

**INFORMATION AND DEVELOPMENT:
STRATEGIES FOR DISSEMINATING DEVELOPMENT LITERATURE**

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Information is important to the development process. Not only does information expand the possibilities of project strategies, but it also facilitates participatory development and empowerment. Information is an asset and a resource for development professionals, sponsoring governments and agencies, and the target population. This paper considers the variety of distribution methods available for disseminating development literature. The premise of this paper is that given the infrastructure of the developing world and the costs associated with connectivity, the current trend of making information available via the Internet is less effective than an alternative strategy for disseminating development-related literature of using CD-ROMs or other storage devices in lieu of or in addition to putting documentation on the Internet.

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CD-ROMs – Developing countries

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Information technology -- Developing countries

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Introduction

Information is important to the development process. Not only does information expand the possibilities of project strategies, but it also facilitates participatory development and empowerment. Information is an asset and a resource for development professionals, sponsoring governments and agencies, and the target population. This paper considers the variety of distribution methods available for disseminating development literature.

The premise of this paper is that given the infrastructure of the developing world and the costs associated with connectivity, the current trend of making information available via the Internet is less effective than alternatives. An alternative strategy for disseminating development-related literature is to use CD-ROMs or other storage devices in lieu of or in addition to putting documentation on the Internet.

Organization

The paper is divided into eight sections: Development, Development Professionals and Information; Development Literature; Technology in Africa; Case Study and Analysis; Issues raised by the Case; Discussion; and Recommendations for further study.

Section I, Development, Development Professionals and Information, considers the definition of development, the role of the development professional, and the need for information in the development process.

Section II, Development Literature, provides information about the origins of development literature and the current strategies available for disseminating it.

Section III, Technology in Africa, looks at computers and infrastructure in Africa. By examining the situation in Africa, this paper looks at a continent that by United Nations standards, the United Nations Human Development Index and the United Nations Telecommunications Index, is the least developed region of the world.

Sections IV and V, Case Study and Analysis and Issues raised by the Case, examine in detail a product and organization. The product is a series of CD-ROM-based digital libraries, and the organization is a non-governmental organization (NGO) in Belgium. To analyze the case, an existing survey and its results were reviewed, the content of a digital library was compared to the availability of the same content via the Internet, and some correspondence received by the organization were studied. Lastly, unresolved issues are explored.

All of the contextual description and case study analysis were undertaken to determine the feasibility and value of distributing development literature via CD-ROM. Section VI, Viability of CD-ROM, reviews existing literature regarding the use of CD-ROM technology in the developing world to distribute information. Section VII, Discussion and Conclusion, the question of whether CD-ROMs are a viable option for distributing development literature is answered in part by considering all of the issues raised throughout the paper. In Section VIII, Recommendations for further study, recommendations for further study are posed.

Section I: Development, Development Professionals, and Information

Over time development has been defined in purely economic terms, purely social terms, and as a mix of the two. In economic terms, development is a goal achieved by raising the per capita GNP and the growth rate of the economy. While this definition is easily quantified and assessed, it says nothing about the status of society. In the 1960s and 70s, this definition was questioned because many countries in the developing world were able to achieve this goal but it was clear that the living situation in those countries was no better.¹

Since that time, the definition of development has incorporated economic goals into the broader goal of improving the entire society. Economics is now seen as simply a facet of development and not necessarily a means or an end in itself.

While there is general agreement that development is more than just economics, there are still a variety of definitions to choose from. Development is seen as "the sustained elevation of an entire society and social system toward a 'better' or 'more humane' life."² Development is "a process of expanding the real freedoms that people enjoy."³ "[Development] is a capacity defined by what [a community] can do with whatever they have to improve their quality of life and that of others."⁴ "[D]evelopment is a possession of a desire for improvement and the ability to bring it about. It is more a matter of motivation and knowledge than it is of wealth."⁵ Development is "a process

¹ Michael P. Todaro. "Economics, Institutions, and Development: A Global Perspective." *Economic Development*. Seventh Edition. Reading, MA: Addison-Wesley, 2000, pp. 1-28.

² Todaro, p. 16.

³ Amartya Sen. "The Ends and Means of Development." *Development as Freedom*. New York: Anchor Books, 1999, pp. 35-53, p. 36.

⁴ Russell L. Ackoff. "On the Nature of Development and Planning." In *People Centered Development*, Edited by David C. Korten and Rudi Klauss. West Hartford: Kumarian Press, 1984, pp. 195-197, p. 195.

⁵ Ackoff, p. 195.

intended to enlarge and expand the confidence, the capacity, and the creativity of human beings and thus to enrich their lives and improve their futures.”⁶

Another way of interpreting the goal of development is capacity building, defined as “the process by which individuals, groups, organizations, institutions, and societies develop abilities (individually and collectively) to perform functions, solve problems and set and achieve objectives.”⁷

The development community generally agrees that participatory development is the “most promising approach for decreasing dependency, building self-confidence and self-reliance of the people.”⁸ Information is essential to the capacity building process because access to information enables people to be better informed and, as a result, better able to influence and make the decisions.⁹

Essentially, development is a process of personal and societal improvement of quality of life through greater community participation, capacity building, and empowerment. This improvement is brought about by action on the part of the community and, often, by intervention of a development professional.

While communities and cultures possess knowledge and practices of their own, strategies and practices of other communities and cultures can be useful as well. Here is where a development professional can be particularly helpful, in tapping into the local knowledge, recording that for the future, and bringing in ideas from other areas.

⁶ Morse as quoted in Pierre Pradervand. *Listening to Africa: Developing Africa from the Grassroots*. New York: Praeger, 1989, p x.

⁷ P.R. Ballantyne as quoted in Iyabo Mabawonku. “Providing Information for Capacity Building: the role of an NGO library in Nigeria.” *Information Development*, vol. 17, no. 2, June 2001, p. 100.

⁸ C.V. Rajasunderam. “A Canadian-African Dialogue in Participatory Development Communication.” In *Participatory Development Communication: A West African Agenda*. Edited by Guy Bessette and C.V. Rajasunderam. Ottawa: International Development Research Centre, 1996. Available online via <http://www.idrc.ca/books/focus/802/>, Last accessed 12/10/01.

The development professional works with the community in some capacity with the goal of facilitating development. Whether the development effort is internationally organized or community-based with a local leader taking on the role, inevitably a person or group of persons facilitates the process and brings or collects information for the community.

This role as facilitator goes well with the approach of "assisted self-reliance" as a strategy of participatory development. Assisted self-reliance is "a strategy for using external resources - advice, funds, training, material assistance - not so much as to produce direct results as to strengthen local capacities to initiate, manage, modify, and sustain activities that produce benefits."¹⁰

"The proper role of the professional planner is to provide others with information, instruction, motivation, and the resources that can increase the effectiveness with which they plan for themselves."¹¹ In considering the role of the development professional, the need for access to information is clear.

Section II: Development Literature

The developed world writes extensively on the topic of development. Programs are documented, and strategies are published. Governments and agencies in the developing world also publish on development projects and programs – reporting successes and failures.

⁹ Anja Moller Rasmussen. "Information and Development: the information effect." *Information Development*, vol. 17, no. 1, March 2001, p. 14-15.

¹⁰ Norman Uphoff. "Assisted Self-Reliance: Working With, Rather than For, the Poor." *Strengthening the Poor: What Have we Learned?* Edited by J.P. Lewis. New Brunswick: Transaction Books, 1988, pp. 47-57, p. 47.

¹¹ Ackoff, p. 196.

Currently, development literature is distributed primarily in paper form and secondarily via some electronic medium, as documented by the Food and Agriculture Organization (FAO) Survey discussed more fully later in this paper. The FAO Survey found that 91% of the respondents produced their information in print, with 49% producing their information in electronic form as well.¹²

Several issues with the use of print rather than electronic materials arise, including the cost of acquisition and maintenance. While differential pricing structures are sometimes implemented for purchasers in the developing world, even reduced cost publications from the developed world can be prohibitively expensive.¹³ In addition, mail fees, bank charges, and unreliable mail services make acquisitions difficult at best.¹⁴ These issues relate in general to acquiring international publications.

The acquisition of local information, particularly project-related documentation, is easier for the local country but this information is not widely disseminated. Generally, libraries in other countries obtain these materials through cooperative loan agreements. Again, while a system of sharing is beneficial and provides access to information otherwise unavailable, the issue of mail costs and unreliable mail systems makes it less than ideal.¹⁵

An interesting development within the last five to ten years is the use of the Internet to disseminate information. In 1992, the United Nations (UN) adopted the Rio Declaration, which in part called for wider access to development literature published

¹² FAO Survey response to Question 16 (Appendix B).

¹³ Subbiah Arunachalam. "How the Internet is failing the developing world." Based on a talk delivered by the author at "Science and Communication for the Next Millenium: Ninth International Conference of the International Federation of Science Editors," in Egypt, June 1998. Available online via <http://www.abc.net.au/science/slab/infopoverty/story.htm>. Last accessed February 24, 2002.

¹⁴ Susan C. Harris. "Agricultural Information in Developing Countries." *Library Trends*, vol. 38, no. 3, Winter 1990, pp. 578-634.

internationally.¹⁶ Since that time, the UN system has increasingly put more and more of its publications online. While this is useful, many of the document collections are difficult to use and are cumbersome to search. Also, many of the publications available do not contain strategies for solving problems, rather they are speeches, addresses, and official statements of the UN secretariat – of little use to development professionals.

Some of the UN family have developed useful digital collections, FAO and UNAIDS for example. But these are two of many other organizations. Individual development organizations in the North put their information online but generally these must be searched by individual agency. No online library of development information integrates the various agency information into one searchable library.

Another interesting trend is to make medical and scientific information available for free online to the developing world. Two particular projects were those undertaken by the British Medical Journal and the World Health Organization. The World Health Organization has coordinated with several publishers to make their journals available online for free to the developing world. The British Medical Journal also makes its content available for free to anyone visiting the site.

The use of the Internet is useful in distributing medical and scientific information, as this information is not static in nature, and new developments are constantly arising. Thus, when a new medical treatment is discovered, getting this information online can be done quickly and the results can also be seen virtually immediately.

[T]o access information in cyberspace, one first needs access to the corresponding electronic technology, and most scientists and scholars in

¹⁵ Harris.

¹⁶ United Nations. "Annex 1: Rio Declaration on Environment and Development." *Report of the United Nations Conference on Environment and Development*. June 3-14, 1992. Available online via <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>. Last accessed April 13, 2002.

the developing countries do not have access to the new information technologies.¹⁷

So, the issue becomes a question of access to technology. The reality is that in the developing world even in well-funded educational institutions, access to the Internet is limited if it is available at all. As such, this medical information may not reach its intended audience.¹⁸

Another possible method of distributing development literature is via CD-ROM. In reviewing the available literature on both the availability of endogenous and exogenous development information as well as the literature on publishing in the developing world, there is little analysis of the role of digital libraries, whether stored on a physical device or available via the Internet. A multitude of distribution strategies are available. The use of bibliographic databases, generally CD-ROM based but also some Internet, is well-documented and has been researched in terms of effectiveness.¹⁹

Section III: Technology in Africa

This paper considers digital libraries geared to the developing world, particularly the applicability and usefulness of the digital libraries in Africa. While access to a computer is still an issue for the general population, it appears from the FAO Survey that access to CD-ROM workstations is not a significant hurdle, while reliable, inexpensive, and high-speed Internet access is still a problem.²⁰

African Internet Connectivity, a website run by a Mike Jensen in South Africa, compiles and presents statistics about the availability and cost of Internet access in

¹⁷ Arunachalam.

¹⁸ Arunachalam.

¹⁹ See Section VI: Viability of CD-ROM in this paper.

²⁰ FAO Survey responses to Questions 9, 12 and 57 (Appendix B).

Africa.²¹ In his website, he lists the cost of email access, Internet access, and local phone call rates in virtually every African country.²² While the data varies from country to country, generally speaking, Internet access costs between \$100 and \$1700 for five hours per month.²³ The majority of countries fall into the \$400 to \$1000 per year range for five hours of Internet access per month.²⁴ This amounts to approximately \$30 to \$100 per month for Internet access.²⁵ Generally the price difference is not absolutely different, but rather the purchasing power is.²⁶ In Ghana, for example, Internet access costs just \$50 per month, but this is twice the average monthly salary of the average Ghanaian.²⁷ “Access to sufficient international bandwidth for carrying out interactive activities over the Internet is still a major problem in Africa. The majority of countries connect with less than 64Kbps.”²⁸ There has been high growth of Internet services, but network density is still about 1 to 1000 people.²⁹

Section IV: Case Study and Analysis

About the Product

The Humanity Libraries Project was founded to “provide all involved in development, well-being and basic needs with access to a complete library of around

²¹ Mike Jensen. "African Connectivity." Available online via <http://www3.sn.apc.org/>. Last accessed March 31, 2002.

²² Jensen.

²³ Jensen.

²⁴ Jensen.

²⁵ Jensen.

²⁶ Ben Petrazzini and Mugo Kibati. "The Internet in Developing Countries." *Communications of the ACM*, vol. 42, no. 6, June 1999, pp. 31-36.

²⁷ Petrazzini and Kibati.

²⁸ Lishan Adam. "Connectivity and Access for Scientific Communication and Publishing in Africa." International Network for the Availability of Scientific Publications. Available online via <http://www.inasp.org.uk/psi/scpw/papers/adam.html>. Last accessed February 24, 2002.

²⁹ Adam.

3,000 multidisciplinary books containing practical knowhow and ideas.”³⁰ The main vehicle for distributing this information is a collection of CD-ROM-based digital libraries. The Humanity Libraries Project has created several digital libraries of development information. Many of these are available for examination at the New Zealand Digital Libraries Project website (<http://www.nzdl.org>) as well as on CD. The libraries are built using software created by the University of Waikato. The Greenstone Digital Library software is available for free via the website or by requesting it on a CD-ROM and is open-source.³¹

The CD-ROMs are sold for a fee but are also available for free. There are several places online where prices are quoted. Unfortunately, the prices vary, and it is unclear what is being purchased, one CD-ROM or several. The most recent information states that organizations in developed countries pay \$30 each, while organizations in developing countries only have to pay \$13 each.³² A discount is available for bulk purchases, and for each CD-ROM purchased, four are distributed free to countries in the South.³³

The Humanity Development Library was the first CD-ROM digital library created by HumanInfo. It contains

1,230 publications--books, reports, and magazines--in various areas of human development, from agricultural practice to economic policies, from water and sanitation to society and culture, from education to

³⁰ Humanity Development Library. “About this collection.” Available online via <http://www.nzdl.org/cgi-bin/library?a=p&p=about&c=hdl>. Last accessed April 3, 2002.

³¹ “The New Zealand Digital Library.” Available online via <http://www.nzdl.org/>. Last accessed April 3, 2002.

³² HumanInfo NGO. Humanity Development Library. “Ordering your Humanity Development Library 2.0.” Available online via <http://payson.tulane.edu:8083/cgi-bin/gw?e=p1c10home-hdl-1-C.1-11-100-20-00&q=&a=p&p=order>. Last accessed April 13, 2002.

³³ HumanInfo NGO. “Ordering your Humanity Development Library 2.0.” Available online via <http://www.humaninfo.org/order.htm>. Last accessed April 13, 2002.

manufacturing, from disaster mitigation to micro-enterprises. It contains a total of 160,000 pages and 30,000 images.³⁴

The other libraries are similar in terms of contents though the exact contents vary depending on the theme of the collection. For example, the Food and Nutrition Library has items that are distinct from the World Environmental Library.

Each library is searchable, though each one has some unique search features and capabilities. The software program indexes the collection. The builder of the library can create and manipulate the different access points and the subject headings. Generally speaking, there are five ways to search the library collection: by word, subject, title, organization, and how to listing. The “how to” listing is one of the most interesting features in that it allows access by solution. An example is if a user is looking for information about breeding cattle, in the “how to” listing, there is a category which will solve that particular problem. This feature makes this library distinct from other online collections of development literature.

About the Organization

The organization that develops these products is HumanInfo NGO, formerly known as Global Help Projects. In 1994, Dr. Michel Loots and two others started Global Help Projects to create libraries of information. Dr. Loots' goal was to start the Humanity Libraries Project. The first version of the Humanity Development Library was created at time. In 1996, Dr. Michel Loots left Global Help Projects and founded HumanInfo NGO.³⁵

³⁴ “About this collection.”

³⁵ Interview with Dr. Michel Loots, February 2002.

The mission of HumanInfo is "provide universal free or low-cost information access through co-operation between UN Agencies, Universities and NGO."³⁶ The Humanity Libraries Project itself aims "to provide all person involved in development, well-being and basic need, access to a complete library containing most solutions, know-how and ideas they need to tackle poverty and increase the human potential."³⁷

At this point, HumanInfo employs a staff of about 45 people, with Dr. Loots' part-time assistant working out of London and the remaining working in Romania doing digitization. The organization has developed at least nine libraries of development literature, some organized by theme, some by geographic region, and others by agency.³⁸

HumanInfo has been led from its inception by one person, Dr. Loots. He calls himself a "humanitarian entrepreneur." A traditional entrepreneur seeks to maximize profit, while Dr. Loots seeks to maximize the benefit to humanity. As an entrepreneur, Dr. Loots chooses to work without an advisory board of any kind because as an individual, he can make decisions more quickly and efficiently and without interference. He says that as an action-oriented individual, he is better off without a board.³⁹

HumanInfo generates income through securing digitization contracts with development agencies. Essentially, HumanInfo secures copyrighted materials from development agencies, governments, universities and other NGOs free of charge. In partial exchange, HumanInfo digitizes the development literature produced by these organizations for relatively low cost. The partner organization agrees to the use of

³⁶ HumanInfo NGO. "Humanity Libraries Project." Available online via <http://www.humaninfo.org/>. Last accessed April 13, 2002.

³⁷ HumanInfo NGO. "Objectives of the Humanity Libraries Project." Available online via <http://www.humaninfo.org/details.htm>. Last accessed April 13, 2002.

³⁸ Loots.

³⁹ Loots.

materials without requiring a fee for the copyright and to the copying of the materials for use in the developing world as a part of the digital library. Generally, HumanInfo earns about \$500,000 US each year, \$450,000 US is consumed by internal costs and the remaining \$50,000 US is used to produce and distribute the CD-ROM-based digital libraries.⁴⁰

The initial goal of the Humanity Libraries Project was to digitize and incorporate 3,000 development-oriented books into libraries. In February 2002 that goal was achieved. Dr. Loots is reformulating organizational goals at this time. What he sees as next steps are to get 15 to 20 organizations to promise \$30,000 to 50,000 US to finance the distribution of 20 million CD-ROMs over the next three years. His goal is to saturate the developing world with the information it needs.⁴¹

Dr. Loots' original plan was to develop the system and method for building digital libraries of development information so that the organizations themselves could take on the job. At the time, organizations were not interested in digitizing their materials. He is trying to encourage and empower organizations to do this themselves. His goal is to get organizations to give him \$30 to 50K each year to distribute 1-2 million CD-ROMs. He would need 15-20 organizations to distribute the CD-ROMs and to buy into this model. His goal is to saturate rather than send on demand. He sees himself as a catalyst who starts the information project that will then be continued by the organizations themselves.⁴²

⁴⁰ Loots.

⁴¹ Loots.

⁴² Loots.

Analysis

Over the past 8 years, since the Humanity Libraries Project was started, between 250,000 and 300,000 CD-ROM digital libraries have been distributed. More specific information is unavailable. When I asked Dr. Loots about additional records, he said that to find an exact amount or breakdown by title, he would have to go through each email and invoice to determine that because he does not keep any consolidated records.⁴³

Three forms of analysis were completed: reviewing results of a survey conducted by the Food and Agriculture Organization of the UN in 1998, comparing the contents of one of the libraries with information freely available via the web, and studying emails sent to Dr. Loots for feedback.

FAO Survey Results

In 1998⁴⁴, the United Nations Food and Agriculture Organization did a survey to assess the usefulness of a package of CD-ROM libraries containing mainly FAO generated publications. (See Appendix A) Only one of the CD-ROMs was created by HumanInfo, the Humanity Development Library.⁴⁵ As a result, this survey is limited in terms of its ability to analyze the usefulness of the content, but it is valuable in considering the market for such an item. Lastly, the raw results were not available. Aspects of the answers of the collated results were sometimes slightly unclear. (See Appendix B for report)

⁴³ Loots.

⁴⁴ During the interview, Dr. Loots said that the study was performed three years ago. Since this is early 2002, I thought it best to conservatively place the survey at 1999. Also, the survey is referred to in an article coauthored by Dr. Loots, and it refers to a date of 1999. (Ian H. Witten, Michel Loots, Maria F. Trujillo, and David Bainbridge. "The Promise of Digital Libraries in Developing Countries." Available online via <http://www.cs.waikato.ac.nz/~ihw/papers/01IHW-ML-MF-DB-PromiseDL.pdf>. Last accessed April 13, 2002.) Dr. Loots indicated that the results were unpublished. He agreed to send them to me for the paper. A search of FAO deposits in David Library of the University of North Carolina did not yield any reference to this survey.

The survey was sent to 363 individuals, with less than 100 completed surveys being returned. The responses were broken down by region and by organization. Interestingly, the percentage of respondents from Eastern Europe was greater than from any other region, 59% with the other regions returning at a rate of 20%. The response rate by group was highest for NGOs with a rate of 40%.⁴⁶

The next part of the survey related to the size of the organization and the available technology. Since the survey was about the use of technology, it is possible that the proportion of respondents with access to technology is skewed. The access of an individual employee to a workstation is not clear, but the survey did report that 40% of the respondents worked for organizations with more than 100 employees and that 38% of the organizations had more than 50 computers. Eighty-five of the 88 responding organizations reported having computers with five organizations, primarily in Africa, reporting to have workstations with 386 or 486 processors, one having access to only an Apple, and the remaining 84 having Pentium processors.⁴⁷

In the survey results, it was determined that when totaled, there are about 1500 CD drives for 6500 employees. The number of responding organizations without access to a CD drive at all was only three. Twenty percent of the respondents said their organization had no server or network access, while 88 percent had Internet access. While this might indicate that Internet access would be a viable option to disseminating information, in looking at the comments relating to use of the Internet, it becomes clear that the Internet access is less than optimal. Twelve of the 19 free response answers to the question about the use of the FAO Internet site indicated that they either need help with

⁴⁵ FAO Survey.

⁴⁶ FAO Survey.

getting access or that the connection to the Internet is quite slow. Unfortunately, there were not any questions about the use of the Internet in terms of cost associated with use or downloading, nor were their questions about the reliability of Internet access.⁴⁸

While there are a number of bibliographic and statistical databases available to the development community, the information sought is mainly text. Respondents identified the type of agricultural information they use as 82 percent text, 65 percent bibliographic, and 54 percent statistical.⁴⁹

In terms of their own information, 92 percent of the responding organizations publish their work, with 91 percent using print and 49 percent using electronic formats, mainly HTML. What is particularly meaningful is that 79 percent of the respondents from the developing world said that they would like their own information to be available in a similar format to the Humanity Development Library.⁵⁰

A few questions related to the Humanity Development Library.

	Organization in a Developing Country	Organization in a Developed Country
1. Useful to organization	77%	59%
2. Useful inclusion to FAO collection	81%	66%
3. Want more CDs	92%	100%
4. Making collection more widely available would be useful and would assist agricultural development	74%	42%

⁴⁷ FAO Survey.

⁴⁸ FAO Survey.

⁴⁹ FAO Survey.

⁵⁰ FAO Survey.

These responses clearly show that the Humanity Development Library CD-ROM is perceived as an asset to the development community.⁵¹

Compare CD-ROM contents with information online

In looking at the East African Development Library 1.0, 452 documents are in English. I assigned each English document a number sequentially with the documents in alphabetical order. I then used a random number table to select 10 percent of them (45). Of the 45 selected, only nine were available for free, full-text online. Of the remaining 36, one was available in excerpts, ten were available by mail, and 25 were not found.

According to this sample, 20 percent of the documents are available for free via the Internet. For more than 50 percent of the documents, there is no information about them online. While this is only a sample of documents from one CD-ROM, this is similar to informal observations of this and other CD-ROMs developed by HumanInfo.

Feedback

Due to time constraints and the accessibility of potential users, rather than doing a survey, correspondence received by HumanInfo was reviewed. While this method does not provide as much information as a survey might, the correspondence does reveal some interesting information.

Fifty-one letters and emails were provided by Dr. Loots for analysis. The correspondence was Bate-stamped, apparently on receipt though the receipt date is unclear. The correspondence sent was stamped 1472-1522. Dr. Loots responded to this correspondence between February 8, 2002 and March 11, 2002, as indicated by handwritten notes on each letter.

⁵¹ FAO Survey.

The letters were received from more than a dozen countries. The majority of letters, 32 or 63 percent, originated in Africa. Twenty-seven percent of the letters were from the Asia/Pacific region. Europe and North America accounted for eight percent combined, four percent each, and two percent was from an unknown origin.

Interestingly, no letters were received from South or Central America, Eastern Europe, or Australia.

Each letter indicated the name and address of the requestor. Many of the letters, 80 percent, indicated the occupation or the organization of the requestor as well. Forty-two percent of these were from non-governmental organizations, 12 percent were from government agencies, 24 percent were from students, 12 percent were from universities, two percent were from schools, and seven percent were from agricultural workers.

In terms of content, the letters were generally requesting CD-ROMs, 36 letters explicitly requested CD-ROMs. The letters also requested grants (three), training (one), and partnerships (11). The grant and training requests appeared to be form letters. The partnership requests were to be a distributor of the CD-ROMs.

The requestors rarely indicated how they came to write to HumanInfo. Six indicated that they had been referred by a colleague or friend or had seen the CD in use. Only two indicated having seen the website. Actually, two letters indicated that they did not have computers but that they would send the product to others who did.

In response to the requests, HumanInfo distributed CD-ROMs. HumanInfo sent CD-ROMs to each correspondent, whether they requested one or not. For some of the CD-ROMs, it was difficult to determine what the actual title was from the notations. For those, the number sent is grouped into “unknown.”

CD-ROM	Number distributed
Humanity Development Library	34
Community Development Library	402
Food & Nutrition Library	25
World Environmental Library	15
East African Library	5
Africa Collection for Transition	8
UNAIDS	12
Department for International Development (Development arm of the British Government)	1
Critical Collection on Global Issues	1
Unknown	41
Total distributed	544

This paper has focused on Africa. Dr. Loots was entirely unaware that the paper would look at any region in particular. This sample is random in that a stack of letter was selected without looking at the content. HumanInfo simply wanted to send 50 letters. They sent 51 due the fact that taking the last stamp and subtracting the first stamp does not include the last stamped letter in the total.

While the requestors do reveal information about their organizations and themselves in their letters, they do not reveal much about the technology available to them, how the CD-ROM will be used, what the nature of their users is, or if what they received matches what they were hoping to get.

Section V: Issues raised by the Case

The Audience

An interesting issue is who the audience is. In reading about the CD-ROMs and reviewing the sample documents, they seem most appropriate for development professionals. In reading the website and the feedback from users, it seems that some would want to use them to educate as well. While this might be a secondary benefit, the

statements on the website and in the letter to users included with each CD-ROM are somewhat misleading. The first is that the Humanity Development Library CD-ROM contains “[t]he equivalent knowledge of 16 full university degrees” and that using “a decentralized basis of 5,000 PC’s with CD-ROM drives, dispersed over 1,000 NGO’s, schools and other places, will provide a continuous education base equivalent to a High School level to 60,000 persons.”⁵²

In talking with Dr. Loots, he sees the CD-ROMs as useful for the population of developing countries because the contents are general in nature and would be helpful to communities. Many of the CD-ROMs are for the general public to both facilitate development and to expose them to problem solving and the English language. He does agree that the CD-ROMs might be difficult for the population to use due to literacy and language issues. He also acknowledges that some of the CD-ROMs, particularly the ones with medical information, are aimed for a more specialized audience, but even these, he believes, can be used by the public.⁵³

Translations

HumanInfo is looking for development professionals to translate the CD-ROMs into local languages and pass those translations back so that they can be mass-produced. Unfortunately, it has been difficult to get it translated into local languages. The interface can be interpreted into other languages but there has been little headway in translation. One of Dr. Loots' ideas is to solicit universities to get students to translate the publications. His idea is that it would be beneficial to students and with the number of

⁵² HumanInfo NGO. “Welcome letter to our Users.” Available online via <http://www.humaninfo.org/intro.htm>. Last accessed April 1, 2002.

⁵³ Loots.

university students, it would be relatively easy to translate the entire group of CD-ROMs, although the quality of the translation would be variable.⁵⁴

Sustainability

In talking with Dr. Loots, he indicated that he would like to retire from HumanInfo NGO in three years and pursue other development-related activities. While this is understandable, it does raise an important issue. Since the organization is run by Dr. Loots alone, there is no natural replacement or second in command to take his place. Someone would have to be brought in from the outside, or the project would have to cease.

Dr. Loots envisions development organizations taking on this project on their own and building their own digital libraries. While this might be possible, digital libraries built by each organization will be very different products. The United Nations puts meeting notes and proclamations on its website. If the United Nations makes its own libraries, who is to say that it will contain any solutions or project reports. Also, the ability to gather a variety of documents by different organizations and build a library based on a theme will be lost if each organizations builds its own collections.

Copyright issues

Copyright is probably one of the most significant issues. At this point, Dr. Loots has to make agreements with development agencies for the use of each and every publication. On its website, HumanInfo makes the argument that the commitment by the international development community to facilitate the timely and inexpensive transfer of information to the developing world is hindered by copyrighting documents.

⁵⁴ Loots.

HumanInfo suggests a policy of “copyleft.” This term originated in the 80s in a software context.⁵⁵ Copyleft means "a copyright notice that permits unrestricted redistribution and modification, provided that all copies and derivatives retain the same permissions."⁵⁶

The United States government does not copyright its materials. It does not seem unreasonable to ask the same of development organizations, particularly when the organizations themselves recognize the need for disseminating their research findings to the developing world.

Finding aids

The CD-ROMs are easy to use and contain valuable information. However, at this time, there is no way of searching across the CD-ROMs and there is no index to what is available in each library.

Section VI: Viability of CD-ROM

Several studies have been conducted to determine the availability and value of CD-ROM-based bibliographic databases. In terms of information relating to the implementation of technology to facilitate the distribution of development information to the developing world, the literature is from the early 90s. The strategies employed are bibliographic databases, fax services for document delivery and the use of expert information centers. All of these solutions involve getting the required information after some delay, because the information provided on-site is simply bibliographic and not full text.

⁵⁵ “Copyleft.” *Wikipedia*. Available online via <http://www.wikipedia.com/>. Last accessed April 1, 2002.

⁵⁶ “Copyright and the Information Renaissance.” Available online via <http://www.dsl.org/copyleft/>. Last accessed April 1, 2002.

A study of information centers in Nigeria found that CD-ROM was an appropriate technology for disseminating information as early as 1994. According to this study, while the bibliographic databases provided much of what researchers needed in the abstracts, libraries preferred to invest in full-text CD-ROMs. The authors found that 54% of responding Nigerian libraries and information centers had access to a single CD-ROM workstation. One of the recommendations from the study was that the Technical Centre for Agricultural and Rural Cooperation in The Netherlands donate full-text publications on CD. Also mentioned was a project by the Consultative Group on International Agricultural Research and the World Bank to distribute full-text agricultural research on a set of 17 CD-ROMs for “the giveaway price of \$1950.”⁵⁷

Whether this is truly a giveaway is unclear, but perhaps in 1994, this was a bargain. Regardless, if libraries and information centers are willing to spend \$2000 for 17 CD-ROMs, then it does seem that the case study described is a viable option.

Another study of the use of CD-ROM technology in 1993 compared the cost of CD-ROM vs. print. According to that author’s findings, a megabyte of information on CD-ROM costs about ½ a cent while the equivalent amount of information in print costs \$7. The use of CD-ROMs, particularly full-text, also eliminate the need for paying high telecommunications costs. Lastly, CD-ROMs are durable and portable.⁵⁸

These studies and many others support the idea that CD-ROM technology is an effective technology for disseminating information to the developing world. What they do not address is the current availability of development literature particularly in an

⁵⁷ Olatunde R. Adeniran, Thomas A. Adigun, Mathew I. Okoh and O.T. Eytayo. “Availability and use of CDROM products in Nigerian libraries and information centers.” *The Electronic Library*, vol. 12, no. 3, June 1994, pp. 155-168.

electronic format. The most recent study of the availability of development material was completed in 1989 and published in 1992, but even this looked specifically at a bibliographic database of development literature geared to Botswana.⁵⁹

In Botswana, the producers of development literature were identified as: government organizations and agencies, the University of Botswana, non-governmental organizations, and the private sector. According to the study, 46% of development literature about Botswana is government generated. "It is almost impossible for policy makers to gain access to development literature generated within developing countries." An example of the problem caused by this lack of information is that the Ministry of Health of Nigeria did the exact same study twice within three years without intending to replicate the first one. The International Development Research Centre (IDRC) recognized the need for better access to development literature and provided support for the development of an African documentation system. The IDRC study looked at the availability of development information about Botswana in this database.⁶⁰

The ultimate conclusion was that while the database was useful in providing references to available development literature, the relatively small amount of information indexed as being authored by NGOs and the private sector indicates that development literature is still not being disseminated effectively.⁶¹

⁵⁸ Bright W.M. Nkhata. "CDROM in developing countries: is it a technology for the distribution of information." *The Electronic Library*, vol. 11, no. 4/5, August/October 1993, pp. 295-297.

⁵⁹ L.O. Aina. "Access to development literature in Botswana." *Information Development*, vol. 8, no. 2, April 1992, pp. 104-108.

⁶⁰ Aina.

⁶¹ Aina.

According to Aina, the most common form of literature to be held by libraries and information centers is government literature. The literature from other agencies and institutions are less apt to be published and or included in libraries.⁶²

Duplication of efforts and waste of resources continue to be a problem. Another important consideration is the fact that while ideally governments have the best interests of their constituents in mind, having alternative opinions and viewpoints is important in achieving growth and progress. Non-governmental organizations, both private and public, and international organizations have the opportunity to be objective or more critical than the local/national governments might be.

Section VII: Discussion and Conclusion

Since 1992, when the Botswana study was published, it appears that no further study of the availability of development literature, the ability of development agencies to publish their literature, or the effectiveness of distributing development literature has been attempted. It is unclear why this issue has not received more attention, but what does seem clear is that this sort of analysis is still needed. This is an important area because of the near universal acceptance of the value of information. In this time of scarce resources for development projects, learning from our previous work in similar areas is vital for making the most out of the available funds.

Information is almost universally viewed as essential to the development process.⁶³ A significant issue is access. Using CD-ROMs is a possible alternative to print or Internet-based publishing of development literature.

⁶² Aina.

⁶³ Kingo Mchombu. "Impact of Information on Rural Development: Background, Methodology, and Progress." *Making a Difference: Measuring the Impact of Information on Development*. Edited by Paul

This paper looked particularly at the technology infrastructure in Africa to determine whether CD-ROM is a viable publishing medium. The telecommunications infrastructure in Africa is growing, and nearly every country in Africa has access to the Internet. Despite that, online access is quite expensive and is generally not available in rural areas. This suggests that the Internet may not be the most appropriate mechanism to distribute development literature.

The case study of the Humanity Libraries Project presents one alternative to Internet and print publishing. The product is a series of CD-ROM-based digital libraries of development literature. This information is collected from a variety of organizations, agencies, and governments. A survey completed by FAO in 1999 indicated that development professionals would welcome full-text CD-ROM libraries. Analysis of correspondence indicates that the product is particularly useful in Africa.

Intuitively it is clear that information is necessary for development and that distributing information in an inexpensive and accessible medium is appropriate. Given the availability of CD-ROM readers, according to the FAO Survey and the CD-ROM literature, and the cost of print publishing, distribution, and maintenance, distributing full-text development literature via CD-ROM seems a very viable and inexpensive method for disseminating development literature more widely.

Section VIII: Recommendations for further study

After reviewing the literature and considering the case, there are several areas of possible future study:

1. In what medium is development literature currently being distributed?

2. Which medium is “better”? Better can mean a variety of things: easier to access, easier to manipulate, easier to maintain, easier to distribute, cheaper to produce/reproduce, and/or more timely in terms of availability. Other issues to consider in determining the desirable medium are the associated costs of copying, mailing, printing, acquiring technology and materials.
3. Are there reasons why development professionals and in-country citizens might prefer one distribution medium over another?
4. If CD-ROM technology was used to publish development literature, would development organizations publish more and include more documentation than what is currently published in print or on the Internet?
5. How has the disseminated information been used? (Even the studies of the use of bibliographic databases do not delve into the use of the information sought/received.)
6. What is the ultimate impact of the information and does that bear any relationship to the medium?

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Appendix A⁶⁴**FAO WAICENT AGRICULTURE INFORMATION NEEDS SURVEY****A. Respondent General Information**

1. Organization Name and Department:

2. Respondent Name and Title:

3. Total employees in Organization or Department: a. 1- 20 b. 21 - 50 c. 51- 100 d. Over 100
4. How many PC's are there in your Organization? : a. 1- 5 b. 6 - 20 c. 21- 50 d. Over 50
5. Which type of PC's are used in your Organization:
a. 286 b. 386 c. 486 d. Pentium e. Other : _____
6. Which system software is used: a. Windows 3.x b. Windows 95/ 98 c. Windows NT d. Unix
e. Linux f. Apple g. Other _____
7. How many CD readers are there in your Organization? a. 1- 5 b. 6 - 20 c. 21- 50 d. More _____
8. Are the PC's linked to a Server ? a. All or almost all b. Some c. None
9. Do you have Internet access? a. Yes b. No
10. If so, have you visited the FAO Web site? a. Yes b. No
11. Is the FAO web site information easily accessible? a. Yes b. No
12. Ideas/ suggestions to help the FAO site meet your online agriculture information needs :

13. Do you hold PC training courses for employees? a. Yes b. No

**B. Information Access and Production**

14. Which type of agricultural information is mostly used within your organization?
a. Textual b. Statistical c. Maps d. Bibliographical
15. Does your Organization produce information? a. Yes b. No (go to section C)
16. If so, in which format? a. Print b. Microfiche c. Electronic d: other : _____
17. If electronic, in which format is it available? a. RTF b. HTML c. PDF d. Other _____

⁶⁴ Conducted by FAO – provided by Dr. Michel Loots.

18. If so, in which language/s? **a.** English **b.** French **c.** Spanish **d.** Other : _____

19. Please indicate the types of information material you produce:

a. Research **b.** Educational **c.** Statistical **d.** Graphical **e.** Other : _____

20. What is the approximate total number of textual pages that your Organization could or would like to disseminate electronically to a wider audience if possible? _____

21. Do you produce material in other formats which you would be interested in sharing? **a.** Yes **b.** No

22. If so, in which format: **a.** Video **b.** Audio **c.** Photofiles **d.** Software **e.** Other _____

23. What channels do you currently use to distribute the information?

24. What channels do you use for promotion?



C. Evaluation of FAO WAICENT Module

WAICENT aims to make available all FAO information requested by your organization on low-cost CD-ROMs and local Internet servers. Help us to assess your needs by evaluating each of these CD-ROMS. *If you have access to a CD reader, please rate each of the CD s in the Module. Evaluation of each CD will take approximately ten to twenty minutes. A joint evaluation session with 2 or 3 colleagues is highly recommended.*

Thank you for your cooperation.

1. General evaluation : Summary

CD	1 = Not easy			2 = Moderately easy			3 = Very easy		
	FAOSTAT	FAO on Internet	Humanity Library	HTML Publishing	UNU Issues				
Ease of Installation	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>				
Ease of Use	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>				
Ease of Results	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>				

2. Detailed evaluation

Please rate using the following criteria: 1. Not 2. Very slightly 3. Moderately 4. Very 5. Best

CD 1: FAOSTAT Statistical Database 1998

25. Rate the usefulness of this information: 1 - 2 - 3 - 4 - 5 -

26. Rate importance of having a ranking feature: 1 - 2 - 3 - 4 - 5 -

27. Rate importance of having a graphics feature: 1 - 2 - 3 - 4 - 5 -

28. Rate importance of having a mapping feature: 1 - 2 - 3 - 4 - 5 -

29. Rate importance of having a non-English version: 1 - 2 - 3 - 4 - 5 -

30. Additions / improvements to this CD: _____

CD 2: FAO on the Internet September 1998

31. Rate the usefulness of this information: 1 - 2 - 3 - 4 - 5 -

32. Rate usefulness of having the FAO Web site on CD: 1 - 2 - 3 - 4 - 5 -

33. Additions / improvements to this CD: _____

CD 3: Humanity Development Library 2.0

34. Rate usefulness to your organization of having the information from this multidisciplinary library CD: 1 - 2 - 3 - 4 - 5 -
35. Would you be interested in more of this type of CD-ROM which combines publications from different fields and organizations? a. Yes b. No
36. Rate usefulness of including a general Development Library CD in the FAO WAICENT Module: 1 - 2 - 3 - 4 - 5 -
37. Can the same user interface and software be used for the specialized agriculture CD-ROMs? a. Yes b. No
38. Additions / improvements to this CD: _____

CD 4: HTML Publishing & Web Resources

39. Rate usefulness of this CD-ROM: 1 - 2 - 3 - 4 - 5 -
40. Would you be interested in more of this type of CD-ROM which combines software and shareware? a. Yes b. No
41. What other software / shareware should be added? _____
42. Additions / improvements to this CD: _____

CD 5: United Nations University Collection on Global Issues

43. Rate usefulness of this CD-ROM: 1 - 2 - 3 - 4 - 5 -
44. Should the FAO WAICENT module contain this CD? a. Yes b. No
45. Additions / improvements to this CD: _____

**D. Information Distribution**

46. Rate how making the FAO WAICENT Module available at large in your country, through CD-ROMs or Internet servers, would assist agriculture development: 1 - 2 - 3 - 4 - 5 -
47. Comments : _____

Rate each CD type according to its usefulness/ importance for mass distribution in your country:

a. Not b. Very slightly c. Moderately d. Very e. Extremely

48. **CD1 FAOSTAT** 1 - 2 - 3 - 4 - 5 -
49. **CD2 FAO Website** 1 - 2 - 3 - 4 - 5 -
50. **CD3 Humanity Library** 1 - 2 - 3 - 4 - 5 -
51. **CD4 HTML Publish** 1 - 2 - 3 - 4 - 5 -
52. **CD5 UNU** 1 - 2 - 3 - 4 - 5 -

53. Would you be willing to distribute the CDs through your network in your country? a. Yes b. No

54. If so, how many recipients / re-distributors could you reach ? _____

55. If so, through which distribution channels? a. Researchers b. Agricultural engineers/ workers
c. Industry d. Universities e. Government f. Media g. Others : _____

56. What is a fair contribution to you toward the cost of non-profit distribution of the CD?

a. Free b. US\$ 5 c. US\$ 10 d. US\$ 15

57. How would you distribute the information on the CD in your organization?

a. One CD in library b. One CD on network c. One CD per researcher d. One CD per PC

58. What other information could be included in the FAO WAICENT Module to make it more useful to you? _____

59. Would you be interested in having your material converted to similar electronic format as are the CD-ROMs in the FAO WAICENT Module? a. Yes b. No

60. If so, how would you produce it? a. individually b. jointly with partners c. with FAO as partner



E. Networking and Partnership

61. Would you hold workshops on FAO WAICENT information products **for your staff**? a. Yes b. No

62. Would you set up FAO WAICENT workshops to demonstrate the use of Internet, CD-ROM and FAO agricultural information to **your local or national community**? a. Yes b. No

63. Would you train local non-government organizations to be workshop organizers? a. Yes b. No

64. Type of assistance or capacity needed in organizing these workshops? _____

65. *As an information producer*, would you participate in an international consortium to digitize your printed material at low-cost for non-profit redistribution through consortia partners? a. Yes b. No

66. If you are familiar with an Organization interested in a consortia please supply a contact name and address: _____



F. Needs Assessments

At present, FAO has approximately 3 million pages of text dating back to 1980 to be digitized over the next 3- 4 years. It is possible to fit up to 300 000 pages of this information on one CD-ROM costing of a few US\$. It will soon be possible to fit up to 3 million pages on one or two DVD discs at a cost of 20 to 50 US\$. An example of this technology in use is the Humanity Development Library CD included in the WAICENT Module. By paying an annual subscription fee (US\$ 50 to 200 for Developing countries, and US\$ 500 - 1000 for Developed countries) consortia partners would receive this FAO material as it becomes available on CD-ROMs. With each subscription you will receive a number of CD-ROMs for free distribution. Requests for additional CD s will be at a cost of US\$ 5 each for Developing countries and US\$ 10 for Developed countries.

67. Would you pay a subscription fee to receive digitized FAO information? a. Yes b. No

Rate your Organization's need to have information in each of the specific agriculture areas

<i>FAO information on:</i>	<i>No. of pages</i>	<i>Need for your organization</i>		
68. Forestry (1980 - date)	265,936	<input type="checkbox"/> None	<input type="checkbox"/> Moderate	<input type="checkbox"/> Very
69. Fisheries and Aquaculture (1980 - date)	375,340	<input type="checkbox"/> None	<input type="checkbox"/> Moderate	<input type="checkbox"/> Very
70. Animal Science, Production & Protection	168,251	<input type="checkbox"/> None	<input type="checkbox"/> Moderate	<input type="checkbox"/> Very
71. Post-harvest Technology (1980 - date)	17,156	<input type="checkbox"/> None	<input type="checkbox"/> Moderate	<input type="checkbox"/> Very
72. Plant Science and Production	250,046	<input type="checkbox"/> None	<input type="checkbox"/> Moderate	<input type="checkbox"/> Very

73. Specify your needs regarding computer equipment and/or software? _____



G. Conclusion

74. Would you like to receive a summary of the results? **a.** Yes **b.** No
75. Will you partake in future surveys on FAO WAICENT information products? **a.** Yes **b.** No

FAO WAICENT thanks you for your cooperation.

Appendix B⁶⁵**FAO WAICENT - Agriculture Information Needs Survey****SURVEY SUMMARY**

SURVEY RESULTS AT A GLANCE

SURVEY CHARACTERISTICS

Intro.1 General concept and objectives

Intro.2 Analytical Methodology

A. RESPONDENT GENERAL INFORMATION***1. Organization Name and Department:***

as provided by respondent

3. Total employees in Organization or Department***4. How many computers are there in your organization?******11. If so, is the FAO web site information easily accessible?******13. Do you hold PC training courses for employees?*****B. INFORMATION ACCESS AND PRODUCTION*****14. Which type of agricultural information is mostly used within your organization?******16. If so, in which format?******19. Which types of information products do you produce?******21. Do you produce other types of information besides text which you would be interested in sharing?******Conclusion 21:******22. If so, of which type of additional information are you interested in sharing?******23. How do you distribute the information?******24. How do you promote your products?*****C. EVALUATION OF THE FAO CD COLLECTION**

CD1 FAOSTAT Statistical Database

Overall Assessment of CD1: FAOSTAT Statistical Database

CD2: FAO on the Internet - September 1998

CD3: Humanity Development Library 2.0

Overall Assessment of CD3: Humanity Development Library 2.0

CD4: HTML Publishing & Web Resources

CD5: United Nations University Collection on Global Issues

Overall Assessment of CD5: United Nations University Collection of Global Issues

Conclusion C: Evaluation of CD-ROMS

D. INFORMATION DISTRIBUTION***46. Rate how making the FAO CD Collection available at large in your country/organization, through CD-ROMs or Internet servers, would assist agriculture development.******47. Any comments on making this FAO collection widely available in your country?******53. Would you be willing to distribute the CDs through your network in your country/ organization?******54. If so, how many recipients/ re-distributors could you reach?******55. If so, who they are?***⁶⁵ Conducted by FAO – provided by Dr. Michel Loots.

56. What is a fair contribution to you toward the cost of non-profit distribution of the CD?

56.1 Overview

57. How would you distribute the information on the CD in your Organization?

59. Would you be interested in having your material converted to similar electronic format as are the CD-ROMs in the FAO CD Collection?

60. If so, how would you produce it?

E. NETWORKING AND PARTNERSHIP

61. Would you hold workshops on FAO information products for your staff?

62. Would you set up FAO workshops to demonstrate the use of Internet, CD-ROM and FAO agricultural information to your local or national community?

63. Would you train local organizations to be workshop organizers?

64. Indicate type of assistance or capacity needed in organizing these workshops.

65. As an information producer, would you participate in an international consortium to digitize your printed material at low-cost for non-profit redistribution through consortia partners?

66. If you are familiar with an organization interested in a consortia please supply a contact name and address:

F. NEEDS ASSESSMENT

67. Would you pay a subscription fee to receive digitized FAO information?

Conclusion 67:

68-83 Rate your organization's needs to have information in each of the specific agriculture fields.

G. FURTHER PARTICIPATION OF RESPONDENTS

84. Would you like to receive a summary of the survey results?

85. Will you partake in future surveys on FAO information products?

SURVEY RESULTS AT A GLANCE

SURVEY CHARACTERISTICS

- Of a total mailing of 363 surveys, 88 recipients responded, equalling a 24.2% response rate.
- The highest response rate of 59% came from Participants in Eastern Europe, while responses from all other geographic regions (Africa, Asia, Arabic countries, Latin and North America, Oceania, Western Europe) were in the range of 20%.
- Response by target group was highest for NGOs, approximately 40%. Other Respondent target groups are: AGRIS/CARIS Centres; Government and Regional Organizations; Agriculture cooperatives and Chambers of Commerce; Research Centres/Universities/Specialized Libraries.

A. RESPONDENT GENERAL INFORMATION

- 94% of Respondents indicate access to Windows-based Pentium PCs with Windows 95/98 used among 93% of them. 97% of Respondents reported access to at least one CD-ROM drive. 80% operate on a central server, while 20% necessitate stand-alone versions of software and databases.
- Results show that CD-ROMs constitute a highly appropriate means of information transfer among Respondents in both Developed and Developing Economies.
- Respondents with Internet access account for 87% of the total surveyed Respondent groups. 76% of these are located in Developing Economies. Data indicates that 87% of Respondents with access to Internet have visited the FAO Web site and that an average of 91% of Respondents in Developed and Developing Economies expressed satisfaction with web site accessibility.
- 70% of total Respondents hold training courses for their employees. Of these, 73% are located in Developing Economies.

B. INFORMATION ACCESS AND PRODUCTION

- A great majority, 82%, of the Respondents indicated predominant use of agricultural information in textual format, followed by information in bibliographic (65%) and statistical formats (54%).
- 92% of all Respondents produce information for dissemination purposes. All Government Organizations surveyed do so. The difference between Developing and Developed Economies in this respect is negligible.
- 91% of Respondents indicate production of information in print format. 74% of these are located in Developing Economies. 80% of Respondents produce information in HTML electronic format. All organizations producing SGML and PDF documents also produce HTML documents.

- Languages, in order of priority among Respondents, expressed in percentages, are as follows: 86, 25 and 27 for English, French and Spanish, respectively.
- 70% of Respondents indicate distributing information and databases in textual form; 25% produce statistical or graphical information.
- The approximate average number of pages that Respondents would like to distribute electronically is 1050, the great majority of which are produced by the NGO and Research/University/Library target groups.
- 25% of all survey Respondents have video, slides or photographs while an estimated 10% have software, audio or other media products to share.
- Percentages for distribution channels used among Respondents are as follows: 89, 56, 33, 33, and 8, through print, Internet, radio/TV, diskette, and CD-ROM respectively.
- Respondents promote their information products as follows, in percentages: 88, 30, and 50 for print, radio/TV, and Internet, respectively.

C. EVALUATION OF THE FAO CD COLLECTION

- The five CD-ROMs in the FAO CD Collection which was distributed for examination, received positive evaluation from all Respondents. FAOSTAT was rated as being the least user-friendly, and 54% of Respondents indicated a preference for the CDs to be available in language versions other than English.

D. INFORMATION DISTRIBUTION

- Respondents in Developing Economies rated that making the FAO WAICENT CD-ROM collection available at large would be 74% useful. In contrast, Respondents in Developed Economies gave a 42% usefulness rating. This leads to the conclusion that distribution of the WAICENT Collection to countries in Developing Economies must be a priority.
- Among Respondents from Developed Economies, only the FAOSTAT CD ROM was found to have sufficient support for mass distribution, while among those in Developing Economies, all CD-ROMs received support for distribution.
- 78% of all Respondent organizations, mostly from Developing Economies, indicated that they would be willing to distribute the CDs to users in and out of their organizations. 85% of these are Research organizations, Universities and Libraries. The number of recipients reached by each Respondent (excluding the top 13 organizations in order not to skew results) averaged to 71.
- Distribution potential: The Respondents to our survey could distribute approximately 3900 CD-ROMs, in total. By tapping the top 20 distributors, 80% (or 3 200 sets) of the

distribution potential can be reached. Thus by extrapolating the survey with 30 a total of 80 000 to 120 000 sets could be distributed

- 52% of all Respondents indicate that they would like the CD ROM set at no cost from FAO. 48% is willing to pay from 5 to 15 US\$ per CD set. A by country type analysis shows that over 50% of Respondents in Developing Economies want the collection for free. An average price for the CD-ROM set can be calculated at US\$ 7.5 for Developed Economies and US\$ 5.1 for Developing Economies.
- 65% of Respondents want to distribute one CD-ROM per user, 32% indicate a preference for installing the CD on their network, 41% would make the CD-ROM set available in the Organization information centre.
- 32% of responding organizations indicate a preference to install the CD on the Network. Question 8 indicates that in 80% of the responding organizations, partial or full networking is possible. The gathered data would indicate that about 40% of the organizations with a network would consider installing the FAO CD-ROM set on their networks, thereby making the FAO CD-ROM set available to all employees.
- 41% of Respondents would make the CD-ROM -set available in the organization's Information center.
- A majority of the Respondents seemed to indicated interest in the inclusion of specific subject matters on the CD ROM collection. Access to full-text, GIS and databases are the main requirements.
- Only 22% of Respondents from Developed Economies are interested in converting their textual material to electronic format as opposed to 79% from Developing Economies. On average, 73% of all Respondents are willing to convert to electronic format and from these the majority lies with the GO and Research/ University/ Library target groups.
- 45 of 61 Respondents, or 75%, is willing to undertake electronic conversion of printed matter as a joint effort. All Respondents from Developed Economies indicated willingness to enter into joint partnerships, as opposed to 75% of those from Developing Economies.

E. NETWORKING AND PARTNERSHIP

- 80% of the Governmental Organizations and Research Institutions, Universities, Libraries would hold workshops on FAO information products for their staff opposed to 45% for NGO and AGRIS/CARIS Centres.
- The interest in holding staff workshops on FAO information products among Respondents in Developing Economies is high: 70%, compared to 40% for those in Developed Economies.

- 85% of the Government Organizations and Research Institutions, Universities, Libraries would hold workshops on the use of Internet, CD-ROM and FAO products for their local or national community as opposed to 50% for NGO and 33% for AGRIS/CARIS Centres. The interest among Respondents in Developing Economies is very high: 77% compared to 30% among Respondents in Developed Economies.
- 58% of Respondents would train local organizations to be workshop organizers. The least interest in participating in local training activities was manifested by the AGRIS/CARIS Centre Respondents.
- 44 organizations require the following types of assistance in organizing workshops:
 - 23 require financial help,
 - 21 require help in training materials and methods
 - 23 require assistance with hardware
 - 96% of the Respondents requiring assistance are located in Developing Economies.
- 72% of all Respondents would participate in an international consortium to digitize their printed material at low-cost for non-profit redistribution through consortia partners. 86% of these are in Developed Economies.

F. NEEDS ASSESSMENT

- Cost recovery: 44% of total survey Respondents indicated willingness to pay a subscription fee for receiving FAOs digitized information on a collection of CD-ROMs. 58% of these Respondents are located in Developing Economies.
- The information needs of different organizations vary greatly as is expressed by their interest in diverse agriculture information subject areas. The need for information, identified using a weighted average calculation, ranges from 62% to 22% .
- Correlating average need with the willingness to pay a subscription fee for receiving FAO digitized information shows that Organizations who wish to subscribe have a higher average relative need score for all subjects areas (45%) as opposed to Organizations who do not wish to do so (38%).
- The greater the interest an organization has for certain agricultural information, the greater the willingness to pay for a subscription to electronically access this information.

G. FURTHER PARTICIPATION OF RESPONDENTS

- 93% of total Respondents would like to receive a survey results summary.
- Only 2 Respondents declined to participate in future FAO surveys.

INTRODUCTION

SURVEY CHARACTERISTICS

Intro.1 General concept and objectives

This FAO WAICENT survey is the first of its kind and has the following multiple objectives. To:

- obtain experience in conducting and analysing FAO WAICENT Surveys, and evaluate: the appropriateness of questions, survey effectiveness, response rate, sample size, and geographic and target group distribution;
- assess the information needs of each target group;
- evaluate the enclosed cd-rom products and software;
- estimate the perceived needs to a global level;
- estimate the demand for digitalisation of non-electronic FAO media including cost recovery through subscriptions, and prioritisation of subject matters.

Intro.2 Analytical Methodology

In order to simplify results analysis, the original ten target groups have been consolidated into four as follows:

No	New Target Group Name	Original Target Groups included	Survey sample size
1	AGRIS/CARIS	AGRIS, AGRIS LIASON, CARIS	39
2.	GO	Governmental Organizations and Regional Organizations MINISTRIES OF AGRICULTURE (National or Regional) and REGIONAL ORGANIZATIONS	49
3.	NGO	Chambers of Commerce for Agriculture, Co-Operatives, NGO - Agriculture	51
4.	RESEARCH/ UNIV/ SPEC LIBRARIES	Research Institutions Agriculture, Specialized Libraries Agriculture, University Departments of Agriculture	224
	TOTAL		363

Respondents are categorised by Country Type as follows: Developed and Developing Economies.

- “Developed Economies” include Western Europe, Australia, New Zealand, North America and Japan
- “Developing Economies” include: Africa; Asia; Latin America; Eastern Europe, Oceania (excluding New Zealand and Australia)

The term "Developing Economy" is not to be considered official FAO nomenclature. It is being used in this study simply to distinguish between the needs of industrialized countries and other economies .

The number of survey responses from separate organizations received at the time of this writing was 88, representing a response rate of 24,5%.

Intro.3 Response Rate by Geography and Target Group

The average response rate is 24.5 %. Eliminating Eastern Europe, the response rate for the rest of the world is 20%, evenly distributed over all geographic continents. The 20 responses received from Eastern Europe constitute a considerably high response rate of 59%.

Intro.4 Response rate by Target Group

Response by target group is highest for NGOs with a reply rate greater than 40%.

A. RESPONDENT GENERAL INFORMATION

1. Organization Name and Department:

as provided by respondent

2. Respondent Name, Titles and e-mail addresses :

as provided by respondent

3. Total employees in Organization or Department

Conclusion 3:

Approximately 40% of the Respondents indicate that there are over 100 employees in their organization. This figure may possibly include students although this is not clear from the replies. When extrapolating to a global figure, weighted averages will have to be used to take the NGO and cooperative target groups into account. The 88 Respondents total 5000 employees amounting to an average of 55 employees per organization

4. How many computers are there in your organization?

Conclusion 4:

16% of the Respondents has between 1 and 5 computers
 29% of the Respondents has between 6 to and 20 computers
 18% of the Respondents has between 21 to and 50 computers
 38% of the Respondents has over 50 computers

The average number of computers per organization is 30

Results indicate that there is an even distribution in the number of PCs within the NGO Respondent group. Other Respondent groups tend to have a greater number of computers per organization.

5. Which type of computers are used in your organization?

Of the 85 organizations responding to this question, only 5, of which the majority located in Africa, indicated to having only 386 or 486 PC's. The remaining 80 organizations indicated having all or some of their computers with a PENTIUM processor.

Conclusion 5:

94% of the Respondents have access to powerful Windows-based PENTIUM PCs.

6. Which system software is used?

Conclusion 6.

Windows 95/98 is the most frequently installed : 93 % of Respondents, many of which also have Win 3.x.

3.5% of Respondents have only Win 3.x

It can be stated that Windows 3.x/95/98 make up 96.5% of all Windows-based operating systems. All organizations operating on Apple computers also have Windows 95/ 98 and /or NT computers. Only one Respondent indicated running only the Apple Operating System. The data indicates, therefore, that only a small percentage of total time and resource should be invested in the design of Apple-compatible CD-ROM products.

7. How many CD-Readers are there in your Organization?

No. of CD ROM Drives Available				
None	1 - 5	21-51	21-50	Total
2	29	25	32	87

Only two organizations reported not having CD-ROM drives: one located in the Democratic Republic of Congo and the other in Malawi. In all other cases the data indicates widespread availability of CD-ROM drives.

Conclusion 7

Results show that CD-ROMs constitute a highly appropriate means of information transfer among Respondents in both Developed and Developing Economies.

8. Are the computers linked to a server?

Conclusion 8:

Approximately 50% of Respondents indicate that *all* computers in their Organization are server/ network-linked, while 30% of the Respondents replied that only *some* are linked. Only in about 1/5 of the cases are the Respondent computers not connected to internal servers.

The data indicates that in 80% of the Respondent organizations, distribution and availability of information is possible through a central server thus necessitating only or a few copies of database data and CD-ROMS.

The software will have to accommodate server-based information dissemination. In 20% of the Respondent organizations central access to one server is not possible, hence the applied software and databases must be stand-alone.

9. Does your Organization have Internet access?

Respondent Target group	Internet Access Status			
	NO	YES	%YES	Total
AC	2	7	78%	9
GO	0	8	100%	8
NGO	3	18	86%	21
Research/ UNV/ Libraries	5	42	89%	47
Total Respondents	10	75	88%	85
Percent of Total Respondents	12%	88%	88%	

The 10 Respondents out of a total of 85 without Internet access are situated in countries with Developing Economies: Cote d'ivoire, Guinea, Gabon, Kenya, Botswana, Cuba, Cuba, Myanmar, Madagascar, Ghana. They represent a mere 12% of the total target group surveyed.

Conclusion 9

Organizations with Internet access constitute 88% of the total Respondent target group. Respondents in the least developed African countries lack access to Internet. Comments on question 12 however suggest that many existing Internet connections are slow.

10. If you have Internet access, have you visited the FAO web site?

Conclusion 10:

The data indicates that 87% of all Respondents with access to Internet have visited the FAO website. This rate is the same for Respondents in Developed and Developing Economies. The FAO is well known and visited.

11. If so, is the FAO web site information easily accessible?

Conclusion 11:

92% of total Respondents expressed satisfaction with FAO web site accessibility while 100% of NGO Respondents indicated easy accessibility to the site. Data indicates that there is very slight difference in accessibility satisfaction between Respondents in Developed and Developing Economies: 89 and 93%, respectively.

12. Ideas / suggestions to help the FAO web site meet your online agriculture information needs

19 Respondents provided the following comments:

1	- Reduce number of sophisticated graphics that slowdown downloading time; - MSword is more popular than wp; alternatively use plain text file.
2	Provide more free publications accessible to developing countries
3	Cannot say because I have not tried yet
4	Need to train personnel in Computer and database usage
5	By-country break up of trade data should be included. At present I can get e.g. how much rice India exported in a particular year but I can't get to which countries the exports went to.
6	The WAICENT Programme is of great help
7	Total absence of equipment makes responding to this survey difficult
8	More data/information about organic agriculture is needed
9	Do not overload pages with too many graphics
10	On-line data bases
11	On line data update system is needed in my organization
12	Please help us to get on-line
13	When selecting a country, its products should automatically be displayed
14	Takes time to access
15	Access time is slow
16	The FAO web site is a bit slow
17	We seriously need to have Internet access
18	The FAO partner link list would be very useful
19	Make Internet access available

13. Do you hold PC training courses for employees?

Conclusion 13

The data indicates that 70% of total Respondents hold PC training courses for their employees. 74% of Respondents located in Developing Economies hold training courses compared to 38% in Developed Economies. The Government organization (GO) target group is the most actively involved in training activities.

B. INFORMATION ACCESS AND PRODUCTION

14. Which type of agricultural information is mostly used within your organization?

	Bibliographic	Textual	Statistical	Total
Replies	58	73	48	179
Percent of Total Replies	65%	82%	54%	

Conclusion 14:

A great majority, 82%, of the Respondents indicated predominant use of agricultural information in textual format, followed by information in bibliographic (65%) and statistical formats (54%).

15. Does your Organization produce information for dissemination?

Conclusion 15

The data indicates that 92% of all Respondents produce information for dissemination purposes while *all* GO Respondents do so. The percentage difference between Respondents from Developed and Developing Economies who produce information for dissemination is negligible.

16. If so, in which format?

Conclusion 16

The majority (91%) of Respondents indicate production of information in print format for dissemination purposes. The second most used format is electronic with 49%.

17. If electronic, in which format is it available?

	Electronic Format Available				
	HTML	RTF + MSWORD + TXT	PDF	SGML	OTHER
Total Replies	44	22	10	10	10
Percent of Total Respondents	80%	40%	18%	18%	21%

All organizations producing SGML and PDF documents also produce HTML documents

Conclusion 17:

80% of the 55 Respondents to this question indicate that the electronic format mostly used is HTML. 40% use word/rtf or txt formats. Only 18% use PDF.

18. If so, in which language/s?

Conclusion 18:

The following percentage of total Respondents indicated the respective priority languages: English 86%, French 25%, and Spanish 27%.

19. Which types of information products do you produce?

Conclusion 19:

70% of the Respondents distribute information and databases in textual form. One can conclude that by providing common standards for text and databases and a method by which to package this information, it could be made available on a worldwide basis.

25% of the Respondents produce statistical or graphical information.

20. What is the approximate total number of textual pages that your Organization or Department could or would like to disseminate electronically to a wider audience if possible?

40 Respondents replied to this question, totalling 240 000 pages, broken down as follows: three organizations (from India, Hungary and one Agris center in the Dominican Republic) accounting for 200 000 pages; 12 organizations accounting for 35 000 pages; and 25 organizations accounting for 5 000 pages.

To obtain representative data it is recommended that the first three Respondent organizations which account for 83% of total pages not be taken into consideration until details regarding language and type of information is available. Thus 39 000 pages among 37 Respondents, or 1050 pages each, can be considered statistically significant data.

34 of the 37 Respondent organizations, or 92%, are from Developing Economies.

The great majority of pages for dissemination are produced by NGO and Research/ University/ Library centres

Respondent Group	Respondents	Number of pages
AC	2	500
GO	5	4 230
NGO	12	10 500
Research/ UNV/ Libraries	18	24 000
TOTALS CONSIDERED (TOTALS RECEIVED)	37	39 400

Conclusion 20:

The number of pages produced by the 40 Respondents to this question was 240 000. 200 000 were attributed to three organizations and it is not sure these organizations meant

pages that were also useful to digitize and distribute, Therefore it is safer to assume that a minimum of 40 000 pages of textual information is available for dissemination to a wider audience.

21. Do you produce other types of information besides text which you would be interested in sharing?

Conclusion 21:

57% of the Respondents indicated having other types of information available for sharing.

22. If so, of which type of additional information are you interested in sharing?

Additional Types of Information for Sharing	Replies	Percent of Respondents to this question	Percent of Total Respondents to the survey
Video	28	58 %	28 %
Audio	11	23 %	11 %
Photos	22	46 %	22 %
Software	9	19 %	9 %
Slides	24	50 %	24 %
Other	15	31 %	15 %

Conclusion 22:

Approximately 22 or 25% of all survey Respondents have video, slides or photographs while an estimated 8 or 10% have software, audio or other media products to share. Thus, by conservatively extrapolating by 30, on a global scale, between 240 to 600 organizations will share slides, videos audiotapes etc. Hence, WAICENT could consider producing a series of video, audio etc, compilations.

23. How do you distribute the information?

DISTRIBUTION METHOD	Multiple Replies	Percent of Total Respondents
Print	76	89%
CD-ROM	7	8%
Internet	48	56%
Diskette	27	32%
Radio/ TV	28	33%

Conclusion 23:

85 Respondents replied, the majority, or 89%, distributes information through print, 56% through Internet, 33% through Radio and TV, and 33% by means of diskette. Only 8% of the Respondents distribute their information on CD-ROMS, and they are located in: Cuba, Romania, Russia, Ethiopia, Brazil, Philippines, Costa Rica.

24. How do you promote your products?

PROMOTION CHANNELS	Replies	Percent of Total Respondents
Print	69	88%
Advertising	30	38%
Radio/ TV	24	31%
Internet	36	46%
Other	8	10%

The countries who most use Radio/TV as promotion channels are : India, Kenya; Dominican Republic; Romania; Ghana; Costa Rica; Jamaica; Cuba ; Guinea ; Czech Republic.

The Internet is used as a promotional channel in 50% of the cases.

Conclusion 24:

78 Respondents indicated the methods used to promote their publications. 88% promotes information through print media, 30% through Radio and TV and 50% through. The countries who use Radio/TV media the most are: India, Kenya, Dominican Republic, Romania, Ghana, Costa Rica, Jamaica, Cuba, Guinea, Czech Republic.

C. EVALUATION OF THE FAO CD COLLECTION

	CD 1 : FAOSTAT	CD 2 : FAO Internet	CD 3 : HDL	CD 4 : HTML	CD 5 :UNU
Installation	69%	79%	75%	78%	76%
Use	62%	77%	69%	73%	69%
Results	60%	72%	68%	69%	71%
AVERAGE	63%	76%	71%	73%	75%

Detailed Evaluation:

CD1 FAOSTAT Statistical Database (questions 25-29)

Overall Assessment of CD1: FAOSTAT Statistical Database

63% of total Respondents considered this CD-ROM to be user-friendly;

68% of Respondents from Developed Economies as opposed to 79% of Respondents from Developing Economies considered its information useful;

64% of Respondents from Developed Economies as opposed to 72% of Respondents from Developing Economies considered the addition of a ranking feature to be useful;

66% of Respondents from Developed Economies as opposed to 75% of Respondents from Developing Economies considered the addition of a graphics feature to be useful;

64% of Respondents from Developed Economies as opposed to 72% of Respondents from Developing Economies considered the addition of a mapping feature to be useful;

CD2: FAO on the Internet - September 1998
(questions 30-32)

Overall Assessment of CD2: FAO ON THE INTERNET

76% of total Respondents considered this CD-ROM to be user-friendly;

82% of Respondents from Developed Economies as opposed to 84% of Respondents from Developing Economies considered its information useful;

77% of Respondents from Developed Economies as opposed to 86% of Respondents from Developing Economies considered having the FAO Web site on a CD-ROM to be useful.

CD3: Humanity Development Library 2.0
(questions 33-37)

Overall Assessment of CD3: Humanity Development Library 2.0

71% of total Respondents considered this CD-ROM to be user-friendly;

77% of Respondents from Developing Economies and 59% of Respondents from Developed Economies considered its multidisciplinary information useful to their Organization;

81% of Respondents from Developing Economies and 66% of Respondents from Developed Economies Respondents considered the inclusion of this CD-ROM in the FAO CD Collection to be useful;

92% of Respondents from Developing Economies and 100% of Respondents from Developed Economies Respondents would be interested in more of this type of CD-ROM

97% of Respondents from Developing Economies and 91% of Respondents from Developed Respondents indicated that the same user interface and software could be used for specialized agriculture CD-ROMs.

CD4: HTML Publishing & Web Resources
(questions 38-41)

Overall Assessment of CD4: HTML Publishing and Web Resources

73% of total Respondents considered this CD-ROM to be user-friendly;

68% of Respondents from Developed Economies as opposed to 79% of Respondents from Developing Economies considered its information useful;

82% of the total, and 100% of GO Respondents indicated interest in this type of CD that combines software and shareware.

CD5: United Nations University Collection on Global Issues
(questions 42-45)

Overall Assessment of CD5: United Nations University Collection of Global Issues

75% of total Respondents considered this CD-ROM to be user-friendly;

60% of Respondents from Developed Economies as opposed to 75% of Respondents from Developing Economies considered its information useful;

95% of the total Respondents indicated that the FAO CD-ROM Collection should include this CD.

45. Indicate which CD-ROM you would like to have a non-English version of:

Conclusion 45:

There is strong demand for CD-ROMS in major languages other than English: French and Spanish. There is also fair demand for CD-ROMS in local languages, at least applied to the User-interface. Information products targetted to Latin American and French-speaking African countries should be delivered in the national language version.

Conclusion C: Evaluation of CD-ROMS

Overall, the CD-ROMs included in the FAO CD ROM Collection received a high evaluation, from Respondents in both Developing and Developed Economies.

D. INFORMATION DISTRIBUTION

46. Rate how making the FAO CD Collection available at large in your country/organization, through CD-ROMs or Internet servers, would assist agriculture development.

Conclusion 46:

Respondents in Developing Economies rated that making the FAO WAICENT CD-ROM collection available at large would be 74% useful. In contrast, Respondents in Developed Economies gave a 42% usefulness rating. This leads to the conclusion that distribution of the WAICENT Collection to countries in Developing Economies must be a priority.

47. Any comments on making this FAO collection widely available in your country?

19 Respondents provided comments. These individual assessments will not be used for extrapolation purposes.

48-52. Usefulness / Importance for mass distribution in your country / organization for each of the 5 CD's

Conclusions 48 – 52:

For the Respondents from Developing Economies, all CD-ROMS received sufficient support for mass distribution.

Among Respondents from Developed Economies only one CD was found to have sufficient support for mass distribution: FAOSTAT Statistical Database.

53. Would you be willing to distribute the CDs through your network in your country/ organization?

Conclusion 53:

78% of all Respondent organizations, mostly from Developing Economies, indicated that they would be willing to distribute the CDs to users in and out of their organizations. 85% of Research organizations, Universities and Libraries.

54. If so, how many recipients/ re-distributors could you reach?

Conclusion 54:

The top 13 organizations can distribute 238 CD-ROM sets per organization at an average price of US\$4.7 per set. The remaining 41 organizations can each distribute about 20. By focusing on the top 20 distributors, 80% of the SURVEY TARGET MARKET distribution potential can be tapped., but by extrapolation, we can also deduce focusing on the top 25 % main resellers, will cover 80% of redistribution sales.

55. If so, who they are?

	AC	GO	NGO	Univ/ Libraries/ Research	Total
Research Institutes/ Univ	7	4	12	33	56
Libraries	5	4	7	36	52
Government	3	5	7	12	27
NGO	2	3	9	17	31
Private Sector	-	1	9	6	16
Media	-	-	4	7	11
Agriculture Sector	5	3	10	20	38
Others	-	0	3	2	5
<i>Number Respondents</i>	<i>8</i>	<i>6</i>	<i>15</i>	<i>39</i>	<i>68</i>

Conclusion 55:

This information is helpful in determining which specific end user each target group can best reach. For example NGOs seem to be the best channel to reach the private sector.

56. What is a fair contribution to you toward the cost of non-profit distribution of the CD?**Overview**

What is a fair contribution to you toward the cost of non-profit distribution of the CD?	Free	US\$ 5	US\$ 10	US\$ 15	Sum
AC	4		3	1	8
GO	3	1	1	1	6
NGO	5	3	3	2	13
Research/ UNV/ Libraries	20	2	6	7	35
Total Respondents	32	6	13	11	62
Percent Total Respondents	52%	10%	21%	18%	

View by Country Type

What is a fair contribution to you toward the cost of non-profit distribution of the CD? (in absolute numbers)	Free	US\$ 5	US\$ 10	US\$ 15	Sum
Developed Economies	1	1	1	1	4
Developing Economies	31	5	12	10	58
Total Respondents	32	6	13	11	62
Percent of Total Respondents	52	10	21	18	

What is a fair contribution to you toward the cost of non-profit distribution of the CD? (IN % for specific Country type)	Free	US\$ 5	US\$ 10	US\$ 15
Developed Economies	25%	25%	25%	25%
Average pricing for Developed Economies	US\$ 7.50			
Developing Economies	53%	9%	21%	17%
Average pricing Developing Economies	US\$ 5.10			

Conclusion 56:

50% of all Respondents indicate that they would like the CD ROM set at no cost from FAO.

48% is willing to pay from 5 to 15 US\$ per CD set.

A by country type analysis shows that over 50% of Respondents in Developing Economies want the collection for free.

An average price for the CD-ROM set can be calculated at US\$ 7.5 for Developed Economies and US\$ 5.1 for Developing Economies.

57. How would you distribute the information on the CD in your Organization?**Conclusion 57:**

65% of the Respondents want to distribute one CD per user. Question 7 indicates that there are about 1500 cd-drives for 6500 employees from all responding organizations. The data gathered shows that approximately 900 PCs with CD-Drives could be loaded with the FAO Collection of CD-ROM amongst the Respondents.

32% of responding organizations indicate a preference to install the CD on the Network. Question 8 indicates that in 80% of the responding organizations, partial or full networking is possible. The gathered data would indicate that about 40% of the organizations with a network would consider installing the FAO CD-ROM set on their networks, thereby making the FAO CD-ROM set available to all employees.

41% of Respondents would make the CD-ROM -set available in the organization's Information center.

58. What other information could be included in the FAO CD Collection to make it more useful to you?**Conclusion 58:**

A majority of the Respondents seemed to indicated interest in the inclusion of specific subject matters on the CD ROM collection. Access to full-text, GIS and databases are the main requirements.

59. Would you be interested in having your material converted to similar electronic format as are the CD-ROMs in the FAO CD Collection?

Conclusion 59:

Only 22% of Respondents from Developed Economies are interested in converting their textual material to electronic format as opposed to 79% of those from Developing Economies.

60. If so, how would you produce it?

Conclusion 60:

61, or 70% of total Respondents, replied to this question. Of these, 75% is willing to undergo electronic conversion as a joint effort. Responses from all target groups for joint collaboration were evenly distributed. When examining target groups by Country type, all Respondents from Developed Economies indicated willingness to joint partnerships, as opposed to 75% of those from Developing Economies.

E. NETWORKING AND PARTNERSHIP

61. Would you hold workshops on FAO information products for your staff?

Conclusion 61:

80% of the Governmental Organizations and Research Institutions, Universities, Libraries would hold workshops on FAO information products for their staff opposed to 45% for NGO and AGRIS/CARIS Centres. The willingness to hold workshops is probably not dependent on size of the organization, as organizations with 1 to 20 employees indicate interest in also holding workshops. The interest among Respondents in Developing Economies is high: 70% , compared to 40% for those in Developed Economies.

62. Would you set up FAO workshops to demonstrate the use of Internet, CD-ROM and FAO agricultural information to your local or national community?

Conclusion 62:

85% of the Government Organizations and Research Institutions, Universities, Libraries would hold workshops on the use of Internet, CD-ROM and FAO products for their staff as opposed to 50% for NGO and 33% for AGRIS/CARIS Centres. The willingness to hold workshops is probably not dependent on size of the organization, as organizations with 1 to 20 employees indicated willingness to hold workshops also. The interest among Respondents in Developing Economies is very high: 77%, compared to 30% among those in Developed Economies.

63. *Would you train local organizations to be workshop organizers?*

Conclusion 63:

58% of Respondents would train local organizations to be workshop organizers. The least interest in holding local training was shown from the AGRIS/CARIS Centre Respondents.

64. *Indicate type of assistance or capacity needed in organizing these workshops.*

Conclusion 64:

44 organizations require the following types of assistance in organizing workshops:

- 23 require financial help,
- 21 require help in training materials and methods
- 23 require assistance with hardware

96% of the Respondents requiring assistance are located in Developing Economies.

65. *As an information producer, would you participate in an international consortium to digitize your printed material at low-cost for non-profit redistribution through consortia partners?*

Conclusion 65:

72% of all Respondents would participate in an international consortium to digitize their printed material at low-cost for non-profit redistribution through consortia partners. 86% of these are located in Developed Economies.

66. *If you are familiar with an organization interested in a consortia please supply a contact name and address:*

Names of 15 organizations were provided.

F. NEEDS ASSESSMENT

67. *Would you pay a subscription fee to receive digitized FAO information?*

Conclusion 67:

54% of the Respondents to this question, or 44% of total survey Respondents indicated a willingness to pay for a subscription to the 2.5 million FAO information pages placed on a series of CD-ROMS. A by country type breakdown indicates that 58% of the Respondents in Developing Economies are willing to pay for a subscription.

68-83 Rate your organization's needs to have information in each of the specific agriculture fields.

FAO Information Subject Area	None =0%	Moderate = 50%	High = 100%	Number of Respondents	Average relative need %	% Average Need among Respondents
68. Forestry	8	31	38	86	54%	52%
69. Fisheries and Aquaculture	11	33	33	77	50%	43%
70. Animal Science, Prod & Protection	6	24	48	78	60%	53%
71. Post-harvest Technology	5	24	42	71	54%	43%
72. Plant Science and Production	5	24	48	77	60%	52%
73. Geography and History	25	35	10	70	28%	22%
74. Education, Extension and Information	6	26	44	76	57%	49%
75. Administration & Sociology	12	21	41	74	52%	43%
76. Economics, Dev. & Rural Sociology	5	21	54	80	65%	58%
77. Plant Protection	6	18	51	75	60%	51%
78. Agricultural Machinery & Engineering	7	29	39	75	54%	45%
79. Natural Resources & Environment	2	14	65	81	72%	66%
80. Processing of Agricultural Products	2	22	53	77	64%	55%
81. Human Nutrition	8	33	34	75	51%	43%
82. Pollution	7	25	46	78	59%	51%
83. Methodology	5	36	34	75	52%	44%

Below is a ranking of average need sorted by number of pages of information available for that subject matter.

FAO Information Subject Area	% Average Need amongst all Respondents	Rank	Number of Pages
79. Natural Resources and Environment	66%	1	265 000
76. Economics, Dev. and Rural Sociology	58%	2	375 000
80. Processing of Agricultural Products	55%	3	170 000
70. Animal Science, Production & Protection	53%	4	17 000
72. Plant Science and Production	52%	5	250 000
68. Forestry	52%	6	1 000
82. Pollution	51%	7	150 000
77. Plant Protection	51%	8	60 000
74. Education, Extension and Information	49%	9	450 000
78. Agricultural Machinery and Engineering	45%	10	90 000
83. Methodology	44%	11	50 000
71. Post-harvest Technology	43%	12	220 000
69. Fisheries and Aquaculture	43%	13	18 000
75. Administration and Sociology	43%	14	80 000
81. Human Nutrition	43%	15	30 000
73. Geography and History	22%	16	45 000

Conclusions 68-83:

The information needs of different organizations vary greatly as is expressed by their interest in diverse agriculture information subject areas. The need for information, identified using a weighted average calculation, ranges from 62% to 22% .

Correlating average need with the willingness to pay a subscription fee for receiving FAO digitized information shows that Organizations who wish to subscribe have a higher average relative need score for all subjects areas (45%) as opposed to Organizations who do not wish to do so (38%).

The greater the interest an organization has for certain agricultural information, the greater its willingness to pay for a subscription to electronically access this information.

G. FURTHER PARTICIPATION OF RESPONDENTS

84. Would you like to receive a summary of the survey results?

Conclusion 84:

93% of the 94 total Respondents, or 87 Respondents, would like to receive a summary of the survey results.

85. Will you partake in future surveys on FAO information products?

Conclusion 85:

98% of a total of 93 Respondents, or 91 Organizations, indicated interest in participating in future FAO studies. Only 2 Respondents declined to participate.