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**CARE and Subsector
Analysis:**

**A Report on CARE's
Formative Experience**

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GEMINI

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CARE and Subsector Analysis: A Report on CARE's Formative Experience

by

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INTRODUCTION

Microenterprise practitioners share a growing interest in the use and application of subsector analysis concepts and tools in microenterprise development projects. Subsector analysis is not new to the development practitioner. Subsector techniques have been used by agriculture economists for more than two decades to evaluate market potential for major agriculture commodities. Application of subsector analysis to microenterprise development, however, has been more recent. The Growth and Equity through Microenterprise Investments and Institutions (GEMINI) Project has encouraged practitioners to use subsector analysis tools to implement cost-effective interventions designed to support microenterprise growth. Judging by the number of subsector studies that have been done over the last three years, interest in their application is increasing.

Yet the programmatic consequences of the analyses completed using subsector techniques have been little examined. Researchers have used the tools effectively, but how well do the tools suit the needs of operational program managers? It's one thing to perform analysis, yet it's quite another to organize findings from a subsector study into an operational program. The subsector analyst does not start with a programmatic model in mind: he or she identifies critical constraints to growth, looks for opportunities within the system to unblock these constraints, and searches for key points in the system where interventions can leverage benefits for many microenterprises at once. The potential interventions that result from the very best analysis could be single or multiple; they could range from policy reform to credit; from solving input constraints to technology development and skills transfer.

This report describes CARE's formative experience with the use of subsector analysis. Although it is premature to assess household-level impact that may result from the use of these techniques, CARE has learned some early lessons on the use of subsector tools by CARE program managers and field staff. The centerpiece of this report is CARE's experience with its Thai silk project for which some experience exists in the implementation of leveraged interventions. The report also draws from two other examples — CARE/Egypt's practical training in subsector analysis and CARE/Bangladesh's study on the bamboo subsector — to provide useful insight on the use and application of the tools for practitioners who are thinking of using them in their microenterprise programs.

A brief description of subsector analysis, its core concepts and tools, and of the Small Economic Activity Development (SEAD) Program in CARE sets the stage for CARE's experience.¹

SUBSECTOR ANALYSIS: CORE CONCEPTS AND TOOLS

What is a Subsector?

A subsector is a network of firms — micro, small, and large — that transforms raw materials into finished products and distributes them through supply channels to final consumers. Unlike the term "sector," which classifies different types of economic activity, the term "subsector" as used by microenterprise practitioners applies to different parts of an economy that are interconnected through a

¹ For more detail see GEMINI publications: "A Subsector Approach to Small Enterprise Promotion and Research," James J. Boomgard, Stephen P. Davies, Steven J. Haggblade, and Donald C. Mead, GEMINI Working Paper No. 10, January 1991; and "A Field Manual for Subsector Practitioners," Steven J. Haggblade and Matthew Gamsler, November 1991.

raw material — such as silk or cotton, or a final product — such as rattan furniture. A subsector includes economic activities from different sectors: the silk subsector includes agriculture enterprises — small farmers who grow mulberry, and manufacturing enterprises — weavers of silk cloth and reelers of silk yarn.

Any given economic subsector is made up of *participants* who engage in several activities, called *functions*, that transform a raw material into a marketed product. Participants who perform similar functions using similar technologies are linked together in a *vertical production and distribution chain called a channel*. A subsector normally consists of a number of different channels, each *competing* for market share. Participants within particular channels operate within a *coordinated system of exchange*, through interaction in the market.

What is Subsector Analysis?

A subsector is an economic system; subsector analysis is a set of concepts and tools used to assess the feasibility of intervening within the system. A subsector map is the central tool, among others, used by the analyst to study the structure and dynamics of a subsector.² The subsector map provides a picture of the economic relationships among all participants in the subsector. The map enables the analyst to analyze inter- and intra-channel dynamics and pinpoint pressure points within the system where an intervention could affect large numbers of subsector participants. This concept is called *leverage*. The goal of subsector analysis is to identify *interventions* that *leverage* opportunities for large numbers of subsector participants at once.

Why is Subsector Analysis Important for Microenterprise Programming?

"Increasing specialization is at the root of rising productivity, which in turn is fundamental to growth in income per capita."³ If microenterprises are to raise their productivity and grow, the enterprises must either narrow their range of functions and specialize, or get larger and integrate vertically with different production and market functions. These choices are difficult to make for microenterprises because they lack the information and the systems perspective to calculate the risks and rewards of making changes either by specializing or getting larger and less specialized.

The subsector analyst starts from a somewhat different assumption about microenterprise dynamics than is commonly held by support agencies. The entrepreneur may know more about her business than any external business support agency, but she lacks perspective and important information about the larger economic system in which her business operates: about markets and market trends, competitive pressures from similar businesses of the same or different scale, or government policies that effect prices or subsidies. This is vital information she needs to make business management decisions — to change the product and market mix, to purchase equipment for new products, to secure debt for increasing production, to lie low while prices are low, or simply to shift out of one business and go into

² See GEMINI publication: "A Facilitator's Guide for Training in Subsector Analysis," Marshall A. Bear, Cathy Gibbons, Steven J. Haggblade, and Nick Ritchie, December 1992, for a step-by-step, 17-session training course on how to do a subsector study. All the tools used in subsector analysis are introduced in this guide.

³ See GEMINI publication: "Dynamics of Microenterprises: Research Issues and Approaches," by Carl Liedholm and Donald C. Mead, Michigan State University, January 1991, page 30.

another. In short, the subsector analyst believes she can assist microenterprises to grow by providing a window to the larger system and with this perspective help guide decisions at the core of business growth.

CARE'S SEAD PROGRAM AND SUBSECTOR ANALYSIS

Small Economic Activity Development

CARE uses the term "small economic activity development" or SEAD rather than the more widely used "small enterprise development" to describe its efforts to help poor people raise their household incomes. The word "enterprise" conjures up the image of a formal business, with a workshop, skilled workers, and a market that provides a full-time living to its owner. However, CARE's beneficiaries who are interested in earning income from self-employment in rural and urban areas are often very poor people who may be landless without specialized skills, or semisubsistence farmers who sell a portion of their farm products.

The SEAD program in CARE spans this spectrum of size and sophistication, ranging from tiny informal activities, often called income generating activities (IGAs), to small established businesses, often referred to as microenterprises. CARE's SEAD program supports the development of economic activities at all points along the spectrum. IGAs are assisted because they are the only employment option for millions of poor people in developing countries; and microenterprises, though not operated by the poorest of the poor, are supported because they have the potential to provide employment to the poorest.⁴

Why is CARE Interested in Subsector Analysis?

The best answer to this question is to look at the different uses to which CARE program and project managers have put subsector analysis. Table 1 provides this summary.

Project Redesign

This is the most common use in CARE's SEAD program. Many SEAD projects work with rural farm-related or nonfarm enterprise activities using both financial and nonfinancial services. Project managers have found that rural entrepreneurs reach a threshold of risk after which access to working capital is no longer the principle constraint to enterprise growth. Knowledge of market opportunities, skills to improve product quality and output, and better organization between similar producers are chief among the constraints rural enterprises face. Managers are also concerned that many participants operate in static markets and CARE's intervention serves only to divide the pie into smaller pieces. Project managers have been attracted to subsector analysis to assess markets and identify opportunities for clients in existing SEAD projects. CARE/Thailand's SEAD program, designed to promote rural nonfarm businesses, used subsector tools to redirect interventions to those economic activities with greater growth potential. CARE/Togo chose subsector techniques for similar reasons.

⁴ CARE's SEAD program is a diverse portfolio of 36 projects in 17 countries working with 61,000 women and 25,000 men. The majority of projects aim to alleviate poverty by helping rural households to stabilize income from a mix of income generating activities undertaken to supplement household income. The portfolio includes projects designed to promote the growth of business with the dual goals of community economic growth and job creation.

Focusing Loan Fund Financing

CARE/Egypt explored the use of subsector analysis to redirect the activities of a community-managed loan fund toward activities with greater community economic benefits. The appropriateness of this application is discussed below.

TABLE 1
SUBSECTOR ANALYSIS ACTIVITIES IN CARE

Country	Activity	Objective
Thailand	Study of Thai Silk Subsector	Redesign of existing project for scale-up
	Subsector-based monitoring and evaluation system for silk project	Low cost system to monitor impact and cost effectiveness of interventions
	Studies of garment, and of pumpkin and cashew nut processing	Identify enterprise opportunities within existing SEAD project
Bangladesh	Study of Bamboo subsector	New project design resulting in new components in existing ag. extension projects
India	Study of rural dairy production in Uttar Pradesh	New project design resulting in operational project with urban dairy producers
Egypt	Subsector training combining classroom and practical field studies	Focus existing loan funds on growth-oriented economic activities
Togo	Study of green bean export market	Reorient rural development project to growth-oriented rural enterprises

Project Design

CARE in both Bangladesh and India used subsector analysis as a project design tool. This report provides a brief summary of CARE/Bangladesh's bamboo subsector study and programmatic applications. CARE/India recently started up a dairy project in Uttar Pradesh that resulted from the subsector study.

What is common in all uses of subsector analysis is the intent of SEAD programmers to achieve greater impact in their programs both in benefits to households and in reaching significant numbers of poor people at lower cost.

What have been some outcomes from using subsector analysis and what are some programmatic and management implications of their use within CARE? This report takes a closer look at three different

activities: Thai silk, Bangladesh bamboo, and the Egypt studies. Thai silk is presented in detail. The report asks and answers the following questions:

1. What was the background and rationale for undertaking the study?
2. What were the major findings and recommendations for the use of subsector analysis?
3. What changes resulted from the studies?

Following the Thai case, the other two cases are introduced only briefly so that a synthesis on the programmatic and management implications of using subsector techniques can be drawn from a broader body of experience.

CARE/THAILAND'S SILK PROJECT

In December 1990, CARE/Thailand conducted a three-week study of the Thai silk subsector with the assistance of the GEMINI Project.⁵ CARE/Thailand had been working with 500 rural households in helping them make the shift from traditional to modern silk raising methods. CARE used a multiservice, village-based assistance strategy to reach participating households:

- Silk raisers were trained in modern silk raising methods including the propagation of hybrid mulberry and the construction and management of improved rearing rooms to rear hybrid silkworms;
- Individuals were formed into groups to secure critical inputs (mulberry stakes and silkworm eggsheets) from government agencies, and to market cocoons and silk yarn to both public and private sector outlets; and
- Follow-up technical assistance was provided to solve technical problems as they arose and to provide information on changing prices and market options for raw silk producers.

The silk project was effective at increasing household income and productivity: rural households were able to earn as much as \$180 per year from the sale of silk cocoons, a significant increase over past silk earnings and an important addition to the average household income of \$360 per year. The increased household income resulted from dramatic increases in productivity.

CARE/Thailand was interested in expanding the silk project but needed a better understanding of the opportunities and risks in silk product markets before proceeding with a follow-on project. It was evident that households could increase income through adopting modern silk raising methods but the shift from traditional to modern methods was by no means risk free. CARE/Thailand knew that market prices of white cocoons were volatile, resulting in losses for some rural producers; that government policy on imports was changing and its effects on rural producers were unclear; and that new commercial-scale firms were entering the silk economy at the encouragement of government programs.

⁵ See "Opportunities for Intervention in Thailand's Silk Subsector" by Steven Haggblade and Nick Ritchie, GEMINI Working Paper No. 27.

The objective of the study was to identify opportunities and potential interventions that would enable CARE to scale-up its silk program and benefit a much larger number of rural households engaged in silk production. Program managers asked this question: Could CARE/Thailand retain the community-based direct assistance approach and scale-up its program on a cost-effective basis?

Findings and Recommendations

The study divided its findings and recommendations into three sections: subsector structure and dynamics, opportunities for CARE's target group, and leveraged interventions.

Structure

The structure of the Thai silk subsector was far more complex than CARE/Thailand had thought. The subsector was made up of five channels:

- Channel 1: *Traditional silk producers* integrate all functions, including mulberry, cocoon rearing, reeling cocoons into yarn, and weaving the yarn into silk pieces. They are characterized by low levels of technology and output and produce primarily for their own consumption. They also sell some surplus to neighbors and friends for ceremonial dress. This channel is in decline because the demand for ceremonial dress accounts for only 10 percent of the Thai silk market.
- Channel 2: *Household weft yarn producers* are traditional producers who have begun to specialize in the production of weft yarn using either native or improved yellow silkworms. They produce for the yarn market, selling their surplus to a network of yarn traders who sell to the weaving factories.
- Channel 3: *Small-scale modern Thai silk producers* specialize in the rearing, reeling, and weaving of modern Thai silk, which uses a combination of traditional yellow weft yarn and improved warp yarn. This channel is a creation of government efforts to stimulate local production of white warp yarn to displace imports mostly from China.
- Channel 4: *Large-scale modern Thai silk producers* compete in the expanding tourist market with channel 3 but with more sophisticated technology and greater capitalization. This is the domain of large reelers and weavers who produce in modern factories and subcontract to contract farmers and contract weavers.
- Channel 5: *Jim Thompson* is the market leader in the Thai silk subsector. This company integrates all functions of production and it defines the quality standard in each using the best designs and technology. The company has enjoyed excellent sales and profitability with the growth of the tourist markets.

Dynamics of the Subsector

The study identified the forces driving change in the subsector and how these changes affected the alternate channels in the subsector.

- **Market Demand:** The domestic tourist market was expanding rapidly in lockstep with the booming tourist trade in Thailand. Conversely, the market for ceremonial dress was declining as Thai consumer tastes shifted to more modern dress.
- **Technological Change:** The shift to tourist and export markets required producers to upgrade their technology in each function of production: hybrid silkworms and mulberry, better rearing rooms to control for temperature and disease, and more efficient reeling to reel expanded output.
- **Input Constraints:** There was a shortage of hybrid eggsheets and mulberry from government suppliers that affected all participants, small or large, engaged in modern silk production.
- **Government Policy:** Government policies on yarn imports vacillated between strict quotas of local purchase versus no quota. The shift in policies meant that one moment prices for local white cocoons and warp yarn were strong and the next moment they were difficult to sell because of lower cost imports.

Identifying Opportunities for Rural Households

The study assessed the comparative risks and rewards of shifting from traditional silk to modern silk markets. The study recommended that CARE focus its interventions on assisting rural households to specialize as producers of yellow weft yarn using improved eggsheets and reeling technology. Although the financial incentives were greater for weavers who could enter into subcontracts with the modern weaving factories, these opportunities were limited to households nearby the factories. Only a few of the 65,000 households engaged in yellow weft yarn production could make this shift. The next best return was to specialize as white cocoon producers and sell to reeling factories. This offered good returns and opportunity for many thousands of households, but it also exposed producers to competitive pressures and risks of price volatility associated with world market prices and government policies on silk yarn imports. The third opportunity was to specialize as producers of yellow weft yarn. Financial incentives existed over traditional production and the risks were minimal because prices of yellow weft yarn were stable and not affected by import policies.

Leveraged Interventions: Recommendations and CARE/Thailand's Response

The study recommended that CARE/Thailand focus its interventions on yellow weft yarn production. But, how could CARE/Thailand intervene so that it could benefit thousands instead of a handful of rural households?

The study team identified five potential leveraged interventions for CARE's target group. Each intervention is described, as are the follow-up actions taken by CARE/Thailand.

1. Propagate and distribute hybrid mulberry via nurseries or commercial farmers. Every silk producer needs mulberry but not all producers have the land resources to grow sufficient quantities or the access to quality inputs. The study recommended that CARE work with existing commercial nurseries to propagate and disseminate improved stock to surrounding villages. The nursery operators could provide a private sector alternative to government suppliers by selling both improved stock as well as services to graft hybrid varieties onto existing stakes of traditional mulberry plants.

Response: CARE acted on this recommendation. It adopted the concept but chose other mechanisms to implement it. The project identified field crop farmers who had made the shift to commercial silk production and had 3-5 acres of improved mulberry production. The project linked rural producers who needed improved stakes with commercial growers of improved mulberry and worked out an arrangement whereby silk raisers could cut stakes from commercial growers for a fee. Whereas in the past CARE helped producers source improved stakes from distant government suppliers, the project was able to solve this constraint by identifying local suppliers of quality stakes that proved to be equal in quality and lower in cost to the buyer.

2. Increase output of hybrid eggsheets by lobbying for reduced subsidies. The study concluded that government subsidies on eggsheets designed to increase production only hindered that effort. Government subsidies constrained government producers to expand production beyond limited budgets and deterred private sector supply. The role identified for CARE was to get a seat at the policy table and, once there, to advocate for changes in two key areas: (1) to emphasize the need for government investment in improving the quality and quantity of yellow over white eggsheets, and (2) reduce subsidies on eggsheet prices to encourage private sector involvement in this area.

Response: This has proved to be a difficult recommendation for CARE/Thailand to adopt for a couple of reasons. Policy advocacy was not a role CARE had played prior to the study. CARE's direct counterpart was the Provincial Governor's office and not the Ministry of Agriculture where these policies were debated and set. Also, silk is a multimillion dollar industry with powerful interests represented by powerful Thai companies. It was hard to see how CARE could parley its reputation as a competent field-based organization into a player at the policy level.

However, one outcome from the study did alter CARE's role and potential to influence government policy. The International Labor Organization (ILO) and the Thai Department of Labor (DOL) sought out CARE as a third partner in a project to promote rural enterprise as an alternative to job seeking in Bangkok. Silk was identified as one promising rural industry. Through this partnership, CARE had a venue to present its views to policy makers on policy options in the silk subsector and their impact on rural employment.

3. Distribute improved reeling technologies at assembly points or via yarn merchants. Lack of more efficient reeling technology was a major constraint for households that were able to increase output of hybrid yellow cocoons. Improved hand-operated and semiautomatic reeling machines were available in Thailand; they could increase reeling productivity threefold and double returns to labor time.

The study recommended that CARE/Thailand investigate the comparative costs and benefits of the different technology options, test them under field conditions, and distribute them to rural households. These interventions could be leveraged in two ways: improved reeling technologies could be demonstrated at assembly points — places where many household producers come to sell cocoons and purchase new eggsheets; and reeling machines could be distributed through the network of yarn traders who have frequent contact with thousands of producers and could benefit directly from the results of increase yarn output.

Response: As with mulberry, CARE acted on the recommendation but sought leverage through somewhat different means. CARE organized and managed field trials of improved hand-operated reelers with individual silk producers in different field locations. In one village, skilled furniture makers who saw the reeler in action started to manufacture and sell a modified version based on changes made by reelers during the field tests. Initial sales were to nearby villages, and gradually expanded to other villages once the word got out about a local source for an improved reeler.

4. Disseminate information at assembly points. Rural households, like their commercial scale competitors, need information to make investment and production decisions. Yet they lack information about relative prices of cocoons and yarn, technology, linkages to training, and changes in government policy. The study recommended that CARE share its knowledge about silk to a much wider audience than was possible through village-level extension. The assembly points where sellers and buyers come together offered the potential to leverage information and knowledge to many silk subsector participants at the same time.

Response: The concept of the "silk bazaar" evolved from this recommendation and some initial steps were taken to implement this concept. CARE staff took steps to examine the feasibility of organizing events at district-level weekly markets. These events would be venues to share information on silk — market prices, technology options, sources of eggsheet supply, and training. Although no specific intervention was acted on, the concept of gaining leverage through information dissemination was consistent with CARE/Thailand's capability.

Conclusion

Some of the proposed interventions were taken up and others not. Nonetheless, the subsector study contributed to profound changes in CARE/Thailand's understanding of the silk subsector and the strategic importance of the project in promoting the participation of poor people in this growing subsector. This information enabled project managers to refocus project goals and implement operational changes needed to accomplish these goals.

- *Choice of Interventions:* The subsector study provided CARE with a comparative assessment of risks and benefits of different market niches for rural households. The study proposed yellow weft yarn over white cocoons. This knowledge enabled project extension agents to assist silk producers to make an informed choice between the different product and market options. It also helped CARE to focus its own interventions as a organizational player within the silk economy. By concentrating on yellow weft yarn production, the project could streamline its interventions.
- *Project Goals:* CARE's goal options were evident. The project could have high impact on fewer households or have lower impact on a larger number of households. CARE's initial approach was to assist target groups to maximize silk earnings by specializing as white cocoons producers. Returns to labor were about three times greater in producing white cocoons than in reeling yellow cocoons into weft yarn (\$1.85/day versus \$.62/day). However, the risks were greater and in many cases beyond the margin of risk for many thousands of rural silk producers. The subsector study enabled CARE to clarify its project goals. Rather than focusing on a limited number of households within a specific geographic region, CARE could scale-up to larger numbers of households interested and able to make the shift to yellow weft yarn. (The ILO/DOL partnerships focused on yellow weft yarn in a province that neighbors Ubon Ratchathani.)
- *Policy Alternative: Small-Scale Enterprises as Participants in the Growth of the Thai Silk Subsector:* Although the goal of the project was to increase household income by assisting traditional silk producers, the goal of the Thai Government was to substitute imports of raw silk (1.5 metric tons) with high-quality local production. Government programs supported this policy by promoting private sector involvement in silk production with investment incentives, assistance packages for commercial farmers, and credit windows in support of these packages. Although there are 400,000 traditional producers, policy makers did not

include them as participants in government's growth strategy. The assumption was that traditional producers — who are predominantly women — could not or would not shift from traditional to modern practices.

The subsector study underscored an alternative approach. Focusing policies on yellow weft production over white could enlist traditional households as valued participants in the growth of the subsector. CARE's prior operational experience proved that rural silk producers could meet market specifications for quantity and quality provided they had access to know-how and critical inputs. The subsector study helped CARE/Thailand frame its operational accomplishments within a policy context so that it could advance the important role of rural enterprise promotion as part of the government growth strategy for the silk subsector.

SUBSECTOR ANALYSIS IN EGYPT AND BANGLADESH

What in CARE/Thailand's experience has broader application to CARE's overall SEAD program? What are some programmatic and management implications CARE must consider in using subsector tools and leveraged interventions? Before addressing these questions, the report briefly introduces the two other cases, Egypt Loan Fund Financing and Bangladesh Bamboo, to add their experience to the synthesis that will follow.

CARE/Egypt: Subsector Analysis to Focus Loan Fund Financing

From January 20 to February 7, 1992, CARE/Egypt conducted a field orientation to subsector analysis with support from the GEMINI Project. The objective of this three-week orientation was, first, to provide practical exposure to the subsector analysis methodology to senior program staff, and to assess its usefulness as a tool to focus efforts of the Community Initiated Development (CID) Program to promote community economic development. A second objective was to install within CARE/Egypt a capacity to use the subsector analysis tool. Participants in the workshop included 14 staff within CARE/Egypt, the CARE/East Africa Regional Technical Advisor for SEAD, and a local small enterprise consultant. Training was provided by William J. Grant of the GEMINI project.⁶

CARE/Egypt works with community-based Egyptian NGOs to help them establish and manage small revolving loan funds. CARE's primary focus has been on setting up effective loan management policies and systems; CARE has paid little attention to helping focus the type of activities financed by the loan fund. There was concern that increased economic activity was simply dividing a static market into ever finer pieces. CARE programmers wanted to investigate the potential of subsector analysis to focus NGOs' loan portfolios on economic activities with greater potential for community economic growth.

After the workshop, CARE concluded that subsector analysis was not an appropriate tool to focus loan fund financing in the context of the CID program for the following reasons:

1. The methodology requires a significant amount of staff time and resources to be applied effectively.

⁶ A report on the workshop is contained in GEMINI Working Paper #29, "The Subsector Methodology, A Field Orientation for CARE/Egypt, January 20-February 7, 1992," April 1992.

2. The variety of activities being funded by CID revolving funds would require studies in a wide range of subsectors resulting in an expenditure that could not be justified.
3. The skills to use the tools effectively required a higher level of analytical capability than was present in most CID and NGO staff.

Four studies were conducted during the training — dairy, building materials, fresh and processed vegetables, and furniture production — but CARE/Egypt did not implement the recommendations that came out of the studies. This is explained partly by the nature of effective loan fund management, which in this case works with a broad mix of economic activities. This is also explained by the costs of undertaking a subsector study: it would have been costly to undertake separate studies for multiple subsectors. The mission concluded that loan fund policies were better tools to focus loan financing than investing in subsector studies for community-managed projects.

A more appropriate use of subsector analysis within a financial services project would be when there exists a concentration of loans within a specific economic activity, like tailors or carpenters. Subsector analysis would be useful to assist clients to make investment decisions for business expansion and to structure financial products toward this end.

CARE/Bangladesh: Analysis of the Bamboo Subsector

From November 1992 through February 1993, CARE/Bangladesh conducted a study of the bamboo subsector.⁷ The objective of the study was to design a project using subsector concepts and tools. The bamboo subsector was selected for study for several reasons:

- Its size and importance to both rural and urban economies means that changes in the subsector would affect millions of people;
- Shortages, lack of substitutes, and spiraling market prices have increased the value of bamboo both as a cash crop and an agriculture asset;
- Research findings exist on improved management and propagation techniques as well as on ways to extend the useful life of bamboo, but little has been done to disseminate the findings; and
- The availability and price of bamboo have a dramatic impact on most rural households, which depend on bamboo for housing materials.

The study's central finding was that despite increasing prices and strong market demand, all four main supply channels were in decline:

- Village bamboo suppliers, divided into two channels of smallholders and largeholders, were not able to increase supply or quality despite financial incentives because of poor management practices and nonadoption of better planting materials.

⁷ "The Bamboo Subsector in Bangladesh," by Kirsten Johnson and Anne Ritchie, Dhaka, Bangladesh, February 1993.

- Forest bamboo suppliers, divided into two channels by distinct locations of supply, were responding to market signals but supply was being depleted as permit holders mined this natural resource for short-term return without a view of long-term sustainability of supply.

The analysts determined that the concepts of leverage did not apply particularly well to the bamboo subsector. The leverage points in the subsector — where large volumes of product flow through a small number of actors — comprise mainly traders, whereas the options for growth do not include any interventions specifically aimed at traders. The options for growth recommended by the study involved direct extension approaches to increase supply among homestead producers, largeholders of unmanaged plantation, and sustained yield management of forest bamboos. The study also recommended extending the useful life of bamboo through low-cost preservation techniques, an intervention that could translate into significant cost savings to bamboo consumers. This option involved developing a market for high-quality construction materials through a three-phase approach of assessing toxicity of preservatives, market testing with different consumers, and, finally, promotion via small economic activities.

Although the bamboo study did not result directly in a new project using leveraged interventions, several cost-effective interventions were implemented:

- Bamboo extension activities — such as management trials and experimentation with branch cuttings — were integrated into existing homestead-based agriculture projects of CARE; and
- The toxicity of existing chemical-based preservatives used by Bangladesh bamboo research institutes was investigated as a prior step to testing consumer preferences for higher-quality building materials.

PROGRAM AND MANAGEMENT IMPLICATIONS FOR SUBSECTOR ANALYSIS AND FOR CARE

Program Implications

All three case examples share this in common — the use of subsector analysis gave the programmer concepts and tools necessary to get an understanding of the bigger picture. Subsector mapping offers a picture of relationships between all the key players — not just producers and suppliers, but also consumers and government officials. What are some of the implications of this knowledge and understanding for programming within CARE. Issues to consider are suggested below.

Indirect versus Direct Assistance Strategies

To achieve leverage, programs must shift from a direct to an indirect assistance strategy. Instead of working one on one with silk or bamboo producers, the approach seeks points in the economic system where other actors with leverage, such as traders, larger private sector processors, or government policy makers, can get needed services to rural households. Indirect assistance strategies raise some tough questions for CARE project and management staff:

- Can CARE ensure that poor people will get the intended services through others?
- Can CARE demonstrate to itself and to donors that indirect interventions yield income benefits to poor people?

In the case of CARE/Thailand, the project staff accepted the concept of indirect assistance and felt it was time for CARE to make this shift. CARE/Thailand was in a position to implement indirect assistance strategies because of the staff's intimate knowledge of silk technology and rural production. The project staff had developed an extensive network of government and private sector participants. What the staff understood instinctively about the silk economy through their experience, the study validated by giving them a structured framework to use in evaluating dynamic changes in silk products, markets, and policies and the effects of these changes on rural households.

Cost-effective interventions did result from the silk subsector study: the project linked rural households in need of mulberry with commercial farmers with surpluses to sell; the project assisted furniture makers to shift into the production and sale of improved hand reelers; and the project implemented a new intervention with great promise of *leverage* by linking village-based white cocoon producers with a marketable surplus of white cocoons with the Jim Thompson Company, one of the largest commercial buyers of white cocoons. Through CARE's intervention, former project clients were able to enter into subcontracts with the Jim Thompson Company on terms that minimized the risks associated with price volatility of white cocoons.

This CARE intervention resulted in a decision by the Jim Thompson Company to open a new buying depot in the project area to manage the initial 150 subcontracts and attract new ones from the existing pool of white cocoon producers. Through indirect intervention, the project was able to establish favorable linkages between key actors in the subsector who might not have otherwise interacted had it not been for CARE's intervention. This is a good example of leveraged intervention — CARE's role relative to the other players was small but vital in establishing beneficial linkages between different actors.

Setting Project Goals: Producers and Consumers

SEAD project goals in CARE are set to alleviate poverty by increasing income through small economic activities. The bamboo study uncovered the negative impact of reduced bamboo supplies on a growing number of poor households that must now purchase bamboo at considerable cost to maintain existing structures. Improved-quality bamboo with a much longer life could result in significant cost savings to poor people as well as take the pressure off local supply. Subsector studies examine the dynamic relationship between producers and consumers and focus attention on the potential for greatest impact on poor people. This raises a couple of questions: Can subsector studies lead to including consumer benefits in final goals? Should study findings lead to a shift to working directly with nonpoor producers if this will lead to desired consumer benefits?

Sharing Benefits: Traditional Target Groups and Others

CARE's approach to project design is target-group-focused. Typically, projects are designed by identifying disadvantaged groups living in remote and disadvantaged locations. Project interventions are determined largely by unblocking constraints to small economic activities as perceived by the client. CARE takes the direct route to ensure that the benefits from CARE's interventions accrue to CARE's target group. Subsector approaches to project design seek to find mutually beneficial relationships between buyers and suppliers. The Thai silk study recommended linkages between yarn traders and household producers in the introduction of improved hand-reeling machines, because of mutual economic interests between both groups. Yarn traders could benefit from increased output and households could benefit by better access to improved machines. Some project staff were unprepared to work with yarn

traders. To enlist the support of middlemen whom they thought to be exploiters of rural households was a difficult concept to accept.

Accountability is the flip side of this issue. Can CARE be accountable for delivering benefits to poor people if there is no direct contact with them? Using indirect interventions places a premium on the installation of appropriate monitoring and evaluation systems to track performance of CARE's target group. A subsector-based monitoring and evaluation system was designed as an outcome of the silk subsector study and elements of it are in use in the project.⁸

Multiple Interventions/Multiple Locations

The Thai study was instrumental in focusing the project (on yellow weft yarn producers) and pinpointing specific interventions in three distinct technical disciplines: technology transfer (improved mulberry and reeling machines); policy advocacy (reduced subsidies and increased budget for yellow eggsheets); and information management and dissemination (market prices, competition, and policy changes.) CARE was already involved in technology transfer and could adopt these interventions because of the project's familiarity with the sector. CARE/Thailand had no specific experience working as an advocate at the policy level or with information, education, and communication strategies of the type suggested. Another programmatic implication of subsector studies is that the nature of the technical components may change when intervening within the system rather than exclusively at the level of the enterprise.

The geographic boundaries of the subsector map may bear little resemblance to administrative boundaries of a country. In the case of silk, the project site was selected based on socioeconomic criteria, seeking out those areas in Ubon Ratchathani with high concentrations of poverty. The subsector map is determined by quite different factors — product flows, system nodes, market centers — which could very well separate the village-based producer from the main supplier by large distances over many provincial boundaries. The proposed interventions meant shifting to different geographic areas of greater potential or greater concentration of silk production. Clearly, the management and staffing implications of this are evident — new counterparts, more dispersed staff, transportation costs, and so on.

Changing Roles, Changing Partners, or Both

Typically, CARE works directly with individuals and community groups and in counterpart relationships with government or NGOs. Adopting subsector recommendations could result in a very different mix of partners from the norm. The Thai silk study recommended that CARE establish direct relationships with yarn traders, larger silk companies, and policy makers at the center in addition to operational staff in the field. The implication is that CARE should form effective partnerships with public or private sector entities that are unfamiliar with NGO and rural development programs and philosophy. The common thread between actors is the dynamic relationship that exists in finished product or input markets.

Besides new partners, the recommendations proposed shifts in CARE's focus away from client strengthening to institutional strengthening or reform. CARE/Thailand project staff were prepared in some ways but unprepared in other ways to make this shift. Staff were hired based on their abilities to

⁸ See GEMINI publication: "A Proposed Subsector-Based Monitoring and Evaluation System for CARE/Thailand's Silk Promotion Efforts," Steven Haggblade, Working Paper No. 23, September 1991.

work with villagers. Many are trained as field extensionists; few are trained in the skills of organizational development. They were unprepared to frame their experience for policy makers, and they were unprepared to convince private companies to include rural producers as part of their growth strategy.

Are operational agencies like CARE in the best position to implement leveraged interventions? In the case of Thai silk, the mission chose not to take on the role of policy advocate directly. Research agencies or donors may be in a better position to influence policies than are operational agencies. However, the subsector studies in both Thailand and Bangladesh yielded new information on the institutional landscape with respect to the political economy. With this information, CARE can integrate new partners into an operational program to focus attention on policy options and how they affect poor people.

Management Implications

Subsector Analysis as a Project Design Tool

Experience to date suggests that subsector analysis should be considered as one important tool, among many. In many circumstances it would not be the tool of choice. Feasibility studies, technical analyses, and rapid rural appraisals are alternatives that should be considered. Subsector analysis is most useful when backward and forward linkages involve a network of actors from diverse geographic regions, and when there are several participants in different channels who compete with each other using different technologies. In other circumstances, when CARE works in a specific economic activity with a local market, the other tools mentioned above may work better.

From Research to Project Design or Redesign

CARE mission managers are concerned about developing quality projects and identifying donors to finance them. Conducting a subsector study requires a considerable investment in staff time and resources; a typical study requires at least two people working full time for 4-6 weeks. Although CARE staff are able to conduct the subsector assessment, the study team needs to engage the services of technical consultants to undertake the feasibility assessment of technology alternatives. Up-front research using subsector tools can be costly, so managers are looking for a return on this investment in a fundable project.

A subsector study indicates possible interventions, but not the methods of delivery or potential donors. The work of project design is not concluded after following the nine-step approach. Programmers will need to develop workable partnerships and delivery mechanisms. There are no standard designs or implementation models that accompany subsector approaches.

So far, CARE has no experience with implementing a new project designed around leveraged interventions. Thai silk evolved from a direct service approach. CARE/India is in the start-up phases of a dairy project that resulted from a subsector study. The bamboo study did not result in a new project, but in new components in existing agriculture projects. Subsector research may find a greater initial use in the redesign of existing projects where CARE is knowledgeable about a subsector.

Using the Tools

Subsector analysis is divided into four distinct phases:

- Phase 1. Selecting a subsector to study;
- Phase 2. Understanding the structure of the subsector selected;
- Phase 3. Analyzing the dynamics; and
- Phase 4. Identifying leveraged interventions.

There are some common findings from the three country experiences in applying subsector tools. Each mission found Phase 2 — understanding the subsector — very useful in getting a picture of the structure of a subsector. Developing maps and quantitative overlays can be accomplished with legwork and talking with key informants and project participants. Drawing pictures helped in gaining a better understanding of a situation. Experienced field staff, using existing skills, could undertake this phase of the analysis without special training in subsector techniques.

Phases 3 and 4 — analyzing dynamics and identifying leveraged interventions — require greater research, analysis, and programmatic skills than are generally present in most field officers. Subsector analysis relies on enterprise budgets for each production and distribution function in the subsector. In complex subsectors with multiple participants, like the silk subsector, getting accurate data may test the patience of the best researcher. Subsector analysis requires demand data to estimate market size and trends. These phases require staff with strong analytical skills and prior training in market analysis as well as in subsector techniques.

These skills can be taught to field staff. The Thai silk subsector study was led by two expatriates with considerable economics and small enterprise programming experience. After the study, two CARE/Thailand staff attended a five-day formal training course in subsector techniques. After the study, they conducted three subsector studies, in garments, and cashew and pumpkin processing. The studies resulted in a decision by CARE/Thailand to drop cashew and pumpkin processing because of market competition but to expand work with garment makers because of favorable margins in shifting from piece work to sewing finished products for local markets.

The hardest and most important step in subsector analysis is in Phase 1, selecting a subsector to study. Although many tools rely on common sense, other tools require the expertise of the economist to assess and project local demand for products and services. The *GEMINI Field Manual for Subsector Practitioners* offers two tools based on assessing consumption data. Most CARE program staff are unfamiliar with these tools. Missions interested in selecting subsectors to study may need the assistance of trained economists and technical specialists with knowledge of the history and dynamics of a specific subsector.

CARE/Bangladesh's experience with this phase is instructive. Initial research focused on three subsectors — brackishwater shrimp, silk, and oil seeds. The initial investigations, which involved tracking down current literature on each of these subsectors and talking to some key informants, eliminated each of them because growth prospects were poor. The mission shifted its interest to bamboo, largely because of the insight of the expert in the subsector. Still, the mission was concerned that a project might not result from bamboo so the mission started to explore the freshwater prawn subsector by visiting the principal prawn production area and interviewing experts.

The process of selecting a subsector to study may require screening potential options before investing the considerable resources in a study. Some CARE missions can dedicate specific technical resources for this purpose while others have their key technical staff fully engaged in implementing existing projects.

CARE'S STRONG INTEREST IN SUBSECTOR ANALYSIS

There is considerable interest within CARE in subsector analysis at both the strategic and operations level. Table 2 provides a summary of CARE/International missions with plans to use subsector analysis. Planned activities range from an environmental assessment for new project design (Haiti/Urban Agriculture) to identification of appropriate market interventions for existing projects (Costa Rica/Palmetto).

At the strategic level, subsector analysis will address the conflict between target group and institutional goals in SEAD programs. Poor people are difficult and costly to reach with the services they need to start up or expand an economic or enterprise activity. These fundamental realities make it difficult for support institutions to provide services on a cost-effective basis and on a scale that ensures meaningful impact. SEAD assistance agencies have addressed this programmatic conflict in different ways: by focusing services on a narrowly defined target group, by limiting the range and type of services offered, by increasing fees or rates for services provided, or by gaining cost-efficiencies through different service delivery methods.

The conflict between target group and institutional goals presents a major challenge to policy makers and program managers in CARE. CARE's SEAD program focuses on subsistence or semisubsistence households; mostly rural women who, as managers of their household economies, seek stable sources of income to achieve greater economic security for the household. In fact, most of CARE's SEAD projects evolved from other sectoral programs in which SEAD interventions were added to address income needs of very poor households — to act on health and nutrition messages, to shift from subsidized wage employment to self-employment, or to increase nonfarm income because of declining farm incomes. To address the needs of the very poor, CARE has developed projects characterized by a mix of financial and nonfinancial interventions. Many of these projects have been effective at raising household incomes; yet even the most effective of these projects face the challenge of sustaining these gains through viable support institutions.

What are CARE's strategic options to address this programmatic conundrum and how do subsector analysis concepts and tools fit within these options? As to strategies, there is one strategy for CARE: to design appropriate and sustainable programs relative to the needs and economic context of CARE's traditional target groups. With its strong poverty focus, CARE will not shift its target group focus and specialize in any one target group like, for example, existing enterprises active in the urban informal sector. As a generalist agency, CARE's SEAD program will not specialize in any one sector or service area, like financial services, to the exclusion of other services. And CARE's basic institutional identity will remain as an operational agency; it will complement, but not replace, its operational roles with new roles such as institutional strengthening, coalition building, and policy advocacy.

TABLE 2
SUBSECTOR ANALYSIS: PROJECTED ACTIVITIES

Country	Activity	Objective
Haiti	Subsector studies of urban and periurban vegetable and dairy producers	New programming in urban agriculture in Port Au Prince.
Costa Rica	Study of the palmetto subsector	Identify new markets and products for large stands of palmetto plantations.
Ecuador	Study of forest products and markets	Advise local communities on value of natural resources to development a sustainable management plan.
Egypt	Market analysis of family planning products and services. Identify underserved niches for financial services	Identify niche for start-up family planning project. Design new urban informal sector microenterprise project.
Bangladesh	Subsector analysis for freshwater prawn or an urban economic subsector to be determined	New project design.

Herein lies the strategic role of CARE's SEAD unit and the importance of subsector analysis in CARE programming. The SEAD unit will want to guide programmers to seek a balance between target group and institutional goals. Without this guidance, the trend in future SEAD programming will continue along its current path in favoring target group over institutional goals. Although these programs will be effective at generating income benefits for project participants, they may be also be characterized by:

- Difficulties in achieving scale (the biggest current projects have 8-10,000 participants);
- Inefficient delivery mechanisms because of the high cost per beneficiary; and
- Difficulties in sustaining needed services after the end of the project because the service mix is too costly or difficult for any one organization to deliver.

Subsector analysis concepts and tools will be used to guide SEAD programmers to achieve a better balance between target group and institutional goals in SEAD project design, management, and evaluation. Key applications include the following:

1. Environmental Assessment: Every SEAD project in CARE should adopt subsector concepts in assessing the external factors affecting the household economy. Subsector analysis should be used in combination with analysis of the household economy to base project designs on an understanding of the internal and external factors that promote or constrain small economic activity development. Current

project design tends to focus on a specific economic activity within the household without a comparative assessment between activities using objective economic criteria. A better understanding of the subsector will enable programmers to focus on specific target groups within the household, to focus interventions on opportunities that match markets with the economic activities of the household, and to identify partners based on a better understanding of the institutional landscape.

2. Cost-effective Interventions: Better knowledge of the structure and dynamics of the subsector will help CARE focus its interventions. CARE will most likely chose direct extension methods but may limit the range or alter the mix of interventions based on the knowledge of the system. CARE can and should address systemic problems affecting poor people. However, a better knowledge of the system may not initially translate into new projects that employ indirect or leveraged interventions. These type of interventions are more likely to evolve within existing programs once CARE has a solid understanding of target group needs and realities. Table 3 identifies a range of nonfinancial service interventions that may change with the use of subsector concepts and tools in SEAD programs.

3. Changing Roles and Partners: CARE's primary SEAD partner is the community. More specifically, CARE's partners are informal, community-managed credit groups or producer associations. Subsector analysis will help pinpoint institutional players who are critical to relieving external or systems constraints faced by project clients. These may be research institutions that look at macroeconomic factors affecting the informal sector. They may be banks, cooperatives, or other intermediary service entities. Subsector analysis will identify critical service gaps and future roles institutions can play in filling these gaps. A new generation of projects that promotes institutional coalitions may result from the information yielded by an understanding of the big picture.

The SEAD unit plans to promote and expand the use of subsector analysis within CARE. The primary objective is to build internal capacity of SEAD programmers to apply subsector concepts and tools in the design and management of SEAD projects. One major activity will be to train staff using the existing CARE/GEMINI subsector training materials. Training will focus on both project and mission managers. Training will be done in combination with tools CARE is developing in household mapping and economic analysis.⁹ Besides training, the SEAD unit will assist CARE offices interested in undertaking subsector studies by identifying external consultants who can help design and participate in a study. The use of consultants will accelerate the development of internal CARE expertise to use subsector analysis.

⁹ In October 1993, the SEAD unit will develop and field test practical household analysis tools in a village banking project in Guatemala.

TABLE 3

SUBSECTOR ANALYSIS: APPLICATIONS AND IMPLICATIONS

Applications	Now	Future	Implications
Environmental Assessment	Target group perspective Geographic focus	Systems Perspective Market-based interventions	Partners deliver service CARE strengthens partners
Policy Advocacy	Indirect links between practice and policy Limited to client perspective	Direct links to policy Knowledge of complementary or competing interests	Monitoring broad impacts CARE as policy advocate
Information Flow and Management	Direct CARE to client Traditional community extension methods	Information from nonbeneficiaries Information dissemination among actors	Information management intervention MIS for multiple end uses
Technology Transfer	Proven, known technologies Limited choice	Accent on specialization Technology testing and adaptation more important	More use of market mechanisms for transfer Justifiable subsidies for technology adaptation
Market Access and Development	Participants know markets best Little staff knowledge of market opportunities Projects limited to known markets	Better knowledge of niches in existing markets Identify and develop new markets and marketing mechanisms	New Partners: market actors and regulators

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*5. "GEMINI in a Nutshell: Abstracts of Selected Publications." Compiled by Eugenia Carey and Michael McCord. Special Publication No. 5. 1993. \$10.00

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1. "Expansion with Quality: Building Capacity in American Microenterprise Programs." Elisabeth Rhyne. Development Alternatives, Inc. July 1993. \$3.30.

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