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A Subsector Approach to Small Enterprise Promotion and Research

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7250 Woodmont Avenue, Suite 200, Bethesda, Maryland 20814

DEVELOPMENT ALTERNATIVES, INC. • Michigan State University • ACCION International • Management Systems International, Inc. • Opportunity International • Technoserve • World Education

A Subsector Approach to Small Enterprise Promotion and Research

by

James J. Boomgard
Development Alternatives, Inc.

Stephen P. Davies
Colorado State University

Steven J. Haggblade
Development Alternatives, Inc./GEMINI

Donald C. Mead
Michigan State University

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ABSTRACT

This paper introduces a diagnostic research methodology designed to help target small enterprise development efforts in developing countries. It argues that research should focus on commodity-specific subsectors, which include the competing channels and supporting input and output linkages of small firms. Using this approach, an analyst can improve his understanding of small enterprise dynamics, as well as learn about interventions that may promote small enterprises at low cost and policies that constrain small-firm growth.

SECTION ONE
INTRODUCTION

After more than a decade of experimenting, micro- and small-scale enterprise (MSE) development is attracting growing attention among private voluntary organizations (PVOs), donors, and Third World governments.[1] Widely publicized programs such as the Grameen Bank in Bangladesh, the Badan Kredit Kecamatan village financial system in Indonesia, and ADEMI in the Dominican Republic have sparked a swell of optimism among institutions seeking effective channels for assisting the poor. Potentially consistent with both poverty alleviation and growth-oriented development strategies, MSE development has found a niche in the portfolios of many development agencies. Yet as their enterprise development portfolios have grown, these groups have found few tested road maps for strategy formulation, program design, and implementation.

The vast majority of enterprise development programs and projects have been based on the delivery of credit, training, and technical assistance directly to targeted MSEs. Because such multi-input, direct-assistance efforts often have failed to reach large numbers of MSEs, they have proven to be expensive per beneficiary. This has given rise to a new generation of assistance efforts, the so-called "minimalist" programs, which usually limit assistance to the provision of short-term working capital at market interest rates. These programs have often been cost-effective and sometimes are close to being financially self-sustaining.

Despite the important achievements of minimalist programs, they do not address a number of important challenges in enterprise development. Working capital infusions may indeed contribute to the improved performance of MSE, but only for some firms, at some stages in their life cycle (Boomgard, 1989). For those enterprises facing broader constraints and opportunities tied to firm growth and transformation, there remains a need to find cost-effective ways of supporting MSE development.

For the past 10 years, the authors have been involved in a search for ways to improve the efficiency of MSE interventions. In our pursuit of appropriate diagnostic tools, we have returned to earlier approaches in industrial organization — to the methods used by Robinson (1958), Mason (1939), Wallace (1937), and Nichols (1951). With the benefit of later developments in the agricultural marketing literature, transactions costs economics, and recent work on rapid appraisal. we have applied these time-tested tools to analyze the constraints and opportunities facing MSEs. This approach emphasizes the forces that influence the competitive position of MSEs within single product groups, or subsectors. We call this methodology the subsector approach.

The subsector approach places considerable weight on understanding the interaction — both competitive and complementary — among firms of different sizes and in different functions, including those involved in manufacturing, commerce, and services.[2] Moreover, this approach acknowledges the potential value of indirect interventions, those that route MSE assistance via intermediaries. Even when assistance is provided directly to the MSE, supporting research using the subsector approach permits an understanding of the competitive context in which the target enterprises operate. In the following pages, we describe the analytical methods used in subsector research, the project and policy interventions it can identify, as well as its limitations.

SECTION TWO
THE SUBSECTOR APPROACH

THE STATUS QUO ANTE

To date, most small enterprise research has been descriptive rather than diagnostic. Modeled after pioneering survey efforts in Nigeria and the Indian subcontinent, the standard research procedures have involved street-by-street censuses of small enterprises, in which snapshots are taken of firm numbers, employment, and sometimes equipment and inventory.[3] Enumeration has typically focused on manufacturing establishments while excluding most services and trading firms.[4]

These studies have been instrumental in making the case for small enterprise promotion. They have generated reliable data documenting the considerable magnitude of small manufacturing output and employment. Perhaps more important, the detailed micro data generated by these cross-section studies have demonstrated the economic efficiency of small enterprises across a range of industries, primarily those supplying consumer goods (White, 1978; Chuta and Liedholm, 1979; Liedholm and Mead, 1987).

But the cross-industry surveys offer only limited direction on how to proceed with promotion efforts. As Schmitz (1982, p.188) has said,

> Cross-section surveys of small-scale enterprises can help to identify those branches in which their numbers are significant; they can help to identify some other basic variables such as number of workers, age of enterprises, legal status and so on; however, **they should not be expected to reveal the growth opportunities or constraints of small producers**" (emphasis added).

In contrast, subsector research aims to provide operational direction for small enterprise promotion. It is diagnostic and prescriptive. Because subsector research answers different questions and provides an operational orientation, we view it as a complement to the cross-industry studies, not a substitute.

THE CENTRAL CONCEPTS IN SUBSECTOR RESEARCH

Subsector research views small enterprises as interacting with other firms — both large and small — in vertical production/distribution systems. Also, by examining the competitive position of firms in alternative supply channels, it aims to understand the dynamic forces at work. The dynamics, in turn, often prove key to identifying growth opportunities and constraints, and hence the potential for policy or project interventions.

Subsector research revolves around four principal concepts: verticality, coordination within channels, competition between channels, and leverage. Verticality is central. Small enterprises are participants in vertical production/distribution systems. They procure inputs from a variety of suppliers and market their output through other firms. They face competition from both large and small firms, which are vertically integrated to differing degrees and use diverse technologies. Frequently, large firms serve as input suppliers, output distributors, or competitors. Because of these relationships, coordination with firms performing related functions is central to small-firm dynamics, as is competition with alternative supply channels. The other channels may have efficiency advantages in producing the same product, or competitive advantages through access to better supplies or marketing arrangements.

Leverage, crucial to cost-effective intervention, is highlighted by the vertical perspective. Because of high transport and communications costs, individual contact with hundreds of small firms can be very expensive. Leveraging promotional efforts, by intervening in ways that affect large numbers of small producers at a single stroke, reduces per-unit costs. By focusing on a single product market, subsector research facilitates the identification of constraints affecting large numbers of small firms.[5] And within a given subsector, the vertical perspective allows the analyst to seek out opportunities for highly leveraged interventions. It highlights "system nodes," the points at which large volumes of product pass through few hands or restricted geographic space. In many cases, for example, wholesale markets or distribution points offer opportunities for contacting dozens, perhaps hundreds, of small firms in a single visit. Similarly, a handful of key input suppliers can channel improved products or information to a multitude of small clients.

In analyzing vertical coordination and integration, the researcher is led logically into the domain of the New Institutional Economics (NIE) (Williamson, 1975; Nabli and Nugent, 1989). That theory holds that transactions and information costs, especially in the presence of asymmetrically held information and variable market power, strongly influence the nature of contracts and the extent of vertical integration.[6] The resulting institutional relationships affect the competitive position of MSEs, and the ease of coordination and the obstacles to growth in different channels. The level of transaction

costs clearly affects the gains from leveraged interventions at system nodes as well. The NIE emphasis on the possibility of opportunistic and rent-seeking behavior when transaction costs are significant suggests that the design of interventions at system nodes might be more difficult than it seems at first. A more complete elaboration of these ideas constitutes a major part of our research agenda.

THE PRACTICE OF SUBSECTOR ANALYSIS

The methods used in subsector analysis have been described in some detail by Boomgard et al. (1986), and they are briefly summarized in Table 1. They have been adapted from methods developed in the early industrial organization industry studies, the agricultural marketing literature, and recent work on rapid appraisal.[7] Although the analytical techniques are not new, their application to small enterprise diagnostics is.[8]

Subsector analysis begins with the selection of a product group in which small enterprises are important; selection is usually based on enterprise size, location, equity implications, or expected patterns of change. The analyst must then identify the principal functions, participants, and channels of the product group. In the case of the sorghum beer subsector, for example, the important functions (or vertical levels) include malting, brewing, and retailing (Figure 1). The key participants include home brewers (vertically integrated in differing degrees), commercial maltsters, factory brewers and retailers. The subsector map highlights the vertical relationships and competitive positions of subsector participants.

Together, this matrix of functions and participants delineates the principal channels through which raw materials are produced, transformed, and distributed to final consumers. We define this matrix of competing supply channels as a subsector.[9]

After outlining the subsector map, the analyst will need to identify overlays of special interest to the investigation. The subsector map in Figure 1 includes enterprise numbers, a common initial overlay. In some cases, it also becomes important to identify employment, sales, product volume, or inventory holdings throughout the system. Other, less quantitative, overlays can be included; tracing the variety of contract relationships in different channels or the sources of trade finance are examples. Basic budgets — which trace price markups, costs, and value added throughout the subsector — demand considerably more time and ingenuity than do the other common overlays.[10] But budgets open up broad new vistas. Not only do they allow an assessment of current competitive pressures. They also make it possible to assess the impact of macroeconomic changes — in tariffs, taxes, exchange rates, wage rates, agricultural income, and aggregate demand — on the profitability and growth of MSEs.

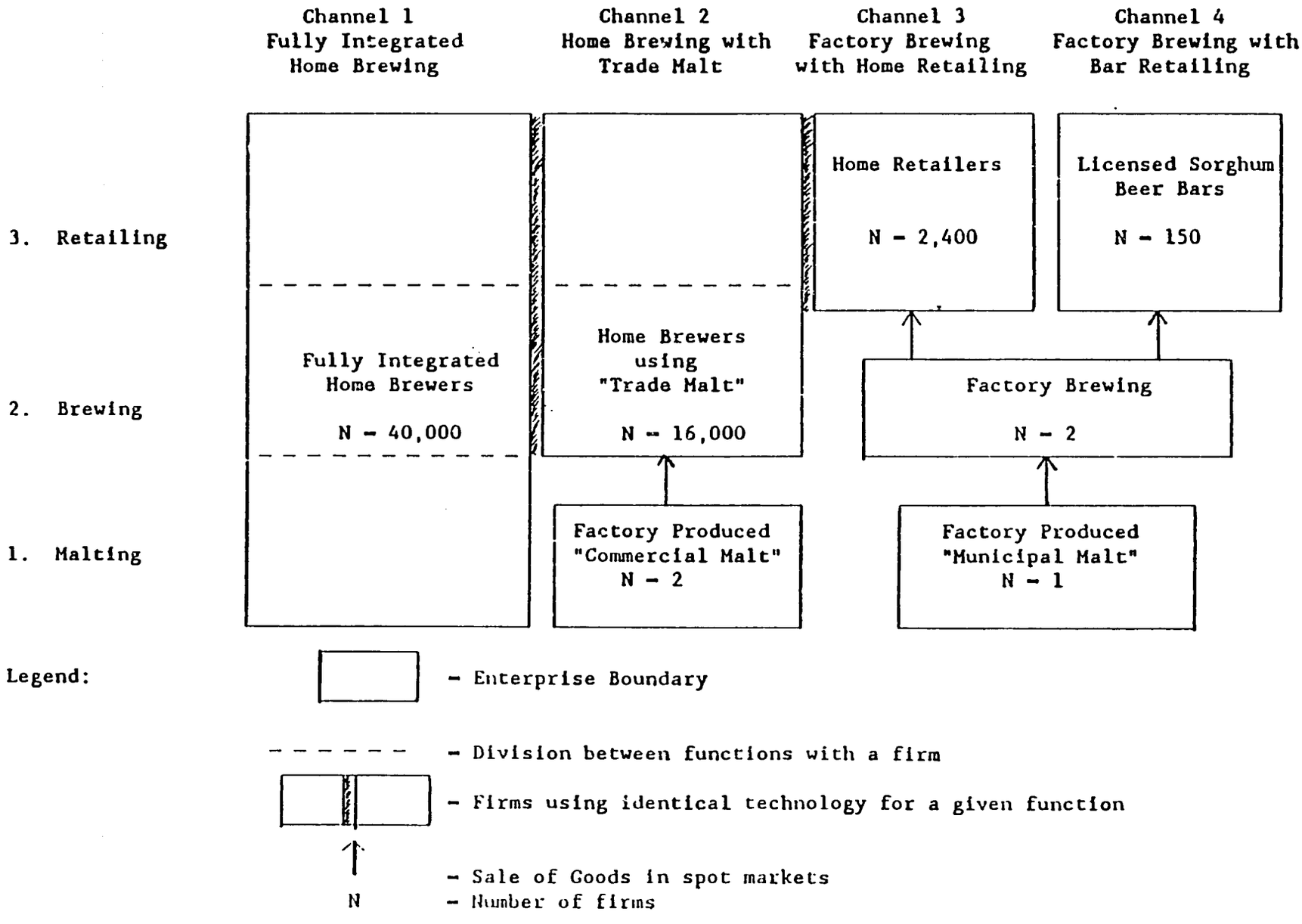
Table 1[a]

Summary of Procedures for Subsector Analysis

Procedure	Content	Information Sources	Comments
1. Select subsector to be studied	o overview of small enterprise population o identify important or interesting activity for study	o data: surveys of population, labor force, small enterprise o key informants: donors PVOs, business groups, government	o common criteria: size, activity experiencing major change, important to vulnerable groups, priority region o generally selected prior to field work o define based on output market
2. Draw basic subsector map	o define number of functions (vertical levels) to be included o identify principal participants, firm types, channels and coordinating mechanisms	o subsector participants; key informants often include wholesalers or input suppliers	o most important and useful of all steps o showing sketch focuses informant interviews o map changes over course of the study as understanding improves
3. Specify environment	o regulations: zoning, licensing, labor, retailing o policies: tariff, tax preferences o macroeconomic issues	o subsector participants o legal statutes o government offices o business Associations	
4. Identify "overlays" of particular interest	o enterprise numbers (N) o employment (L) o sales value (S) o value added (VA) o investment requirements (K) o inventory (INV) o technological variations		o selection depends on purpose and budget o key decision is whether to collect firm budgets
5. Collect focused data	o as in specified overlays	o field interview with subsector participants o technical personnel in industry, government, PVOs o trade or industry statistics o consumption studies	o accuracy of estimates greatly increased by key informants at system nodes o level of sophistication varies considerably, can use careful sampling or rapid appraisal techniques
6. Analysis	o identify key dynamics o compare competitiveness of major channels o assess changes in vertical relationships among firms	o enterprise budgets o consumption studies o key informants at system nodes	o changes in competitive position often alter vertical relationships (coordinating mechanisms) o transaction costs literature helpful in analyzing vertical relationships
7. Policy and program recommendations	o what role can SSE play in this subsector? o how can their contribution or transition be facilitated?		o search out leveraged opportunities first o see how policies advantage one channel over another

[a]Boomgard, et al., (1986) for details.

Figure 1: Botswana's Sorghum Beer Subsector, 1982



By interviewing subsector participants and key informants, and supplementing with selective and focused data collection, it has been possible to gain a basic understanding of subsector dynamics in a relatively short time, often as short as two to four weeks.[11] Three vantage points have proven especially valuable in viewing subsector dynamics. First, firms operating at **system nodes** — usually large wholesalers or input suppliers — are often well placed to observe changes in the system. Because they are few, they register most volume and quantity changes between channels. Indeed, they themselves are often the forces driving observed changes. Second, **enterprise budgets** reveal cost structures and sources of MSE competitiveness. They prove central to forecasting the rise and fall of alternative production/distribution channels. Third, **consumption studies** can be invaluable in estimating aggregate output across all channels as well as offering insights into future demand patterns.

To identify cost-effective interventions, one needs to look first for highly leveraged opportunities. Figure 1 illustrates how the subsector map can help to identify such intervention points. Two commercial maltsters supply sorghum malt to 16,000 home brewers, with the potential to reach 40,000 more. Thus promoting improved malt through commercial maltsters offers a potential gearing ratio of 20,000:1. The possibility of rent-seeking behavior by commercial maltsters would need to be recognized in the design of a project with such an approach.

Examples from recent subsector studies follow to illustrate the types of insights to be found using the subsector approach. The role of MSEs, the obstacles and opportunities for growth, and the potential interventions are highlighted.

SECTION THREE
ILLUSTRATIONS FROM TWO CASE STUDIES

To date, between one and two dozen studies have applied these diagnostic methods to commodity subsectors in which small enterprises predominate.[12] A series of common themes has begun to emerge from this work, and the two representative case studies discussed in this section illustrate both the methods and the types of interventions that subsector analysis can reveal.

SORGHUM BEER IN BOTSWANA[13]

The most popular prepared beverage in Botswana is sorghum beer, an effervescent, sour-tasting brew the consistency of thin porridge. Its distinctive taste, low price, low alcohol content, and acknowledged nutritional reputation ensure widespread popularity that translates into considerable economic muscle. About 14 percent of Botswana's work force earns some income from sorghum beer brewing or retailing, making it the largest nonfarm employer in the country. Brewing employment is especially prominent in rural areas where it accounts for 60 percent of rural manufacturing income. And distributional considerations magnify the importance of sorghum beer since middle- and low-income households, especially those that are headed by females, depend most heavily on sorghum beer income.

Sorghum beer supply networks perform three principal functions: malting, brewing, and retailing.[14] In effecting these functions, participants route inputs and final product through four alternative supply channels (Figure 1). Two of the channels revolve around home brewers, 56,000 strong, who supply 70 percent of the volume of sorghum beer consumed. While all home brewers retail their own production, they procure malt from two different sources. About three-fourths of them malt their own sorghum in preparation for brewing, while the remaining one-fourth purchase commercially manufactured "trade" malt.

The two remaining supply channels center around factory brewers who, unlike their home-based counterparts, specialize exclusively in brewing. On the input side, they purchase high-quality "municipal" malt from foreign suppliers. And to distribute their beer, they sell in bulk to specialized retailers. The two factory-brewing channels differ only by retail outlet. The licensed sorghum-beer bars retail 70 percent of the factory-brewed sorghum beer, and unlicensed home retailers, called *shebeens*, distribute the remaining 30 percent. *Shebeens* procure two-thirds of their factory brew from brewery delivery trucks but purchase the remaining one-third at unfavorable retail prices from bars. The retail

procurement is at times the only source of factory brew because influential licensed retailers prevent brewery drivers from delivering directly to *shebeens*.

Technology differs considerably across channels. Malt, the key determinant of product quality and input economy in brewing, is produced by three alternative technologies. Least sophisticated is home malting, carried on outdoors using little more than shovels and burlap bags. In contrast, trade maltsters run small factories with rudimentary temperature and humidity controls and other equipment amounting to $2,000 per worker, while the highly mechanized municipal maltsters operate equipment worth $20,000 per worker. Brewing technologies contrast just as vividly. Where home brewers produce 200-liter batches in iron drums with simple wooden paddles and grass filters, factory brewers cook maize grits by steam injection in 15,000-liter stainless steel vessels, inoculate with pure yeast cultures, and filter through high-r.p.m. centrifugal decanters.

Because of the vastly different technologies, employment and value added vary considerably across channels. The employment figures and budget breakdowns can be thought of as overlays on the basic subsector map. Displayed elsewhere (Haggblade, 1987), these overlays reveal that the two home brewing channels support three-fourths of all subsector employment, when measured in full-time equivalents. In the two factory brewing channels, retailing emerges as most prominent. It accounts for a further 20 percent of subsector employment and for half of all income earned in the factory brewing channels.

Over the past 25 years, subsector dynamics reveal two key changes: expansion of factory brewing and an increasing use of trade malt among home brewers. Several forces are driving these trends. First is the development of new technology in malting and brewing. In the mid-1950s, after half a century of difficulties, technical research identified the key microbiological processes, optimal temperatures, and control systems that made it possible to brew large batches of sorghum beer of consistent quality and acceptable shelf life. Together with the improved malt that made large-scale brewing possible, the new factory brewing technology spilled over into Botswana in the mid-1960s.

A second force accelerating the growth of factory brewing was new corporate ownership of Botswana's factory breweries beginning in 1979. With aggressive new management, they launched a successful expansion campaign that doubled output within three years. Third, rising urbanization and employment opportunities for women have increased the opportunity cost of home brewing labor. This diminishes the profitability of home brewing, especially in urban areas where the bulk of population, income, and growth in sorghum beer demand is occurring. Fourth, the colorful packaging of factory-brewed sorghum beer, together with marketing appeals aimed at the increasingly affluent young consumer, increases the prestige of factory-brewed sorghum beer. Finally, the traders who operate

licensed sorghum beer outlets periodically use their influence to prevent home-retailer access to factory brew, except at retail prices. Although Botswana's legal texts explicitly exempt home retailers from licensing requirements for selling both home- and factory-brewed sorghum beer, the wealthy license holders have succeeded in capturing 70 to 80 percent of the lucrative retailing of factory-brewed sorghum beer.

Several consequences have accompanied this transformation. As a result of the factory brewers' increased market share, employment in the sorghum beer subsector has fallen 30 percent. At the same time, because of partial foreign ownership and the higher import content of factory-brewed sorghum beer, national earnings from sorghum beer have declined by 5 percent. And income distribution has worsened considerably. The rise of factory brewing has transferred earnings from poor and middle-income groups to the very wealthy, from women to men, and from rural to urban areas.

Two interventions may help improve the situation. First, it may be possible to bolster home brewer competitiveness by improving their technology. By shifting from homemade malt to higher-quality, commercially produced sorghum malt, home brewers can reduce grain inputs by 40 percent, thereby lowering production costs, raising profits, and at the same time improving brew consistency. Moreover, this intervention point occurs at a subsector node through which two maltsters currently supply 16,000 home brewers. With modest encouragement or support, the maltsters have the potential to reach 40,000 more, thus raising the possibility of a highly leveraged intervention. Rent-seeking behavior and a consequently skewed distribution of benefits is always a danger in such indirect intervention via large-scale surrogates. But, in this instance, the danger is mitigated by potential competition from malt producers in the surrounding South Africa Customs Union Agreement countries.

Second, because retailing accounts for half of factory brewing income, home retailer access to factory-brewed sorghum beer will be essential in reversing the substantial and inequitable transfers that have resulted to date from the expansion of factory brewing. Because of the recognized employment and distributional benefits of home retailing, Botswana's commercial code explicitly exempts home retailers of home- and factory-brewed sorghum beer from licensing requirements. For this reason, the Ministry of Commerce and Industry, with advice from the Attorney General's office, has requested that District Councils help stop the illegal harassment of home retailers. This, too, represents a highly leveraged intervention, since it influences thousands of home retailers at a single stroke.

RATTAN FURNITURE IN INDONESIA[15]

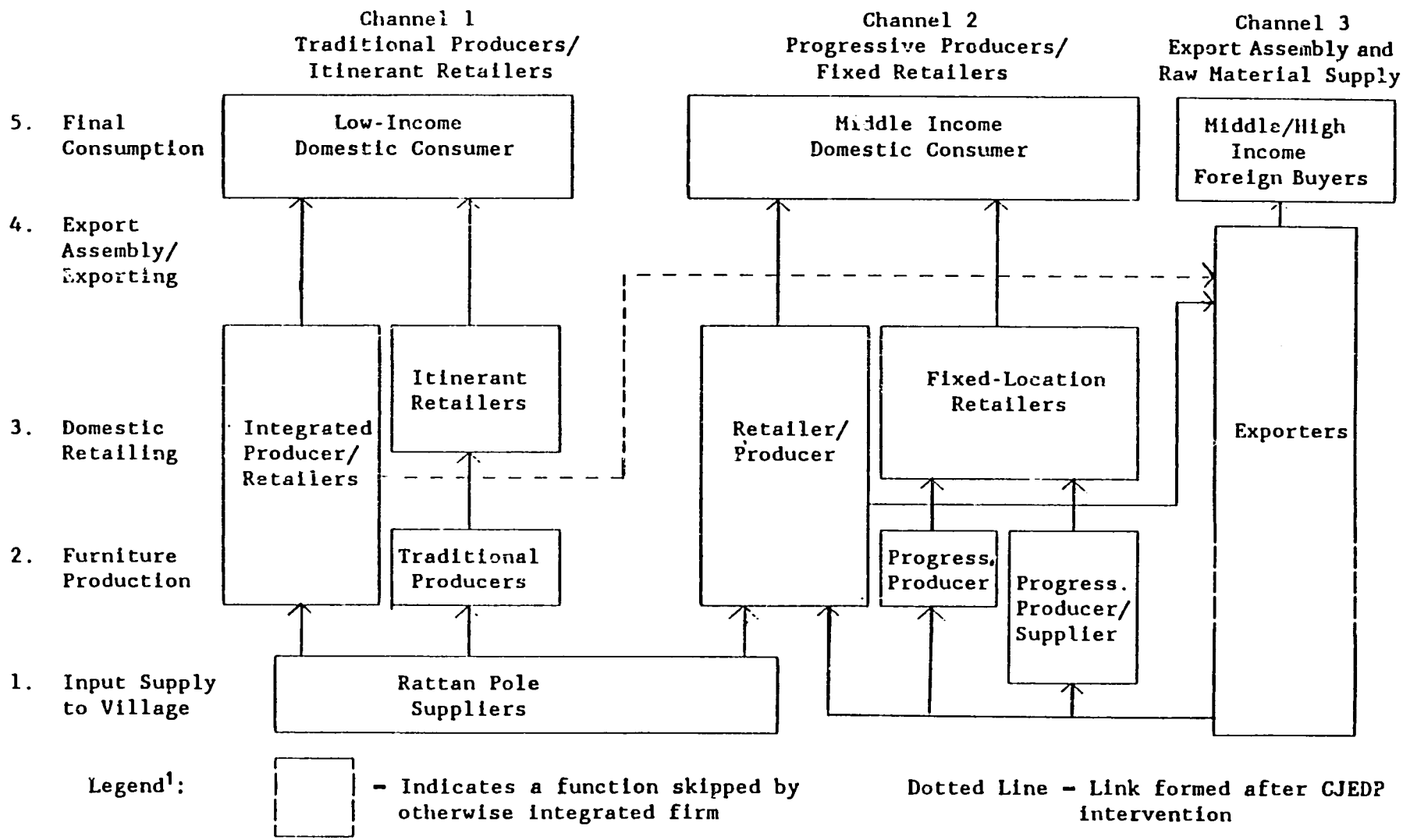
The second case study was undertaken as part of the monitoring and evaluation of the Central Java Enterprise Development Project (CJEDP), the first USAID-financed small enterprise development project with an explicit subsector orientation. In this subproject, discussed below, CJEDP attempted to increase rattan furniture exports from a village in Central Java that specialized in rattan production. Among other things, this case study illustrates the use of the subsector approach at a village level as opposed to the national analysis given in the preceding section.

The subsector map shown in Figure 2 depicts the three alternate channels used to transform raw rattan poles into finished rattan furniture delivered to final consumers. In the traditional channel, shown in the left-hand column, raw materials are supplied by two distributors located in the village. The producers in this channel use family labor for the most part and produce a low-quality product. They sell furniture most often to itinerant retailers who carry it by bicycle to surrounding villages and towns. Sometimes these retailers come from the producer's family, so production and retailing are integrated as shown in the map. These firms are rarely integrated backwards into raw material distribution.

The middle channel centers around progressive manufacturers, who hire labor and produce better furniture from higher-quality rattan. Some of these furniture makers are integrated forward into retailing, and have their own fixed-location stores in the nearby city of Solo. Also, they occasionally integrate backward into raw material distribution by purchasing rattan poles in bulk and selling to other producers in the village. Most of the production from this channel goes to higher-income consumers and is sold through fixed-location rather than itinerant retailers. The final channel is the export channel, in which the primary functions are sourcing raw materials of export quality and assembling and marketing furniture for export. The furniture itself is produced by the village firms, which are, normally, progressive producers. (After the training program given to all village producers by CJEDP, the traditional producers participated more in this channel.)

The three channels differ chiefly by the location and income of the final consumer, which in turn implies differences in the quality and cost of the final product. In the traditional channel, low-income customers are served primarily by itinerant retailers and producers using family labor and reject-quality raw rattan. The products are not usually stained or finished, and the rattan poles are often discolored with small and varying diameters. In the second channel, formed around the progressive producers and higher-income domestic consumers, the furniture is often finished and stained and is made from better-quality rattan poles. Exports should be made of even higher-quality rattan poles and have still better finishing. The competition between the progressive and traditional producers is thus not in the output

Figure 2: The Rattan Furniture Subsector, Trangsan, Central Java, 1986



[1]The Legend shown in Figure 1 also applies to Figure 2

market, since they produce for different customers, but rather for inputs. The better raw materials are captured by the progressive producers, either because they can pay more or because they have first access to inputs when they act as suppliers.

The number of firms of each type and their employment and sales values were estimated as overlays to determine the relative importance of each channel. During the month of July 1986, 44 traditional firms employed nearly two-thirds of all laborers, but sold slightly less than half of total output. Two-thirds of their employees were family members. In contrast, the nine progressive producers, with one-third of the employees, shipped slightly more than half of all furniture produced in Trangsan. Half of the traditional firms sold some furniture through retailers from their own family, but this only accounted for 20 percent of all sales. However, two-thirds of their production was sold to itinerant retailers or to customers who came to their shops. Exports were significant during that month as well: traditional producers sold one-tenth of their production to exports while progressive producers sold almost one-third of their output to that outlet.

Two final overlays evaluated the source of market information and the supply of trade credit in the different channels. Traditional firms determine the volume and composition of their production by the frequency with which itinerant retailers appear at their doors. With little advance information, they do not know how much to produce of each product or how much will be taken by the retailer. As a consequence, they cannot produce extensively for inventory, most likely have underutilized labor, and miss sales opportunities. The progressive producers sell more often to fixed-location retailers and institutions — buyers which often give custom orders for specific quantities and varieties. They can thus buy inputs in bulk, hire labor in anticipation of demand, and achieve some economies of specialization.

The extent of trade credit also varies by channel. Traditional firms usually sell on consignment to itinerant retailers or final consumers who come to their doors. Therefore, they normally finance retailing inventories on two-thirds of their sales. Additionally, they only receive about one quarter of their inputs on credit. Progressive producers, in contrast, only sell 34 percent of their production under conditions in which they have to finance the finished goods inventory, and they receive credit on about 45 percent of their input purchases. Thus, production in the traditional system is financed by the manufacturers but, in the progressive channel, finance is provided by the other participants in the system as well.

The traditional and progressive channels exist in related but separate market niches and face different pressures. The traditional channel provides as much low-cost furniture as possible by making use of family labor, labor-intensive retailing methods, and the lowest-quality raw materials. Stagnant demand, low prices, and low remuneration are the major characteristics of this channel. Little cost

reduction is possible either in input quality or labor costs, so negative economic events push those firms out of business. As these traditional MSEs often operate at the margin, capital conservation and risk aversion are also important characteristics of the channel. The use of itinerant retailers, consignment sales, and family labor are all manifestations of these concerns.

With a higher-cost product, a wider customer base with more income, and more management ability, the progressive firms have more room to adjust to changing circumstances. Some specialization is possible, and, if needed, they can change input quality, substitute family for hired labor, and rely more on custom orders before undertaking production. They are thus able to grow consistently but do not have the marketing sophistication or resources to sell in the international market.

The key to the growth and better incomes for both types of producers is to make higher-priced products and link themselves to expanding markets. Traditional producers can be assisted to sell more in the domestic urban market. Upgrading their production capability is necessary, and so is helping them contact better retailers and input suppliers. With the rise of modern urban firms using assembly lines, the scope for this outlet may be limited. Export markets, if they can be reached, are a better target, and were chosen by CJEDP in their project. Both progressive and traditional firms can benefit from exporting, but they each required training to scale up the village output to export quality. For this reason, the first part of the CJEDP intervention was to train all firms in the village. The subsector orientation of CJEDP also led to the second intervention, which was to assist a domestic exporter to assemble production from the village producers and sell it in the export market. The key recognition was that, although the small firms could not export themselves, their products could be internationally competitive. A leveraged intervention at another point in the subsector was necessary to make this possible.

One policy issue, specific to the subsector, affects the outlook for these MSEs. Indonesia has recently banned the export of raw rattan poles to promote its own furniture industry. Paradoxically, this has caused rattan prices to increase in the domestic market and shortages to occur. Foreign firms from the Philippines and Malaysia had been financing the harvest primarily to supply their own factories, but they had also provided raw materials to the domestic Indonesian market. Less product has been available since the foreign operations are no longer active. Also, semiprocessed rattan poles can still be exported for a limited time, so the demand for them is unusually high. Policies that enhance competition in the raw rattan market are essential for the village producers to have easier access to better-quality product.

OPERATIONAL IMPLICATIONS

Policies

Four general policy implications emerge from these case studies. First, opportunities for policy reform are frequently subsector specific. Both the illegal harassment of sorghum beer retailers in Botswana and the dampening effect of Indonesia's rattan export restrictions on small furniture manufacturers affect single subsectors. General cross-industry studies normally fail to identify these opportunities for improvement through policy change. Based on the detailed information compiled on a given subsector, policies may be targeted and the benefits and costs of policy change carefully assessed.

Second, policies may impinge on small firms indirectly, through input suppliers or output distributors. In the Indonesian case study, restrictions on rattan export limited small firms' access to their key input. At the other end of the distribution chain, Botswana's home brewers faced restrictions on their retailing activity. In both cases, the vertical dimension of subsector research was crucial to detecting the policy constraint.

Third, policies influence small firms through their effects on competing supply channels. The misapplication of licensing laws on behalf of large sorghum beer retailers is a clear example of this. In other settings, the availability of subsidized credit and tariff and tax benefits frequently confer advantages on large firms rather than their small-scale competitors.

Fourth is the reminder that policies represent a classic application of leverage. With a single stroke, they can influence thousands of small firms at once.

Projects

The subsector perspective aims to identify system blockages, pressures, and dynamics. In so doing, it pinpoints potential project interventions aimed at breaking bottlenecks and realizing opportunities. In many cases, these opportunities focus on input supply, as with sorghum malt and many others.[16] Output marketing may likewise constrain growth, as it did among Indonesian rattan producers and in the CJEDP export development project that aimed to increase market outlets.

Technical upgrading may hold the key to improving product quality and expanding markets, as was the case with both the rattan furniture producers and home brewers. In these instances, project interventions revolve around technical upgrading, and facilitating the move of small firms to ascendant channels and out of uncompetitive ones. The commissioning of technical research emerged as important

in several subsectors not reviewed here as well, such as Indonesian shrimp hatcheries and Rwandan banana wine production.[17] In other cases, extension of existing, on-the-shelf technology became the focus of attention, as with malt upgrading among Botswana's sorghum beer brewers and improved equipment and finishing techniques among Indonesia's rattan furniture makers. A marketing component will often accompany these efforts, as in the case of the Indonesian rattan furniture promotion efforts by CJEDP, since the move to faster-growing markets will require both better products and a shift in retailing methods.

Project interventions, like policies, may present opportunities for leveraged interventions. And the gearing ratios can be substantial. At one extreme, Botswana's two commercial maltsters can potentially serve an additional 40,000 home brewers, offering a gearing ratio of 20,000 to 1. Similarly, a study of the Egyptian garment subsector has pointed out that a dozen large wholesalers indirectly controlled the flow of cloth to thousands of tailors and dressmakers, offering a gearing ratio of 650 to 1 (Davies, 1988a). And in a subsector project in Central Java, nine shrimp hatcheries supplied fry to 3,000 small pond owners, resulting in a gearing ratio of 333 to 1 (Boomgard, 1985).

While leverage frequently results from intervention via large firms, other vehicles are also available. Locations, for example, serve equally well as levers, as recent work on Rwanda's banana wine subsector shows. Physical distribution points, where hundreds of banana wine makers converged daily, offer prospects for distributing yield-enhancing enzymes at low contact cost per firm. By systematically searching out these high-leverage intervention points, subsector research aims to identify the most cost-effective interventions first.

Yet practitioners must recognize the potential dangers present when high leverage is achieved via large firms. When small numbers of large firms limit competition, rent seeking may seriously skew the distribution of project benefits. In some cases, contingency contracts or share contracts where donors or other sponsors participate in the benefits will be necessary to ensure performance that improves the MSEs' position.

SECTION FOUR
STRENGTHS AND LIMITATIONS

STRENGTHS

Subsector research facilitates the understanding of major dynamics affecting MSEs, the identification of system blockages, and high-leverage intervention points. Moreover, these insights can often be gained relatively rapidly and at moderate cost. While Sections Two and Three have explored these capabilities in some detail, two additional attributes also merit discussion.

First, subsector research can improve accuracy and reduce the cost of data collection. Its emphasis on data collection at system nodes frequently allows estimates of small firm activity with far greater precision than would be possible in a cross-section survey of small enterprises. For example, interviews with two maltsters in Botswana enabled projection of home brewing output of 16,000 home brewers. Moreover, assembling employment, volume and budget overlays forces a juxtaposition of available data in ways not usually attempted. Reconciling the numbers frequently identifies candidates for improved data collection.

Second, the interventions identified in subsector analysis can often be characterized as "institutionally light." Because they focus on activities within one subsector, the interventions identified are often limited in scope, cost, time, and complexity. This, combined with their wide variety, suggests that subsector interventions may most appropriately be spliced onto existing organizations. Hence the approach does not necessarily require building up a large new institutional infrastructure in the way that credit, industrial estate, and technical assistance programs frequently do. Indeed, it may be most effective to endow a small analytical and funding arm to channel resources through existing technical personnel in the private sector, PVOs, or a government agency.

LIMITATIONS

The authors consider subsector analysis to be a powerful tool for identifying cost-effective MSE interventions. Yet the approach has important limitations as well.

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Because subsector analysis focuses on system linkages and bottlenecks, it is less effective in analyzing constraints internal to the firm. Other diagnostics, such as credit market studies or detailed management assessments, are required to assess the desirability of popular promotional activities such as credit and technical assistance programs.

Also, the vertical emphasis in subsector work makes it ill suited for the analysis of activities such as commerce, transportation, and finance, which cut across a great many vertical production-distribution systems. While these services may be important in the analysis of particular production/distribution systems, subsector analysis is not well equipped to examine, for example, retail trade as a whole or the financial system. Similarly, subsector analysts have yet to tackle important and rapidly growing service activities such as health, education, and utilities. In part this omission arises because MSEs play only a minor role in these areas. In addition, as public goods, they raise thorny analytical questions absent in other domains.

Finally, although we recognize that vertical linkages strongly influence small producers' competitive potential, our ability to analyze these coordinating mechanisms is still in its infancy. We believe that certain variables consistently play a major role in influencing patterns of linkages among firms: economies of size in transactions; efficiency in retailing, packaging and production; and the need to communicate product specifications. Others, such as the importance of trust, the need to minimize opportunistic behavior, and the effects of contracting methods, are much more difficult to evaluate. We are just beginning to understand their role and importance in our research.

ENDNOTES

1. The delineation of enterprise size is highly arbitrary, but for the purposes of this paper we have adopted the following categories based on the number of persons engaged:

1 - 10 persons engaged — microenterprise;
11 - 20 persons engaged — small-scale enterprise.

2. What we call a subsector, Schmitz (1982) refers to as a branch. We prefer the term subsector because it acknowledges analytical and historical roots in agricultural marketing literature. See Boomgard et al. (1986) and Section Two for details on the intellectual antecedents of subsector analysis as applied to MSE development.

3. One exception to the single-frame snapshot among cross-industry censuses has been the detailed survey work done by Michigan State University. In these studies, researchers have followed the census (Phase I) with year-long, twice-weekly visits (Phase II) to a cross-industry sample of firms in order to obtain detailed flow budgets. See Liedholm and Mead (1987).

4. Classic examples of the cross-industry survey approach begin with first-generation studies in Nigeria (Kilby, 1962), Bangladesh (East Pakistan Small Industries Corporation, 1964) and India (India, 1968). The second wave includes several dozen studies funded by the International Labour Office's (ILO) World Employment Programme, by the Agency for International Development through Michigan State University (MSU), and a variety of others. Chuta and Sethuraman (1984) and ILO (1986) summarize the ILO research, while Liedholm and Mead (1987) recap the MSU methods and findings. A host of similar studies include those by Ho (1980), Kilby (1982), Philippine Institute for Small Scale Industry (1977), and Steel (1977 and 1979).

5. For similar reasons, Schmitz (1982) and Dichter (1988) also recommend industry-specific diagnostic research and Tendler (1987) concludes that successful small enterprise promotion efforts often focus on single industries.

6. The literature in this area has grown rapidly since Williamson's seminal work on transactions costs and their effects on markets and contracts (Williamson, 1975). See Casson (1982) for a textbook explanation of these variables. Work has also begun to focus on transactions costs in developing countries. See, for example, Mead (1984) and Jagannathan (1987) in addition to Nabli and Nugent (1989).

7. See especially Shaffer (1973), Goldberg (1968), Marion (1976) and Holtzman (1986).

8. Following in the tradition of industrial organization industry studies, Kilby's (1965) study of the Nigerian bread industry adopted a perspective very similar to ours. After a considerable time interval, others such as Schmitz (1982, 1982a), Dichter (1988), Bendavid-Val et al. (1988) have also experimented along similar lines.

9. Decisions on how to delimit the subsector require judgement. The analyst needs to make decisions as to how many vertical levels to include and how large a geographic unit he or she can handle. See Boomgard et al. (1986) for a discussion of decision criteria.

10. Holtzman (1986) offers helpful pointers for piecing together accurate budgets at low cost.

11. The time requirements depend on the availability of existing data, the knowledge available from key informants, and the institutional base from which the study is done (in terms of logistical support, contacts, knowledge about the structure of the economy, and so forth). In cases in which background information and support along these lines are weak, the time required for field work can increase substantially.

12. See Kilby (1965), Schmitz (1982, 1982a), Dichter (1988), Nguyen-Hu (1988), Boomgard (1983, 1989), Central Java Enterprise Development Project (1984), Davies (1988, 1990), Haggblade (1984, 1987, 1989), Haggblade and Minot (1987), and Mead and Ngirabatware (1987).

13. This section summarizes the detailed descriptions available in Haggblade (1984 and 1987a).

14. Malting involves soaking any type of grain, allowing it to germinate for a prescribed period, then drying and milling it. The germination produces enzymes not present in the original grain that break down starches into sugars. This is a critical step in beer production, since it is these sugars that the yeast subsequently converts to alcohol.

15. The case study reported in this section is discussed in Boomgard (1988), Boomgard and Davies (1989), and Davies (1988a and 1990).

16. See also studies of Thai and Rwandan furniture (Boomgard [1983] and Mead and Ngirabatware [1987]) and Egyptian cloth (Davies, 1988).

17. See Boomgard (1988), Central Java Enterprise Development Project (1984), and Haggblade and Minot (1987).

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