying levels of knowledge about regional sourcing. But all agreed: their knowledge of capable suppliers always stands to be improved.

Reducing Lead Time for Creating New Styles and Ramping up Production in the Short Term

Reducing the time required by factories to turn an order or move to a new style requires better management and skills in the factories. This goal can be achieved in two ways: improving capital machinery (hardware) and training of workers (software). The two are not always complements; they can substitute for each other. So, a factory that cannot afford a \$500,000 machine may be able to invest \$50,000 in training and achieve a similar result in improved turnaround time (although training is risky in that knowledge can leave with the worker if the worker is hired by another firm). The purchase of machinery and systems is not within the scope of the ACE program; the low cost of labor and the shortage of capital dictate a training approach to improving lead times. Most sources interviewed for this study agreed that upgrading the management and skills of the workforce is crucial to the industry's long-term survival and growth in the region.

The final point under reducing lead times, improving factories' ability to ramp up production quickly, also relates to management and workforce training. Buyers in this survey indicated that they sometimes have to ask factories to deliver much more than they are used to providing, but only for short peak production periods. It would be more efficient if factories could operate at 110 percent of capacity for a short period rather than trying to subcontract peak work out. As for improving turnaround time, better management and workforce skills can be applied to increase peak capacity levels.

Improving Product Capabilities

Improving product capabilities is important for producers of both fabric and garments. A trend that has accelerated since the elimination of quotas is mass customization. European manufacturer Zara (and to a lesser extent Mango) pioneered the concept and prides itself on offering new products every six weeks. This means smaller orders that have to be produced faster. Even some U.S. retailers and name brands now talk about running two product lines per season.

For the mass market—large brands and department stores—this does not mean new products every six weeks but “elevating” the garment design process. An elevated product usually has a slightly different finish, color, or trim—variations on a theme. To serve this segment of the market, ASEAN suppliers require greater capability in fabric and garment finishing and perhaps garment preproduction (sample, pattern, and marker making). Industry representatives interviewed for this survey confirmed that finishing capabilities in ASEAN have to be upgraded in fabric finishing (dyeing and printing) and garment finishing (e.g., washing, distressing, embroidery). These are complicated processes and require capital investment in machinery and equipment as well as skill upgrading.

It is beyond the ACE program's resources and scope to help supply capital equipment. Moreover, the technical skills required to operate the equipment are usually best taught by equipment manufacturers and joint venture partners. The ACE program might explore the potential for obtaining funding or *facilitate* investment for equipment from development banks and equipment suppliers.

Developing R&D and product development skills are also perhaps beyond the means and timeline of the ACE program. But the program might support producers' participation in trade shows and existing training programs. Important basic skills such as pattern cutting and

digitizing would begin to address the product development constraints and elevate local capabilities and knowledge of the design process.

Reducing Costs

All activities should strive to strike a balance between increasing capabilities and keeping costs low. Striking a balance between the two does not necessarily mean a cost reduction in absolute terms. For example, delivering a pair of jeans in four weeks for a 5 percent higher cost does constitute cost containment. The shorter turnaround time may well be worth more to the supplier than the 5 percent cost premium.

Generally, the activities discussed here have many advantages in terms of cost reduction. For example, workforce development—teaching specific skills for a factory—will result in higher productivity and better service.

PRODUCT CORRIDOR DEVELOPMENT

Buyers and industry leaders in ASEAN indicate that overcoming trade facilitation and logistics constraints alone will not be sufficient to improve the competitiveness of the ASEAN textile and garment industry; other constraints, such as lack of knowledge of regional supply chain services and suppliers, must be also overcome.

Buyers have pointed out the deficits in production and product development that must be addressed. The ACE program should focus on creating “product corridors” that virtually integrate suppliers and services. Creating corridors will require that suppliers be defined and services and capabilities upgraded so that buyers and sourcing agents recognize product-specific regional strengths and can readily source services and products across borders to meet their need for elevated products, quality, and shorter lead times.

Several activities can be defined:

- Increasing B2B knowledge of textile and apparel producers within corridors, for services and allied industries as well as fabric and garment production;
- Management and worker skill development (workforce development); and
- Facilitating investment in machinery and equipment.

DIRECTORIES OF PRODUCERS AND SERVICES

Increasing knowledge of ASEAN business and service providers is crucial to developing the required intraregional linkages. The ACE program would like to help create a comprehensive directory of producers in the textile and garment industry in ASEAN member states, but producing such a directory would require a year or more of work and considerable expense. A two-pronged approach to developing an ASEAN textile industry directory is therefore proposed: (1) update the existing ASEAN web directory using information available to associations through their membership lists; and (2) develop product-specific directories for product corridors that include not only textile and apparel producers but also service providers and allied industries.

General Directory

Analysis of data and the interviews carried out for this report point to certain supply chains most suited for development (e.g. supply chains for women's lightweight cotton dresses). AFTEX leaders have expressed concern that this approach has inherent weaknesses. First, trade data alone cannot identify the consumer products that certain fabrics and materials go into. Nor do trade data always indicate which final products have the greatest potential for market growth. Furthermore, this approach assumes that the respondents to our survey know most of the factories and suppliers involved, which is not necessarily true.

AFTEX leaders would like a more systematic approach to identifying all the major producers engaged in ASEAN trade before the product corridors are selected for ACE program intervention. AFTEX has a directory of regional producers, but it is out of date and does not indicate if suppliers export or import to ASEAN countries. AFTEX leaders have proposed requesting that members update their association membership lists and submit them to AFTEX for consolidation. They estimate this will take two or three months. About 80 percent of ASEAN textile and apparel producers and their capabilities could be identified in this way—the first step in developing product corridors.

Product and Service Directories

The development of a general directory is a step toward the development of product-specific directories and the creation of ASEAN product corridors. Product- and corridor-specific directories are different from general directories in several ways:

- They are for specific, known logistical chains, such as Bangkok–Phnom Penh and Penang–Ho Chi Minh City;
- They include not only suppliers of fabrics and garments for a specific product, but also allied industries, such as dyeing and printing and service providers in logistics, translation, brokerage, customs processing, and product development;
- Information on shipping and customs, and the strengths and volume capabilities of producers is included.

PILOT PRODUCT CORRIDORS

Using trade data, interview information, the updated ASEAN producers' directory, and responses to an e-mail survey of producers, specific product corridors will be defined: for example, Penang (Malaysia)–Phnom Penh (Cambodia) for knit synthetic sportswear, or Vientiane (Laos)–Laem Chabang (Thailand) for lightweight cotton prints. The strengths and weaknesses of the corridor will be defined through logistics and industry analysis.¹ The diagnostic will bring into focus the buyers and end markets for the products, something the producers probably do not do on a regular basis. It will also bring into focus allied services and suppliers with clear linkages to supply chain activities, which often are not covered by association directories.

The ACE program will conduct a diagnostic analysis identifying the constraints on the product corridor and setting priorities for addressing and overcoming them. Interviews with industry leaders conducted for this report suggest that the top three priorities will be (1)

¹ The logistics analysis could be facilitated using the FastPath program.

workforce development, (2) investment facilitation, and (3) product development or logistics assistance.

WORKFORCE DEVELOPMENT

Buyers and industry leaders have indicated that skills must be improved throughout the industry—the problem is widespread, not isolated to particular segments of the supply chain. The ACE program would like to use ASEAN resources for the training to improve the skills needed, to build local capacity and manage costs. Many of the ASEAN countries have established training centers: MATAC in Malaysia; TTI in Thailand; and several programs, including the USAID Garment Industry Productivity Center, developed with Nathan Associates technical assistance and support, in Cambodia. Although training programs abound, there is little coordination among them, so their training programs on similar topics vary from 2–3 days to 4–6 weeks and training programs on basic skills vary according to the trainer and the system the trainer uses. Moreover, the training programs of international donors are designed according to their own agendas and resources.

This suggests a need for an assessment of regional training programs. An assessment could identify suppliers that can meet the training needs defined in the product corridor diagnostic. The ACE program could also define common certification programs to ensure that services meet performance expectations; factories hiring the programs for their workers or hiring graduates from the programs would know what to expect. As it stands now, factories often regard training programs and the institutions that provide them as ineffective because of a mismatch between factories' expectations and the training provided by the training institutes.

Depending on stakeholder interest and the requirements defined in the corridor diagnostic, the following activities can be undertaken to improve regional workforce development:

- Inventory and evaluate training programs and institutes in ASEAN member states
- Facilitate exchanges of training staff between regional training institutes
- Recommend an agenda for regional certification and training programs
- Draw up job descriptions that could be matched to certificates offered.

To advance these programs and develop a work plan, a steering committee of regional training institutes could be formed and receive support from the ACE program. The steering committee could evaluate training programs and assessments according to their contribution to the three program goals outcomes (reducing lead time, improving product capabilities, and reducing cost). Training will not have to be carried out on specific product corridors; any company engaged in textile trade with at least one CLV country could receive assistance from the workforce development program.

Specialized printing, dyeing, and finishing techniques require highly technical skills that are not likely to be taught in local training facilities; equipment manufacturers usually must provide technical assistance in these areas. To respond to buyers' concerns about quality and product development capabilities, the project will therefore work with textile and garment equipment suppliers (perhaps cofinancing the training, at least initially), and organize training on special equipment with applications to techniques and processes that are relevant to the product corridor.

INVESTMENT FACILITATION

Upgrading ASEAN supply chains will require new equipment as well as training. Although the ACE program cannot provide equipment (which often costs tens of thousands or hundreds of thousands of dollars), it can support efforts to coordinate funding from international donors (World Bank and IFC, Asian Development Bank, UN Trade and Development Program) and possibly national programs such as International Enterprise Singapore. First a survey can be conducted of available programs and their usefulness for financing the equipment of ASEAN textile and apparel firms. AFTEX could promote these programs, and the project could hold workshops for producers and suppliers on the possibilities offered. For suppliers in the product corridors, project staff might even assist with loan applications and work with banks to streamline access to finance, on a pilot project basis. Such efforts could be leveraged to create how-to guides for ASEAN producers by country, region, or even type of equipment.

NEXT STEPS

Table 8 presents a work plan for the ACE program, specifying the time frame and the coordinating entity for each action.

Table 8
Summary Matrix and Model Activity Plan

Activity	Target Time Frame (beginning July 1, 2008)						Coordinating Entity
	Q1	Q2	Q3	Q4	Q1	Q2	
ASEAN DIRECTORY UPDATE AND CORRIDOR DEFINITION							
Association members submit updated producer lists	X						AFTEX
Malaysia combines lists into database							MTMA
Common data fields defined	X						ACE
Arrangements made for data entry of directory listings	X						ACE, AFTEX
Directory information verified and augmented (by phone and e-mail)	X	X	X				ACE, AFTEX
Data mining of existing database	X						ACE
Phone and e-mail survey of targeted product groups define players in ASEAN textile trade		X					ACE
Product-specific corridors selected		X					ACE, AFTEX
ASEAN web directory updated with new data and enhanced search capabilities		X					ACE, AFTEX
DIAGNOSTIC OF PRODUCT-SPECIFIC CORRIDORS							
Baseline data (delivery time, product capability, cost) compiled for comparison to data on China		X	X				ACE
Service and allied industries identified for inclusion in database			X				ACE
Product corridor directories developed				X			ACE, AFTEX
Constraints on ASEAN product corridors addressed				X	X	X	ACE
WORKFORCE DEVELOPMENT							
Regional training programs and resources surveyed	X						ACE
ASEAN-specific training programs defined		X	X				ACE
Study trips sponsored or cosponsored	X	X	X				ACE
Certifications developed			X				ACE\AFTEX
Product development workshops cosponsored with equipment manufacturers			X	X	X		ACE\AFTEX
INVESTMENT FACILITATION							
Funding sources surveyed	X						ACE, AFTEX
Investment and funding guides for ASEAN textile and apparel developed		X					ACE, AFTEX
Pilot program for investment facilitation developed				X	X	X	ACE