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**Options for
Updating AskARIES:**

**An Analysis of
Cost-Effective
Means of
Disseminating
Microenterprise
Development
Information**

GEMINI Working Paper No. 7

GEMINI

GROWTH and EQUITY through MICROENTERPRISE INVESTMENTS and INSTITUTIONS
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**Options for Updating AskARIES:
An Analysis of Cost-Effective
Means of Disseminating
Microenterprise Development Information**

by

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EXECUTIVE SUMMARY

INTRODUCTION

GEMINI has been charged with the responsibility to update AskARIES — a computer-based reference resource for small enterprise development problems — and has been allocated five person-months over five years in which to do this. The Harvard Institute for International Development (HIID) invested 100 person-months in developing AskARIES and estimates annual updates of 100 records would require 20 person-months per year. This paper reviews the sales performance and uses of AskARIES to date and suggests options for ways GEMINI could update AskARIES.

ASKARIES REVIEW

AskARIES has sold 53 copies in one year on the market. A.I.D. purchased 21 of these copies; international donor agencies, universities, research institutions, PVOs, and individuals have purchased the remaining 32.

An initial survey by HIID of AskARIES users elicited favorable responses, with the product being most useful for people new to the field of small enterprise development. This survey covered only the users of the 21 copies of the program purchased by A.I.D. and was conducted within weeks of the time these users first received the program.

A recent telephone survey of U.S.-based purchasers of the program outside of A.I.D. found an almost even split between those who used the program extensively and those who had not used it at all after an initial run-through. Those who did not use the program cited a lack of regular need for the data and difficulty in learning the program as the main impediments to greater use.

Discussions with current and potential owners of the product pointed out distinct segments in the market for microenterprise information. These segments seek diverse types of information, use it in different ways, and have a varying degree of computer capability. One segment is made up of people new to the small enterprise field who seek to get up to speed quickly. A second segment is made up of researchers who desire a tool to speed the research process. A third segment consists of designers and managers of small enterprise projects who want to acquire expertise that will help them improve the performance of their programs.

The market for the first two segments is limited to donor agencies in North America, Europe, and possibly Japan; private voluntary organizations (PVOs); and universities involved in small enterprise development. Most of these people are computer literate. The total potential sales for a software product in these market segments are no more than 150.

The third segment includes all the PVOs and nongovernmental organizations (NGOs) that operate small enterprise programs. Total potential sales for this segment exceed 1,000. However, people in this segment have limited computer skills and often need access to the full text, rather than annotations, of documents.

Update Options

I have defined below seven options for updating AskARIES. Their estimated total cost over the remaining years of GEMINI and the total number of potential users are given in Table 1 (see Annex A for a summary of the projected income and expense for each option and the assumptions used to make these calculations).

AskARIES Updates. Continuing in the AskARIES format by producing annual update disks that contain at least 100 new entries.

User Group. Coordinate a group of AskARIES users who will create new entries on publications they find relevant. GEMINI will provide quality control.

New Software. Replace Notebook II (the software interface for AskARIES) with a new interface that is more intuitive and easier for infrequent users to remember. Convert AskARIES data and provide annual updates.

Lotus Agenda. Replace Notebook II with an add-on program to Lotus Agenda that includes AskARIES and annual updates.

CD-ROM. Publish the full text of all AskARIES articles on a CD-ROM disk along with software for searching the text by key words. Also publish annual updates.

Catalog and Copy. Produce an annual catalog of annotated bibliographies of articles, studies and publications dealing with small enterprise development. Provide a central point where catalog buyers can order the full text of any entry.

Technical Notes. Publish quarterly papers, each of which summarizes important writing on one topic of interest to microenterprise program designers and managers (such as interest rates, savings programs, computers and microenterprise program management, systems for encouraging repayment, or cost effective evaluation systems).

TABLE 1
ASKARIES UPDATE OPTIONS

| Option | Cost | Users |
|---------------------|-----------|-------|
| 1. AskARIES Updates | \$315,719 | 100 |
| 2. User Group | \$244,331 | 100 |
| 3. New Software | \$341,094 | 125 |
| 4. Lotus Agenda | \$252,969 | 50 |
| 5. CD-ROM | \$220,913 | 35 |
| 6. Catalog and Copy | \$154,188 | 750 |
| 7. Technical Notes | \$169,188 | 1,000 |

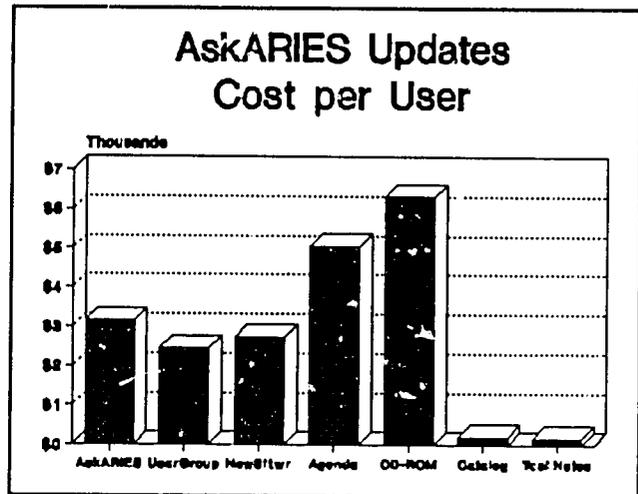
CONCLUSION

The total cost and person-months of each of the seven options listed exceed the five person-months allocated in the GEMINI contract. A.I.D. or GEMINI will need to find additional funds if any sort of professional updating is to take place. If no additional funds are available, I recommend that no updates be done. It would be better to stop now than to waste money on sporadic and inadequate updates.

Figure 1 compares the cost per user of each of the options. The software-based options, with high production costs and small markets, cost 10-20 times more per user than the paper-based products. Because of this I recommend:

- That GEMINI employ the Catalog and Copy option for updating AskARIES, with instructions in each catalog explaining how AskARIES users can enter the information in their database.
- That GEMINI explore the Technical Notes concept as a means of disseminating information from Action Research Programs and other GEMINI research.

FIGURE 1



I further recommend that GEMINI examine the potential for including AskARIES on a CD-ROM disk to be produced by the Center for Development Information and Evaluation (CDIE). In my research I found out that CDIE is testing CD-ROM by making a prototype disk containing bibliographic information on the holdings in A.I.D.'s library. The manager of this project has expressed interest in including AskARIES on the disk. This could lower the expense to the point where the cost per user of CD-ROM is more justifiable.

SECTION ONE

ASKARIES REVIEW

RESULTS TO DATE OF ASKARIES

The Harvard Institute for International Development (HIID) spent 100 person-months to develop AskARIES, 30 of which were not included in the ARIES contract. AskAries is a computer-based reference resource for those seeking solutions to small enterprise development problems. HIID spent an additional \$60,000 to develop the AskARIES User's Manual. It cost Kumarian Press approximately \$25,000 to produce and package 500 copies of the product.

Kumarian first published AskARIES in June 1989, and so far 53 copies have been distributed, 32 of these being sold to organizations outside of A.I.D. and the Peace Corps. Kumarian sells AskARIES for \$389, of which 30 percent goes to HIID in royalties and \$50 goes to Pro/Tem Software for the use of Notebook II.

HIID conducted a field test of 21 initial users of AskARIES. This report states that:

Almost all testers rated AskARIES as quite useful and applicable to their institution. The written comments reveal interesting and important clarifications to this favorable response. There was a general consensus that AskARIES is most useful to: 1) staff doing hands-on project management (including Peace Corps volunteers), especially those who are relatively new to the field of SMED; and 2) to academically interested staff and research/proposal-writing units. AskARIES was believed to have less utility in its present form to professional staff with substantial SMED experience. The applicability to local institutions gets a mixed rating and a range of comments. (AskARIES Field Test Final Report, May 21, 1990.)

Four things must be kept in mind when reviewing the comments of this field test. First, none of the testers paid for the software, it was distributed to them by A.I.D. Second, the testers represent only one of the potential markets for AskARIES — A.I.D. and the Peace Corps. None of the testers came from local nongovernmental organizations (NGOs) or other international donor agencies. Third, most of the users had someone from HIID work with them to install the AskARIES program and train them in its use. Ratings from testers who did not receive on-site assistance were generally lower than those from testers who were visited by HIID staff. Fourth, all of the testing took place within a week or two of the time the tester first received the product, so the test does not measure the usefulness of AskARIES to a tester over time.

Opportunity International recently conducted a telephone survey of 12 of the 20 U.S.-based organizations outside of A.I.D. that purchased the product. Of these 12, four had used the product seldom or not at all since they first installed it, two had used it a few times, four had used it extensively, and two had shipped it to field offices and did not know how often it was being used.

Those organizations that are not using AskARIES cited a lack of a regular need for the information and difficulty learning the AskARIES interface as the primary constraints to their use of the

product. These two items are related. People who are not researchers do not have a regular need to search a database on small enterprise development. People often forget how to use a program that they do not use frequently. If the interface for an infrequently used program is not intuitive, people will often choose not to use it rather than spend the time to relearn the interface.

Of the 12 organizations included in the telephone survey, two (Transformation International and Trickle-Up) are entering new records into the AskARIES database on their own. Another two organizations (the World Bank and World Vision) had converted the AskARIES database into a different format that is more conducive to their own use and are adding records into this new format. The World Bank's database is being used as the basic bibliography for the Committee on Donor Agencies for Microenterprise.

Kumarian Press now has more than 400 copies of AskARIES in its warehouse. It would be interested in selling these to A.I.D. at a reduced cost for distribution to overseas programs. This could generate more potential buyers for AskARIES updates.

ISSUES REGARDING ASKARIES

Before reviewing potential options for updating AskARIES it is important to review some of the reasons why the program has not achieved sufficient sales to cover the costs of printing, packaging and distribution, let alone the costs of developing the database. More clarity on these issues will help us reach a more appropriate decision on updates.

Product Definition

HIID defines the purpose of AskARIES as assisting "in organizing the large amount of information available within the literature relevant to small enterprise development programs." While this definition accurately describes what the program does, it does not describe the benefits enjoyed by the users of the product. People buy or use databases for a variety of reasons, including to conduct research, improve their performance or gain an advantage on their competitors. In the business world, the use of a database should lead to reduced costs or increased income. In the not-for-profit world it should lead to better thinking, writing, and implementing in the database subject area. The importance of recognizing this is that the database must be shaped in a way that enables the buyer to gain the results from it that he or she desires.

To take account of the intended use of a product by the buyer, a product should be defined in terms of what is to be bought, precisely by whom, and why. Table 2 below looks at three ways in which AskARIES could be defined, the size of each potential market, the type of information, and the appropriate format for each product. (These categories do overlap a bit, and there could be additional definitions of the AskARIES product, but this segmentation should help to develop some of the important issues regarding AskARIES.)

TABLE 2

ASKARIES PRODUCT DEFINITIONS

| | PRODUCT 1 Training | PRODUCT 2 Research | PRODUCT 3 Expertise |
|---------------------------|--|---|--|
| What is bought? | <ul style="list-style-type: none"> • Training in small enterprise development | <ul style="list-style-type: none"> • Assistance in research | <ul style="list-style-type: none"> • Expertise in program design and management |
| By whom? | <ul style="list-style-type: none"> • Missions officers responsible for SMED programs • Peace Corps SMED trainers • SMED specialists in large integrated PVOs • SMED professors | <ul style="list-style-type: none"> • Researchers • SME information center managers • Enterprise sectors librarians | <ul style="list-style-type: none"> • Program designers and managers |
| Why? | <ul style="list-style-type: none"> • To quickly get up to speed in specific SMED issues • To assist in training others in SMED issues | <ul style="list-style-type: none"> • To speed research process | <ul style="list-style-type: none"> • To improve program performance |
| Market Size | • 75-100 | • 100-125 | • 500-2,000 |
| Information needed | <ul style="list-style-type: none"> • Summaries of important articles or thought pieces on important topics • Ability to search by topic | <ul style="list-style-type: none"> • Bibliographic material • Ability to search by research areas | <ul style="list-style-type: none"> • Full text articles of practical nature or thought pieces reviewing several articles on one topic |
| Format | • Software or text | • Software or text | • Text |

Table 2 demonstrates that a clear definition of the AskARIES product will determine the size of the market, the type of information that should be included, and the format in which the information should be presented. Presently AskARIES most closely matches Product 1, but is being marketed as Products 2 and 3 as well. If AskARIES wants to gain more of the markets for Products 2 and 3, it will need to adjust the information it contains and the format in which it is presented.

Market

As Table 2 shows, the three different products correspond to three different markets. Product 1, Training, provides summaries of important documents to people wanting a quick way to get up to speed in the small enterprise development field. The primary buyers of this product are people new to the small enterprise field and trainers of people new to the small enterprise field. The potential market for this product includes A.I.D. and the Peace Corps (30 copies), universities (30 copies), international donor agencies (20 copies), large integrated PVOs (10 copies) and consulting organizations (20 copies). These buyers have relatively easy access to the source documents, so summaries with searching capabilities are sufficient. These people are computer-literate, so they would be able to work with either a software or text-based product.

The market for Product 2, Research, overlaps considerably with that for Product 1. However, the intended use of the product is different. These people regularly conduct research in small enterprise development and want a quick way of surveying the literature on a given topic. They are not interested in extensive annotations, and will be looking up the full text in the library anyway. They often will be searching according to categories that differ from those favored by Product 1 buyers. (That the needs of this group diverge from that of Product 1 is shown by the fact that the World Bank has made a new bibliographic database from AskARIES to guide the research conducted by the Committee on Donor Agencies. This bibliography will be paper-based, will be segmented by the Bank's research codes, and will contain only basic bibliographic data and no annotations.) The organizations that will buy Product 2 will be much the same as the buyers of Product 1, but the individuals within those organizations who make the purchase decision may differ. This product will make more sales to international donor agencies and "think tank" organizations, and less to PVOs.

Product 3, Expertise, opens a whole new market. These are people who design and manage small enterprise programs and work in developing countries. They are interested in practical guides that will help them improve the performance of their programs. They are interested in what has or has not worked elsewhere. They are not interested in theory and probably do not have much use for teaching cases. They may have a computer for their staff, but do not use it much themselves. They do not have easy access to large libraries or Western publishers, so summaries and annotations do them little good. They need access to the full text of documents to gain a full understanding of how a program may be working in a different context and how lessons from that program may be applied to their own. Alternatively, they could use thought pieces that condense the major findings from several different reports and publications and describe how these findings could be applied to the mechanics of running a program. The size of the market for this product is several times larger than that for Products 1 or 2, as has been demonstrated by well-done publications aimed at program managers. ACCION's *Operational Guide* has sold 500 copies, while OEF Internacional's manuals on marketing and conducting feasibility studies, as well as the *Monitoring and Evaluating Small Business Projects: A Step by Step Guide*, produced by the Small Enterprise Education and Promotion Network (SEEP), have sold over 2,000 copies each.

Technology

The definition of the product and the target market affects the choice of technology as well. Product 1 buyers are familiar with computers, but their expertise does not go much beyond word processing and spreadsheets. If the product comes to them on disk it will need to have an easy and intuitive interface that aids rather than hinders their search for information. Product 2 buyers are also familiar with computers and probably have more experience searching databases (or getting someone else

to search databases for them). Product 3 buyers may have access to a computer but use it infrequently. They probably have an accountant on their staff with a lot of computer expertise, but not enough program knowledge to make effective use of a program like AskARIES. The irony here is that the only market large enough to support the cost of producing a software product has little expertise with computers.

More advanced computer technologies, such as CD-ROM or computer bulletin boards, shrink the market even more. Very few people in the development community make common use of these technologies, and the AskARIES product is not yet so compelling that it will induce people to convert to new technologies.

Legal

The copyright to the AskARIES product and name are owned by the President and Fellows of Harvard College. If updates are created by organizations other than Harvard, they probably would not be able to use the name AskARIES unless the packaging states clearly that they have not been produced or endorsed by Harvard.

SECTION TWO

OPTIONS FOR UPDATING ASKARIES

This section will review seven different options for updating AskARIES. Each review will give a description of how the option will work, the estimated cost and number of users for the option, and comments specific to the option. Each review will also define the option in terms of the three product categories listed above (Training, Research, and Expertise).

Some common assumptions underlie the calculations of costs for the options (see Annex A for a complete breakdown of costs and assumptions). These include:

- Each update will contain 100 listings, except for Option 7 (Technical Notes), which will review 60 articles and publications.
- Updates are produced annually, except for Option 7 (Technical Notes), which are produced quarterly. (Note: the total costs of these options could be reduced by producing them every two years instead of annually.)
- All software products will be sold in a manner similar to the current arrangement AskARIES has with Kumarian (this assumption may be overly optimistic since the market for software-based products is smaller than Kumarian anticipated).
- The text-based options (Options 6 and 7) will be produced in-house, with GEMINI incurring the costs for publication and distribution and receiving the income from sales.

In addition, the assumptions regarding the time for reviewing, writing, and encoding summaries of articles and publications are based on HIID's experience with AskARIES.

OPTION 1 — UPDATE ASKARIES

Description. GEMINI would produce annual updates in the same software format used by AskARIES (Notebook II). Kumarian would handle the printing, packaging, marketing, and distribution of the updates and pay GEMINI (or the specific organization that produces the updates) a royalty for each update sold.

| | | | |
|------------------------------|-----------|-------------------------|-----|
| Estimated Total Cost: | \$315,749 | Estimated Users: | 100 |
| Estimated Cost/User: | \$3,157 | | |

Key Assumptions:

- Based on HIID's experience, it will take approximately four days for a reviewer to read an article or publication, write the summary, and encode it in Notebook II.

- It will take two person-months per year to hire the reviewers and supervise their activities.
- Kumarian will produce the updates and pay a 20 percent royalty for them.
- With the promise of regular updates, Kumarian will sell another 50 copies of AskARIES and all AskARIES owners will buy updates.

Product: Product 1 —
Training

Comments. The total number of person-months required to update AskARIES in this manner is more than four times the amount anticipated by the GEMINI RFP. The market for AskARIES updates could be expanded if A.I.D. chooses to buy the remaining copies of AskARIES and distribute them to field programs.

| Option 1 - Update AskARIES | | |
|-----------------------------|--------------|------------------|
| | Months | Money |
| Annual Costs | | |
| Review Articles | 3.13 | \$8,594 |
| Write Summaries | 9.09 | \$25,000 |
| Training/Quality Control | 2.50 | \$15,125 |
| Encode Data | 5.68 | \$15,625 |
| Publishing/Production | | \$0 |
| Copying and Duplicating | | \$0 |
| Overhead | | \$16,086 |
| Total Annual Costs | 20.40 | \$80,430 |
| Start-up Costs | | |
| Hardware | | |
| Develop Manual | | |
| Software Development | | |
| Convert AskARIES data | | |
| Total Start-Up Costs | 0.00 | \$0 |
| Income | | |
| First Year | | \$1,500 |
| Remaining Years | | \$4,500 |
| Total LOP Costs | | \$321,719 |
| Total LOP Income | | \$6,000 |
| Net LOP Costs | | \$315,719 |

OPTION 2 — USER GROUP

Description. GEMINI would coordinate an AskARIES users group made up of current AskARIES users. These people would create their own AskARIES records for new publications relevant to them. GEMINI would collect these records, upgrade them to meet a common quality standard and supplement additional records for important publications not reviewed by members of the users group. GEMINI could disseminate updates by mailing floppies or by maintaining a computer bulletin board that contained AskARIES updates and GEMINI publications.

Estimated Total Cost: \$244,381
Estimated Total Users: 100
Estimate Cost/ User: \$2,444

Key Assumptions:

- Members of the users group will produce half of the updates needed. GEMINI will produce the other half.

- Quality control over updates written by the users group will take 20 percent of the time it takes to produce an update.
- GEMINI will need to produce a manual for the users group describing how to create AskARIES records.
- GEMINI will purchase a computer bulletin board system at a cost of \$15,000.

Product: Product 1 — Training (note: The nature of the product may change as AskARIES users develop records relevant to their situations).

Comments. The fact that some AskARIES users are currently creating their own records makes this a viable option. The four organizations that we spoke with that are creating new records strongly endorsed this idea. However, the level of quality of these records is unknown. It is likely that organizations enter only the information that is relevant to them, and this information may or may not be relevant to other potential users. GEMINI would have to exert quality control and fill in information gaps to insure that the product maintains a good reputation.

In order to work, this scheme would need some system for inducing AskARIES users to create and send in new records. This could include discounts on the price of updates for those whose records were used in the update.

The cost of this option depends primarily on how many new records users produce and the quality of these updates. The cost savings from the voluntary creation of records could be totally offset by the cost of quality control and promoting record creation among users.

OPTION 3 — NEW SOFTWARE ENGINE

Description. This option would involve converting AskARIES to a new database engine, such as dBase IV or FoxBase Plus, and designing a user interface that is easier to use than the software engine currently used for AskARIES (NoteBook II). This would also involve simplifying the record structure for each annotation, so creating annotations would not require as much time as under the current AskARIES. We could call this AskGEM (or AskJim).

| Option 2 - User Group | | |
|-----------------------------|--------------|------------------|
| | Months | Money |
| Annual Costs | | |
| Review Articles | 1.88 | \$5,156 |
| Write Summaries | 5.45 | \$15,000 |
| Training/Quality Control | 2.50 | \$15,125 |
| Encode Data | 3.41 | \$9,375 |
| Publishing/Production | 0.00 | \$0 |
| Copying and Duplicating | 0.00 | \$0 |
| Overhead | | \$11,164 |
| Total Annual Costs | 14.66 | \$55,820 |
| Start-up Costs | | |
| Purchase Hardware | 0.00 | \$15,000 |
| Develop Manual | 2.00 | \$12,100 |
| Software Development | 0.00 | \$0 |
| Convert AskARIES data | 0.00 | \$0 |
| Total Start-Up Costs | 3.00 | \$33,150 |
| Income | | |
| First Year | 0.00 | \$1,500 |
| Remaining Years | 0.00 | \$4,500 |
| Total LOP Costs | | \$250,381 |
| Total LOP Income | | \$6,000 |
| Net LOP Costs | | \$244,381 |

Estimated Total Cost:
\$341,094
Estimated Users: \$125
Estimated Cost/User: \$2,729

Key Assumptions:

- It will take 13 person-months and \$78,650 to develop the new software engine, write a manual for it and convert the AskARIES data.
- With a simplified structure for annotations, annotating each item will take 15 percent less time than under the AskARIES structure.
- The program with the initial AskARIES database will sell for the same price as AskARIES. Annual updates will sell for \$75.

| Option 3 - New Software | | |
|-----------------------------|--------------|------------------|
| | Months | Money |
| Annual Costs | | |
| Review Articles | 3.13 | \$8,594 |
| Write Summaries | 7.39 | \$20,313 |
| Training/Quality Control | 2.50 | \$15,125 |
| Encode Data | 4.55 | \$12,500 |
| Publishing/Production | 0.00 | \$0 |
| Copying and Duplicating | 0.00 | \$0 |
| Overhead | | \$14,133 |
| Total Annual Costs | 17.56 | \$70,664 |
| Start-up Costs | | |
| Develop Manual | 6.00 | \$36,300 |
| Software Development | 6.00 | \$36,300 |
| Convert AskARIES data | 1.00 | \$6,050 |
| Total Start-Up Costs | 13.00 | \$78,650 |
| Income | | |
| First Year | | \$14,588 |
| Remaining Years | | \$4,500 |
| Total LOP Costs | | \$361,306 |
| Total LOP Income | | \$20,213 |
| Net LOP Costs | | \$341,094 |

Product: Product 1 — Training, with some potential for overlap with Product 2 — Research.

Comments. This option comes out as the most expensive of the seven, due mainly to the cost of writing a user-friendly interface and a manual to go with it. However, this option faces the same limited market as AskARIES. A more user-friendly interface may increase the number of buyers, but not by enough to make up for the cost of developing the interface.

This option also entails more risk than continuing AskARIES. With AskARIES we already have an established (but small) market. This option would require \$78,650 in development costs, with no assurance that current AskARIES users would convert to the new format.

There also may be some legal difficulties to this option. Harvard owns the copyright to AskARIES. This option would be using the intellectual property of Harvard (the original database) and presenting it in a new format. A royalty payment would have to be negotiated with Harvard for use of their database.

OPTION 4 — LOTUS AGENDA

Description. This option would use Lotus Agenda as the software engine for a system to search a database of annotations. It would also use a simplified record structure for annotations, as in the previous option. The product would be sold as an add-on to Agenda, so buyers would need to have

Agenda before they could make use of the database.

Estimated Total Cost:
\$252,969
Estimated Total Users:
50
Estimated Cost/User:
\$5,059

Key Assumptions:

- The fact that people will need to have or buy Agenda to use this product will severely limit the market. I am estimating a total of 50 users.
- Agenda's automatic system of searching text for key words and phrases would greatly reduce the amount of time to encode annotations, reducing the total amount of time for creating a record by 35 percent from AskARIES.
- Creating a program within Agenda to catalog and retrieve annotations would be much simpler and take much less time than creating a dBase-type program.
- Since GEMINI would not be selling the software engine with this product, the price would have to be less than that of AskARIES. I am estimating \$150 for the initial program and \$75 for annual updates.

Product: Product 2 — Research and Product 1 — Training

Comments. As a stand alone product this option has one of the highest costs per user and therefore does not deserve much serious consideration. However, there may be another way to do this that would cause GEMINI to incur very little additional costs. Suppose that:

- GEMINI chooses some other system of annotating relevant microenterprise material, such as a printed catalog.
- All of the annotations are generated on a computer, either through a word processing or database program.
- GEMINI keeps track of the annotations with Agenda. (Note: DAI is currently using Agenda to track all GEMINI publications.)

Option 4 - Lotus Agenda

| | Months | Money |
|-----------------------------|--------------|------------------|
| Annual Costs | | |
| Review Articles | 3.13 | \$8,594 |
| Write Summaries | 6.82 | \$18,750 |
| Training/Quality Control | 2.50 | \$15,125 |
| Encode Data | 1.14 | \$3,125 |
| Publishing/Production | 0.00 | \$0 |
| Copying and Duplicating | 0.00 | \$0 |
| Overhead | | \$11,398 |
| Total Annual Costs | 13.58 | \$56,992 |
| Start-up Costs | | |
| Develop Manual | 3.00 | \$18,150 |
| Software Development | 1.00 | \$6,050 |
| Convert AskARIES data | 1.00 | \$6,050 |
| Total Start-Up Costs | 2.00 | \$30,250 |
| Income | | |
| First Year | | \$3,000 |
| Remaining Years | | \$2,250 |
| Total LOP Costs | | \$258,219 |
| Total LOP Income | | \$5,250 |
| Net LOP Costs | | \$252,969 |

In this case, the Agenda program would already be developed and the annotations would be in a form that could be used by Agenda. The only additional cost to GEMINI for distributing this program would be the cost of duplicating disks. GEMINI could offer the program as an option and duplicate disks as needed in-house. GEMINI could then charge a fee that would cover the cost of duplicating the disks.

This option would face some of the same legal difficulties as the previous one. Harvard would need to be recognized publicly and financially as the developer of the original database.

OPTION 5 — CD-ROM

Description. In this option the complete text of all the studies and articles annotated in AskARIES would be put onto a compact disk which could be read by a computer. The disk would also have a program on it which would allow users to search the disk by key words. Annual updates would involve creating additional disks containing 100 new studies and articles plus all of those included on previous CD-ROM disks (a CD-ROM disk can hold up to 400,000 pages of text). This option would give users access to the full text, and not just annotations, of all the articles and publications included in AskARIES and subsequent updates.

Estimated Total Cost:
\$220,913
Estimated Total Users:
35
Estimated Cost/User:
\$6,312

| Option 5 - CD-ROM | | |
|-----------------------------|-------------|------------------|
| | Months | Money |
| Annual Costs | | |
| Review Articles | 1.70 | \$4,688 |
| Write Summaries | 0.00 | \$0 |
| Training/Quality Control | 1.14 | \$6,875 |
| Encode Data | 4.55 | \$12,500 |
| Publishing/Production | 0.00 | \$0 |
| Copying and Duplicating | 0.00 | \$0 |
| Royalties | | \$8,750 |
| Overhead | | \$8,203 |
| Total Annual Costs | 7.39 | \$41,016 |
| Start-up Costs | | |
| Develop Manual | 6.00 | \$36,300 |
| Software Development | 0.00 | \$30,000 |
| Convert AskARIES data | 0.00 | \$0 |
| Total Start-Up Costs | | \$66,300 |
| Income | | |
| First Year | | \$5,250 |
| Remaining Years | | \$4,200 |
| Total LOP Costs | | \$230,363 |
| Total LOP Income | | \$9,450 |
| Net LOP Costs | | \$220,913 |

Key Assumptions:

- Few development organizations use CD-ROM and even full text retrieval capabilities will not induce many to purchase a CD-ROM drive (\$500 - \$1,000) and learn how to use it. I am estimating the number of users at 35.
- It will cost \$30,000 to develop the search software and convert all the articles and studies annotated in AskARIES into CD-ROM format (actual price quote).
- Since the entire article, and not just an annotation, will be put on disk, there will be no need to have people write annotations. Instead, reviewers will need to spend some time selecting which

articles will be included and then additional time to find or generate a version of the article on electronic media (floppy disk).

- GEMINI will need to pay royalties to the publishers of half the articles contained on the disk. Average royalty will be \$5 per disk sold.
- The original "GEMDisk" will sell for \$500. Annual updates will sell for \$100.

Product: Limited application to all three segments. Full text retrieval capability appeals to Product 3 buyers, but few of them have CD-ROM drives. Product 1 and 2 buyers do not have as much need for full text retrieval, but more of these buyers are familiar with CD-ROM technology.

Comments. Though this option involves a more complex technology than AskARIES, it costs 30 percent less. This demonstrates how much of the cost of AskARIES is taken up in the time-consuming process of writing and encoding annotations. By using the full text, CD-ROM eliminates this cost.

Despite this, CD-ROM technology is still too new to be an effective system for the broad-based dissemination of information. Presently only 1 percent of all installed PCs have CD-ROM drives. Since the development community is not known for being on the leading edge of computer technology, selling "GEMDisk" would require selling both the product and the technology. The limited number of potential users gives this option the highest cost per user.

This option may also face copyright difficulties. If the full text of a copyrighted publication is put on the disk, then some legal and financial arrangement will need to be made with the organization that holds the copyright.

As in the previous option, there may be a way to develop AskARIES on CD-ROM at a very limited cost. A.I.D./CDIE is in the process of developing a prototype CD-ROM disk that includes a bibliography of all of A.I.D.'s library holdings in the United States and in several missions. CDIE has purchased its own machine for pressing CD-ROM disks, and search software for selecting information from databases. Lee White, who is heading up this project, expressed an interest in including AskARIES on the disk (the annotated bibliography, not the full text of every article). This would require that we come to some agreement with Kumarian, which is marketing AskARIES on floppy disks right now, and Harvard, which receives royalties on the sales of AskARIES.

OPTION 6 — CATALOG AND COPY

Description. Nothing fancy here — GEMINI would publish an annual catalog that annotated important articles and studies related to microenterprise development. This catalog would include some tables that cross-referenced the entries according to various categories such as those currently used in AskARIES. GEMINI would keep a library of all of the articles and studies referenced in the catalog. Purchasers of the catalog could order the full text of any article or study, and, for a fee, GEMINI would send them either an original or copy of the item.

Estimated Total Cost:

\$154,188

Estimated Total Users:

750

Estimated Cost/User:

\$206

Key Assumptions:

- The catalog will be about 40 pages long and cost .05 per page to produce.
- The catalog will sell for \$5. Full text articles will sell for slightly more than what it costs to acquire or copy and send them.
- It will take half as much time for a reviewer to produce an annotation for the catalog as for AskARIES.
- GEMINI will have to pay royalties for some of the documents it copies.
- A more accessible catalog format, combined with a much cheaper price, will greatly increase the number of buyers. I am projecting 750.

Option 6 - Catalog & Copy

| | Months | Money |
|-----------------------------|-------------|------------------|
| Annual Costs | | |
| Review Articles | 2.84 | \$7,813 |
| Write Summaries | 3.41 | \$9,375 |
| Training/Quality Control | 1.14 | \$6,875 |
| Encode Data | 0.00 | \$0 |
| Publishing/Production | 0.09 | \$1,250 |
| Copying and Duplicating | 3.41 | \$10,375 |
| Royalties | | \$4,375 |
| Overhead | | \$10,016 |
| Total Annual Costs | 9.18 | \$50,078 |
| Start-up Costs | | |
| Develop Manual | 0.00 | \$0 |
| Software Development | 0.00 | \$0 |
| Convert AskARIES data | 0.00 | \$0 |
| Total Start-Up Costs | 0.00 | \$0 |
| Income | | |
| First Year | | \$11,531 |
| Remaining Years | | \$34,594 |
| Total LOP Costs | | \$200,313 |
| Total LOP Income | | \$46,125 |
| Net LOP Costs | | \$154,188 |

Product: Product 3 — Expertise with some application to Product 2 — Research, and Product 1 — Training, though the buyers of Products 1 and 2 will not have as much need for the copying and distribution facility.

Comments. This option takes care of two of the major objections to AskARIES. First, a catalog format is much more familiar and accessible to development workers, especially those working in the field. Second, this option gives ready access to the full text of anything annotated in the catalog. Anyone whose interest is piqued by an annotation and wants to read more can order the document from GEMINI.

These advantages do not come without complications. GEMINI would need to develop the means for storing and distributing over 400 titles.

Certainly, this option lacks the whiz bang search capacity of AskARIES and the other software options, but the greater number of users at a much lower cost overcomes this advantage in the software programs. If needed, the catalog could also include instructions for AskARIES users on how they could enter the data in the catalog into their AskARIES database.

OPTION 7 — TECHNICAL NOTES

Description. This option would take a totally different approach to information dissemination. Instead of giving 100 annotations of articles and studies related to microenterprise development, the Technical Notes would highlight one specific technical topic related to microenterprise (such as interest rates, group lending mechanisms, savings, staff training, or financial viability planning). The Technical Note would review 10-20 articles or studies related to the topic and discuss the major themes brought out by these publications. These notes would be more "how to" than theoretical in orientation.

Estimated Total Cost:
\$169,188
Estimated Total Users:
1,000
Estimated Cost/User:
\$169

| Option 7 - Technical Notes | | |
|-----------------------------|-------------|------------------|
| | Months | Money |
| Annual Costs | | |
| Review Articles | 1.70 | \$9,375 |
| Write Summaries | 4.00 | \$22,000 |
| Training/Quality Control | 0.34 | \$2,063 |
| Encode Data | 0.00 | \$0 |
| Publishing/Production | 0.18 | \$12,400 |
| Copying and Duplicating | 0.00 | \$0 |
| Overhead | | \$11,459 |
| Total Annual Costs | 6.23 | \$57,297 |
| Start-up Costs | | |
| Develop Manual | 0.00 | \$0 |
| Software Development | 0.00 | \$0 |
| Convert AskARIES data | 0.00 | \$0 |
| Total Start-Up Costs | 0.00 | \$0 |
| Income | | |
| First Year | | \$15,000 |
| Remaining Years | | \$45,000 |
| Total LOP Costs | | \$229,188 |
| Total LOP Income | | \$60,000 |
| Net LOP Costs | | \$169,188 |

Key Assumptions:

- GEMINI will publish four Technical Notes per year.
- Technical Note writers will cost an average of \$275 per day.
- It will take a writer one month to research and write one Technical Note.
- The Technical Notes will be popular with program implementers. The best selling Notes will sell 1,000 copies. Overall the Notes will average sales of 750.
- Each note will sell for \$5.

Product: Product 3 — Expertise, with some overlap to Product 1 — Training.

Comments. AskARIES has been criticized for being too theoretical and for not synthesizing the information it summarizes. Technical Notes respond to these criticisms with a "how to" orientation and by synthesizing articles dealing with a common theme. Technical Notes would be a great service to program implementers, who often do not have time to read 15 articles and studies on interest rates, but

would take time to review one piece that summarized the highlights of those articles and compared and contrasted their major points.

Technical Notes have the lowest cost per user.

SECTION THREE

CONCLUSION

The seven options presented here encompass a considerable range in price, technology, number of users, and types of buyers. Deciding which is the most appropriate way to continually update the information in AskARIES depends on the answers to two questions. These questions are:

1. What do A.I.D. and GEMINI want to happen as a result of providing this information and, therefore, to whom should the information be targeted (in other words, which product do we want to sell)?
2. Are there any additional funds available which would allow us to update AskARIES in the means most appropriate for the intended audience (in other words, how much money do we have)?

These two questions are discussed in more detail below. Annex B is a matrix that categorizes the options according to the three major products (Training, Research, and Expertise) and the amount of additional funding each requires.

WHICH PRODUCT?

The analysis above shows that any product geared towards training or research can be either computer or text based but will serve small markets. This does not exclude these products from consideration, but does mean that A.I.D. and GEMINI need to consider how important it is to us to aid in the training of people new to the field of small enterprise development or to speed the efforts of researchers in the field.

On the other hand, products geared towards sharing expertise with program designers and managers will have a large market, but will not be technologically sophisticated. Choosing a paper-based product means taking a large step backwards technologically.

Deciding on the product AskARIES should become depends partly on how one sees the field of small enterprise development and its most pressing needs. Consider the following statements about the field and how they lead to different product definitions for AskARIES:

1. Small and microenterprise development is a rapidly expanding field. People with experience in other areas are now being assigned the task of managing, overseeing, or funding small enterprise projects. The role of AskARIES should be to help these people become current with the thinking and writing on the subject.
2. The field of small and microenterprise development has not yet developed its own body of literature. Large gaps exist between what is being practiced and what is being written about. AskARIES should help researchers to survey the field and discover areas in need of

additional research. This would help to bring some theoretical horsepower to a field that has been dominated by practitioners.

3. Most of the advances in the small enterprise field occur at the field level. The people who get things done are the people who design and manage programs. AskARIES is most effective when it helps these people do their jobs better, making them aware of new strategies and techniques that they may be able to apply to their own programs.

A.I.D. and GEMINI need to decide which of these (or other) needs they want to address before we can decide which product we want to produce.

HOW MUCH MONEY?

None of the options I have presented fit within the five person-months allocated in the GEMINI contract. To stay within this target, GEMINI would have to limit itself to an annual catalog that reviewed no more than 25 publications per year or to an annual bibliography with no annotations. If GEMINI is to do a more complete job of updates, additional funds will be needed. Some possibilities for additional funds are:

- Time and resources could be reallocated from within GEMINI to AskARIES updates.
- Additional funds could be allocated to GEMINI from A.I.D. for updating AskARIES.
- GEMINI could subcontract with another organization to undertake AskARIES updates and A.I.D. could provide additional funds directly to that organization for updates. (For example, GEMINI could contract five person-months with SEEP to do the updates. A.I.D. could provide SEEP with more funds for updates by putting them in SEEP's new grant agreement with the Office of Private and Voluntary Cooperation [PVC]).
- A.I.D. could contract directly with an organization to do the updates.
- A.I.D. could take on the responsibility of updating AskARIES, perhaps through CDIE.
- Other international donor agencies, such as the World Bank, could buy in to the AskARIES updates.

If there are no other sources of funds available for updating AskARIES, then I would recommend that the program be terminated. It would be better to stop now than to make a half-hearted attempt at producing something of little value.

ONE PERSON'S OPINION

My recommendation is that GEMINI use the catalog and copy option (Option 6) to update AskARIES. This incurs the least expense while potentially reaching 15 times more users than the current

program. Those currently using the AskARIES software could use the catalog to write their own updates into the database.

I also recommend further exploration of the potential for reproducing AskARIES on the CD-ROM disk that is being published by CDIE. CD-ROM was the least expensive of the software options. If CDIE could reduce the cost even further, it might be possible to justify the cost even with a limited number of users.

In addition I recommend that GEMINI take a close look at the Technical Notes option (Option 7) as a way of disseminating some of the information generated by the ARPs and other GEMINI research.

My recommendation is based primarily on two biases I bring to this research. First, I do not believe it should be A.I.D.'s responsibility to continually subsidize an information retrieval system for a very small number of users. People who need a technologically advanced means of finding information should pay the cost of developing it. Second, I believe it is more important to advance the state of the practice in microenterprise development than it is to advance the state of the theory. Therefore, I favor the options that are readily accessible to people who are actually running microenterprise programs. Those of you whose biases are different than mine will probably come to different conclusions.

ANNEX A
BREAKDOWN OF COSTS AND ASSUMPTIONS BY OPTION

ANNEX A: BREAKDOWN OF COSTS AND ASSUMPTIONS BY OPTION

| | Option 1 AskARIES | | Option 2 User Group | | Option 3 New Software | | Option 4 Lotus Agenda | | Option 5 CD-ROM | | Option 6 Catalog & Copy | | Option 7 Technical Notes | |
|-----------------------------|----------------------|------------------|------------------------|------------------|--------------------------|------------------|--------------------------|------------------|--------------------|------------------|----------------------------|------------------|-----------------------------|------------------|
| | Months | Money | Months | Money | Months | Money | Months | Money | Months | Money | Months | Money | Months | Money |
| Annual Costs | | | | | | | | | | | | | | |
| Review Articles | 3.13 | \$8,594 | 1.88 | \$5,156 | 3.13 | \$8,594 | 3.13 | \$8,594 | 1.70 | \$4,688 | 2.84 | \$7,813 | 1.70 | \$9,375 |
| Write Summaries | 9.09 | \$25,000 | 5.45 | \$15,000 | 7.39 | \$20,313 | 6.82 | \$18,750 | 0.00 | \$0 | 3.41 | \$9,375 | 4.00 | \$22,000 |
| Training/Quality Control | 2.50 | \$15,125 | 2.50 | \$15,125 | 2.50 | \$15,125 | 2.50 | \$15,125 | 1.14 | \$6,875 | 1.14 | \$6,875 | 0.34 | \$2,063 |
| Encode Data | 5.68 | \$15,625 | 3.41 | \$9,375 | 4.55 | \$12,500 | 1.14 | \$3,125 | 4.55 | \$12,500 | 0.00 | \$0 | 0.00 | \$0 |
| Publishing/Production | | \$0 | | \$0 | | \$0 | | \$0 | | \$0 | 0.09 | \$1,250 | 0.18 | \$12,400 |
| Copying and Duplicating | | \$0 | | \$0 | | \$0 | | \$0 | | \$0 | 3.41 | \$10,375 | | \$0 |
| Royalties | | | | | | | | | | \$8,750 | | \$4,375 | | |
| Overhead | | \$16,086 | | \$11,164 | | \$14,133 | | \$11,398 | | \$8,203 | | \$10,016 | | \$11,459 |
| Total Annual Costs | 20.40 | \$80,430 | 13.24 | \$55,820 | 17.56 | \$70,664 | 13.58 | \$56,992 | 7.39 | \$41,016 | 10.89 | \$50,076 | 6.23 | \$57,297 |
| Start-up Costs | | | | | | | | | | | | | | |
| Hardware | | | | \$15,000 | | | | | | | | | | |
| Develop Manual | | | 2.00 | \$12,100 | 6.00 | \$36,300 | 3.00 | \$18,150 | 6.00 | \$36,300 | | | | |
| Software Development | | | | | 6.00 | \$36,300 | 1.00 | \$6,050 | | \$30,000 | | | | |
| Convert AskARIES data | | | | | 1.00 | \$6,050 | 1.00 | \$6,050 | | | | | | |
| Total Start-Up Costs | 0.00 | \$0 | 2.00 | \$27,100 | 13.00 | \$78,650 | 2.00 | \$30,250 | | \$66,300 | 0.00 | \$0 | 0.00 | \$0 |
| Income | | | | | | | | | | | | | | |
| First Year | | \$1,500 | | \$1,500 | | \$14,588 | | \$3,000 | | \$5,250 | | \$11,531 | | \$15,000 |
| Remaining Years | | \$4,500 | | \$4,500 | | \$5,625 | | \$2,250 | | \$4,200 | | \$34,594 | | \$45,000 |
| Total LOP Costs | | \$321,719 | | \$250,381 | | \$361,306 | | \$258,219 | | \$230,363 | | \$200,313 | | \$229,188 |
| Total LOP Income | | \$6,000 | | \$6,000 | | \$20,213 | | \$5,250 | | \$9,450 | | \$46,125 | | \$60,000 |
| Net LOP Costs | | \$315,719 | | \$244,381 | | \$341,094 | | \$252,969 | | \$220,913 | | \$154,188 | | \$169,188 |

Assumptions

| | | | | | | | |
|--------------------------------|------------|-----------|------------|------------|-----------|-----------|------------|
| Time to review one item | 5.50 Hrs. | 3.30 Hrs. | 5.50 Hrs. | 5.50 Hrs. | 3.00 Hrs. | 5.00 Hrs. | 5.00 Hrs. |
| Time to write one summary | 16.00 Hrs. | 9.60 Hrs. | 13.00 Hrs. | 12.00 Hrs. | 0.00 Hrs. | 6.00 Hrs. | 5.00 Hrs. |
| Time to encode one summary | 10.00 Hrs. | 6.00 Hrs. | 8.00 Hrs. | 2.00 Hrs. | 8.00 Hrs. | 0.00 Hrs. | |
| Training/QC time per item | 4.40 Hrs. | 4.40 Hrs. | 4.40 Hrs. | 4.40 Hrs. | 2.00 Hrs. | 2.00 Hrs. | 1.00 Hrs. |
| Time to write technical note | | | | | | | 1.00 Month |
| Number of items to review | 100 | 100 | 100 | 100 | 100 | 100 | 60 |
| Cost/day of reviewers | \$125 | \$125 | \$125 | \$125 | \$125 | \$125 | \$250 |
| Cost/day of supervisor | \$275 | \$275 | \$275 | \$275 | \$275 | \$275 | \$275 |
| Cost/day of software developer | | \$275 | \$275 | \$275 | \$275 | \$275 | \$275 |
| Price of Software Package | \$389 | \$389 | \$389 | \$200 | \$500 | | |
| Royalty per Software Package | 0% | 0% | 30% | 30% | 30% | | |
| Price of Update/Publication | \$75 | \$75 | \$75 | \$75 | \$200 | \$5 | \$5 |
| Royalty per Update | 20% | 20% | 20% | 20% | 20% | | |
| Number sold | 100 | 100 | 125 | 50 | 35 | 750 | 1000 |

ANNEX B

ASKARIES OPTIONS BY PRODUCT AND ADDITIONAL FUNDS NEEDED

ANNEX B
ASKARIES OPTIONS BY PRODUCT AND ADDITIONAL FUNDS NEEDED

| | Additional Funding Needed | | | |
|--------------------------------|---------------------------|-----------------------------------|--------------------------------------|--------------------------|
| | None | \$100,000 | \$200,000 | \$300,000 |
| Product 1 Training | Small Catalog | Catalog | User Group Lotus Agenda CD-ROM | AskARIES New Software |
| Product 2 Research | Bibliography | | Lotus Agenda CD-ROM | AskARIES |
| Product 3 Expertise | | Catalog & Copy Technical Notes | CD-ROM | |

ANNEX C
INTERVIEWS CONDUCTED FOR THIS ANALYSIS

ANNEX C

INTERVIEWS CONDUCTED FOR THIS ANALYSIS

| | |
|---|----------------------|
| ACCION International | Maria Otero |
| AID/CDIE | Lee White |
| AID/Jamaica | Gary Vanderhoof |
| AID/PRE | Ross Bigelow |
| AID/PRE | Beth Rhyne |
| ASSIST Ltd. | Paul Miller |
| CARE | Larry Frankel |
| ConSciSys | Scott Carr |
| DAI/GEMINI | Jim Boomgard |
| DAI/GEMINI | Nan Borton |
| Harvard Institute for International Development | Dr. Charles Mann |
| Illinois State University | Dr. Robert Hunt |
| Jeff Ashe and Associates | Jeffery Ashe |
| Kumarian Press | Krishna Sondhi |
| Kumarian Press | Jenna Dixon |
| Maranatha Trust | Douglas Hunt |
| National Cooperative Business Association | Tracy Sullivan |
| OEF | Suzanne Kindervatter |
| ORADME | David Wroughton |
| Peace Corps | Barbara Brown |
| Save the Children | Betsy Campbell |
| SEEP Network | Elaine Edgcomb |
| Technoserve | Peter Reilling |
| Technoserve | Alberto Espinosa |
| Transformation International | Scott Gross |
| Trickle Up | Nigel Collie |
| University of Illinois | Dr. Robert Nelson |
| World Bank | William Steele |
| World Vision | Don Brandt |

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GEMINI Publication Series

GEMINI Working Papers:

"Growth and Equity through Microenterprise Investments and Institutions Project (GEMINI): Overview of the Project and Implementation Plan, October 1, 1989-September 30, 1990." GEMINI Working Paper No. 1. December 1989.

"The Dynamics of Small-Scale Industry in Africa and the Role of Policy." Carl Liedholm. GEMINI Working Paper No. 2. January 1990.

"Prospects for Enhancing the Performance of Micro- and Small-Scale Nonfarm Enterprises in Niger." Donald C. Mead, Thomas Dichter, Yacob Fisseha, and Steven Haggblade. GEMINI Working Paper No. 3. February 1990.

"Agenda Paper: Seminar on the Private Sector in the Sahel, Abidjan, July 1990." William Grant. GEMINI Working Paper No. 4. August 1990.

"Gender and the Growth and Dynamics of Microenterprises." Jeanne Downing. GEMINI Working Paper No. 5. October 1990.

"Banking on the Rural Poor in Malaysia: Project Ikhtiar." David Lucock. GEMINI Working Paper No. 6. October 1990.

"Options for Updating AskARIES." Larry Reed. GEMINI Working Paper No. 7. October 1990.

GEMINI Technical Reports [Not for general circulation]:

"Jamaica Microenterprise Development Project: Technical, Administrative, Economic, and Financial Analyses." Paul Guenette, Surendra K. Gupta, Katherine Stearns, and James Boomgard. GEMINI Technical Report No. 1. June 1990.

"Bangladesh Women's Enterprise Development Project: PID Excerpts and Background Papers." Shari Berenbach, Katherine Stearns, Syed M. Hashemi. GEMINI Technical Report No. 2. October 1990.

"Assessment of the Informal Sector in Morocco." Eric Nelson. GEMINI Technical Report No. 3. November 1990.

External Publications:

"Training Resources for Small Enterprise Development." Small Enterprise Education and Promotion Network. [Forthcoming.]

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