

## EXPANSION OF TECHNOLOGICAL CAPABILITIES IN POOR COMMUNITIES

(HO-0203)

### EXECUTIVE SUMMARY

<b>Borrower:</b>	Republic of Honduras	
<b>Executing agency:</b>	Consejo Hondureño de Ciencia y Tecnología [Honduras Science and Technology Council] (COHCIT)	
<b>Amount and source:</b>	IDB (FSO):	US\$8.5 million
	Borrower:	US\$1.0 million
	Total:	US\$9.5 million
<b>Terms and conditions:</b>	Amortization period:	40 years
	Grace period:	10 years
	Disbursement period:	30 months (plus 6 months to finance the project audit)
	Interest rate:	1% for the first 10 years and 2% thereafter
	Inspection and supervision:	1% of the amount of the loan
	Credit fee:	0.5% annually on the undisbursed balance
<b>Objectives:</b>	<p>The goal of the project is to help reduce causes of poverty related to the disadvantages of isolation and unequal opportunity. The purpose is to open up opportunities for educational and market knowledge services to members of isolated communities.</p> <p>The specific objectives are: (i) to confirm the technical viability and cost-effectiveness of a model for delivering a set of technological tools to provide educational and market-knowledge services in a sample of communities; and (ii) to provide institutional strengthening for COHCIT to accomplish its mission of coordinating technological exchanges that seek to promote the development of poor communities.</p> <p>Based on important lessons learned in the use of new communications and information technology to support the development of poor Honduran communities, COHCIT plans to test a model for providing</p>	

education and information services in a representative sample of communities, using technological tools. This initiative presupposes that cost-effectiveness, efficiencies, and positive externalities will be achieved that are superior to traditional methods of delivering educational and market-knowledge and information services. This approach is an attempt to incorporate into the economy communities that have been excluded largely because of their isolation and the high cost of providing services to them previously.

**Description:**

The project consists of three components:

**1. Component 1. Financing of technologies that facilitate educational and market-knowledge services (US\$5.93 million)**

The objective of this component is to finance subprojects that include a technology package that provides opportunities to access educational services and knowledge services for market participation. The technology package included in each approved subproject will be located at a community communications and information center. Representatives of the community requesting each respective subproject will be responsible for center management.

The “technology package” is a set of nontraditional computer and electronic technological tools to provide educational, information, and telecommunications services to the general and student population, as well as technical assistance for community microenterprises. Sources of renewable energy may be financed as part of each subproject. The size and content of each package will depend on the size and interests of the beneficiary community and its capacity to make effective and sustainable use of these technologies.

**2. Component 2. Institutional strengthening (US\$1.28 million)**

The objective of this component is to strengthen COHCIT’s capacity to coordinate a jump-start of technological change in eligible communities, and its capacity to lead, promote, coordinate, and manage actions that lead to a flexible transfer of technology. An inter-institutional coordinating committee will be set up to advise COHCIT and to disseminate the lessons learned.

**3. Component 3. Monitoring, Evaluation, and External Auditing (US\$260,000)**

The objective is to verify project compliance with the agreed goals and targets and to ensure that the project is implemented in compliance with Bank regulations. Consultants and hardware will be contracted to provide continuous monitoring, to gather information

documenting the lessons learned, and to warn of significant divergences from expected indicators. The external auditing required for the project will also be contracted.

**Rationale for an innovation and learning loan:**

This project qualifies as an innovation loan because:

1. **Various institutions are learning a new approach to providing services.** The project will test a model for meeting community demand for educational and market-knowledge services involving coordination among various institutions to deliver a technology package that provides those services.
2. **Flexibility is being introduced into the design.** The tests that the project will conduct on supplying educational models, communication, energy inputs, and research allow for feedback. The models will be adjusted, yielding stronger approaches to cooperation between the communities and the content providers.
3. **The path to greater investment is being smoothed.** This trial in a representative sample of communities will produce sufficient evidence to justify or reject more extensive investment to replicate the model.

**Relationship of the project with the Bank's sector and country strategy:**

The Bank's strategy supports implementation of the Poverty Reduction Strategy, as well as the Master Plan for National Reconstruction and Transformation of which it is part. This project directly addresses various priorities of the poverty reduction strategy. Specifically, the project promotes human development by introducing technologies that function as essential tools to achieve the goal. Therefore, the project fits within the poverty reduction strategy framework and is consistent with the Eighth Replenishment.

**Environmental and social review:**

The Operating Regulations include specific criteria to ensure that subprojects will not have negative environmental impacts. The related education services will contribute to sustainable natural resource management, while the introduction of small-scale renewable energy systems will support an increase in less polluting sources of energy. As for social impacts, the two pilot centers in San Ramón and San Francisco (see Chapter I, Background) have generated considerable interest in the communities regarding community development activities. These pilot locations have become satellite centers where citizens from other small towns meet to use the available technologies and services.

**Benefits:**

- . The expected benefits relate to the creation of vital opportunities. Experiences in other countries and observations of related activities in

Honduras point to opportunities for personal improvement that will come about as a result of cost savings, environmental preservation, externalities, and synergies with other activities in process. The following savings and benefits are noteworthy in this respect.

First, the project will make national formal education programs accessible. Moreover, possibilities will be created for using alternative methods to train teachers and add to the quality of national curricula, which may result in savings.

Second, in general, telecommunications offer considerable savings for individuals in isolated communities by replacing more costly traditional means, such as postal service. As opportunities to obtain and/or process information and gain new knowledge expand, opportunities for a higher income and prospects for a significantly higher standard of living are also increased.

A telephone network could also be leveraged to provide a series of additional applications via Internet. In terms of facilitating synergies and complementarity, the project will promote other efforts in education, health, agriculture, and sustainable development now in progress.

**Risks:**

The risks that communities will not react with the expected eagerness and an insufficient number of subprojects will be requested, or that the requesting communities will be so widely scattered as to impact the necessary “network effect”, are truly low. In recent months, the demonstration effect of the centers in San Ramón and San Francisco has persuaded many other communities to request similar projects. These positive reactions will now be accompanied by a concerted, targeted social-promotion and marketing effort financed by the project. Therefore no difficulty is expected in terms of attracting a sufficient number of requests and applications from communities (over 100).

The change in government in 2002 raises some uncertainty with regard to the priority that the new government will place on the project. However, a consensus exists among the institutions that will form the interinstitutional coordinating committee, and the issue has been addressed in political dialogues by various parties, and has been accepted by the Church. Therefore, no special actions are deemed necessary to mitigate this potential risk.

**Special contractual conditions:**

**Special conditions precedent to the first disbursement of the loan:**

Prior to the first disbursement, the borrower will present evidence to the Bank that: (i) the project coordinator has joined the COHCIT

Office of Cooperation and the minimum equipment necessary for project management has been procured (paragraph 3.2); (ii) the interinstitutional coordinating committee has been formed as provided in paragraph 3.6; (iii) the parties have agreed on coordination duties for project implementation (paragraph 3.7); and (iv) the interinstitutional coordinating committee has approved the Operating Regulations (paragraph 3.7).

These provisions notwithstanding, the equivalent of up to US\$200,000 may be disbursed to hire the project coordinator and procure the equipment necessary for project management once the preconditions established in the General Conditions of the loan contract have been met.

**Poverty-targeting and social sector classification:**

This operation qualifies as a social-equity targeted project, as described among the key objectives for Bank activities set forth in the report on the Eighth Replenishment (document AB-1704). This operation also qualifies as a poverty-targeted initiative) pursuant to the geographical classification criterion (paragraph 3.13).

**Exceptions to Bank policy:**

See Procurement section below.

**Procurement:**

As an exception to the competitive bidding process required for the selection of consultants, it is recommended that Digital Nations be contracted directly owing to its comparative technical advantages, as discussed in paragraphs 3.21 and 3.22. Accordingly, the hiring of Digital Nations complies with the provisions of Chapter 403 of the Procurement Manual.

The procurement of goods and related services and contracting of consulting services will comply with the policies and procedures of the Bank. The project does not include construction contracting. The thresholds above which international competitive bidding will be used in the project are: (i) US\$250,000 for the procurement of goods and related services, and (ii) US\$200,000 for consulting contracts.

## **I. BACKGROUND**

### **A. Access to technological tools facilitates the delivery of social services**

- 1.1 Traditional methods of delivering social services in isolated communities in Honduras are very expensive owing to the distances involved. In terms of education, for example, the resources needed to finance school infrastructure investment and operation costs, the shipping of educational materials, and minimum facilities for teachers such as accommodations and on-site training among other things are always inadequate, and constitute a high opportunity cost for students.
- 1.2 The high cost and low effectiveness of traditional service-delivery systems discourage social investments in these communities. Consequently, education coverage is low in such communities. For example, 61% of the student-age population in the department of Francisco Morazán, which includes Tegucigalpa, was enrolled in 1998, while in rural areas enrollment rates drop to 37% in Lempira, 34% in Paraíso, and 30% in Copán—provinces that also have the highest poverty indices. Access is particularly difficult for middle-school and secondary education. Only 30% of students in urban areas make the transition from the sixth grade, dropping out largely because of a low knowledge-retention rate, low expectations regarding returns on effort and investment, and financial pressures. Figures are even lower in rural areas: gross enrollment in third-level basic education (grades seven through nine) is only 7%, and some 200,000 children are without access.
- 1.3 Some programs are now addressing these needs. Distance learning programs such as Educatodos and Telebásica, for example, as well as innovative initiatives to adapt educational programs to national curricula, are accessible to the public. However, owing to gaps in infrastructure, the potential of these programs has not been maximized. Institutional weaknesses complicate the situation further, as seen in fragmented policies and a loss of economies of scale.
- 1.4 High communications costs also have a deleterious effect on microenterprise performance, resulting in suboptimal transaction volumes and terms of trade. This situation reflects the low average productivity levels in Honduras, which are related to inadequate information on appropriate methods and technologies. For example, per-worker agricultural productivity stands at only half the average for Central America, while the percentage of irrigated farmland is 35% of the average for Central America, which itself is already less than competitive.
- 1.5 One way to alleviate these problems of access to information and knowledge is to use new technologies to deliver these services in which distance is not the main factor in investment costs. These technologies require energy inputs and telecommunications capacity. Therefore, if traditional methods are used, the low level of telecommunications network coverage and Honduras' limited electrical distribution capacity must be addressed in order to take advantage of these

technologies. With regard to telecommunications, presently more than 400,000 requests for service cannot be addressed and teledensity in rural areas stands at only 1 telephone per 100 people. The basic indices for five Central American countries are presented in the following table. To expand distribution, a range of technologies offering new types of decentralized services will have to be tested.

**Table I.1. Development of Telecommunications and Information Technology in Central America (1998-1999 data)**

Country	Honduras	Guatemala	El Salvador	Nicaragua	Costa Rica
Population (millions)	6.32	11.09	6.15	4.94	3.93
Rurality (%)*	50.6	55.0	50.4	24.7	50.2
Fixed telephone lines (thousands)	279	605	468	140	803
Density (fixed telephone lines/100 people)	4.42	5.46	7.61	2.98	20.41
Density in the country's capital	9.59	10.34	19.77	5.74	47.80
Density in the rest of the country	2.72	0.75	1.71	1.45	2.92
Expected installation time (years)	> 10	...	...	2.0	0.7
Public telephones/1,000 people	0.42	0.47	0.90	0.30	2.06
Mobile telephone lines (thousands)	79	351	383	69	143
Density (mobile lines/100 people)	1.24	3.17	6.22	1.40	3.64
Internet hosts	119	1,772	975	1,028	7,471
Internet hosts/1,000 people	0.02	0.16	0.16	0.23	2.08
Internet users/100 people	0.3	0.6	0.7	0.4	3.9
PCs/100 people	0.76	0.83	1.66	0.78	3.91
Radio receivers/100 people (**)	40.9	7.3	46.1	28.3	27.1
Televisions/1,000 people	9.4	6.1	13.3	7.0	22.7

Source: ITU, Americas Telecommunication Indicators 2000, (\*) IDB, and (\*\*) World Bank.

- 1.6 One of the government's alternatives is to finance subprojects that include a technology package and the accessories needed to use the technology. The "*technology package*" is a set of nontraditional tools to provide energy, information, telecommunication, education, and technical assistance inputs to microenterprises in disadvantaged communities. Basically the package will include elements such as photovoltaic cells or other similar systems to generate electricity, computers, cellular telephones or radiotelephony equipment, fax machines, software, and educational materials stored on magnetic media.
- 1.7 Implementation of these technologies normally leads communities to experience an expansion of opportunities for basic education, training, market information, and business information for small enterprises.

**B. Recent experience with new delivery modalities**

- 1.8 The legal mandate of the Consejo Hondureño de Ciencia y Tecnología [Honduras Science and Technology Council] (COHCIT)<sup>1</sup> includes responsibility for promoting technology transfers, formulating policy proposals in science and technology, and the promotion of actions to advance science and technology that are consistent with national development plans. Specifically, the government entrusted COHCIT with the responsibility of coordinating policies, individuals, and institutions associated with the National Innovation System, so that their actions work together with respect to disadvantaged communities.
- 1.9 COHCIT began the Solar Village program in March 1999. The first project was implemented in San Ramón with support from the United Nations Educational, Scientific and Cultural Organization (UNESCO). The project (US\$136,000) consisted of providing this village of 840 inhabitants with electricity from photovoltaic panels to improve the quality and quantity of school services (light and computers) and health services (sterilization and medication management), and to provide light in the church and main public streets.
- 1.10 The village received outside donations for supplying and operating satellite links to allow Internet access in October 2000. A second project was subsequently implemented in the village of San Francisco in May 2000, with support from the Organization of American States (OAS). A third solar village project is in preparation at La Hicaca, with OAS support.

**C. Lessons learned**

- 1.11 One of the lessons learned is that the package of solar energy inputs and information and communications technologies facilitates and motivates knowledge building, school coverage, microenterprise training, civic and community involvement, and communication with other cities and productive centers.
- 1.12 Intersector coordination was effective, and promoted national interest in supporting technology-based projects of this kind.
- 1.13 Although these programs have not been evaluated formally, results indicate that the technical support provided by international organizations was well implemented, but to replicate these programs local capacity will have to be developed to coordinate financing and assistance for each technological innovation.
- 1.14 The potential demand for technology packages in isolated communities, as in the cases of San Ramón and San Francisco, is great, even though demand becomes

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<sup>1</sup> COHCIT is directed by a 9-member board (3 from the public sector, 2 from the private sector, and 4 from academe) and a Minister-National Commissioner of Science and Technology.



manifest only after people realize that electrical and telephone services offer them opportunities for savings and other benefits.

- 1.15 In San Ramón, the technology afforded productive opportunities and opportunities for microenterprises limited to the local market. The importance of having technical and financial assistance became clear, orienting productive activities toward the region's and the nation's comparative advantages in terms of niche markets with established potential (timber and tourism, for example, which are focal points of economic development). In this way, microenterprises can participate in larger markets with more purchasing power, ultimately leading to greater income for the communities.

**D. Government strategy**

- 1.16 The Government of Honduras's basic plan for economic and social development is the poverty reduction strategy, set as a target in the Plan Maestro de Reconstrucción y Transformación Nacional [Master Plan for National Reconstruction and Transformation] (PMRTN). Among the many dimensions of poverty, the poverty reduction strategy notes that one key aspect is the low economic growth rate. The strategy further notes that a major underlying cause for that low rate is a lack of technological tools that promote human capacities. The strategy also emphasizes improvements in the coverage, quality, and equity of education, particularly in rural areas.
- 1.17 At the same time, to comply with existing sector policies the project's expansion of energy and/or telecommunications inputs, such as the educational services, must be consistent with current policies, plans, and regulations and with the future development of national strategies, policies, and programs directed toward rural populations.
- 1.18 Under its official mandate, COHCIT manages and channels financial resources to promote the country's scientific and technological development. In this regard, the government plans to use COHCIT strategically, developing science and technology policies that define a more effective model for access to information, communication, and education, to reduce the inequality of opportunity. In any event, the high cost of extending public services by using traditional modalities would render them unfeasible. Therefore, other programs will be complementary such as the Honduras Community Education Program, which serves isolated and very poor villages through community arrangements. See the technical annexes of the project for a list of complementary projects.
- 1.19 For all the foregoing activities, the government is requesting the Bank's support to finance a model that improves the cost-effectiveness of providing services and opens the way to markets and knowledge by filling in infrastructure gaps.

**E. Strategy and experience of the Bank**

- 1.20 The Bank's strategy supports implementation of the poverty reduction strategy and the PMRTN. The commitment of the government and the Bank is reflected in a greater emphasis on education and health, and on support for a set of complementary policies. These include policies regarding: (i) incentives (relative prices that affect demand for employees, tariffs, and subsidies); (ii) regulations (for example, regulations relating to the minimum wage and job security that affect the cost of employing workers and ultimately reduce employment levels); and (iii) the macroeconomy (monetary and fiscal policies and their distributive effects).
- 1.21 The project falls within this strategy because it presents a new tool—technology—that directly supports the poverty reduction strategy and specifically the most isolated communities where there are few or no options for getting out of poverty.
- 1.22 The Bank has extensive experience in the use of information technology and wireless telecommunications, particularly for education projects and telecenters. In Costa Rica, a pioneering information technology project in schools was successfully completed (1010/OC-CR). In Panama, 21 telecenters based on wireless technology were implemented and now satisfactorily serve various relatively low-income communities (1108/OC-PN). Recently, the Bank approved a US\$237 million loan to Argentina (AR-0176) to connect its schools via satellite networks, as experience has shown that wireless solutions offer equality of coverage, fast setup, lower maintenance costs, and better audio and image quality.
- 1.23 Finally, this focus is consistent with the conclusions of the regional workshop entitled Information and Communication Technologies for Local Development (ATN/KB-7072-RS), held in Managua, Nicaragua on 14-15 June 2001. The workshop concluded that experiences with telecenters have been successful to the extent that support and maintenance of the centers are guaranteed by their relationship to the everyday needs of the community. Furthermore, telecenters should be integrated into institutions (or groups of institutions) involved in local development, making it easier for all residents to use these technologies as an essential element of their regular daily activities.

## **II. PROJECT DESCRIPTION**

### **A. Goal, purpose, objectives and relevant characteristics of the project**

- 2.1 The goal of the project is to help reduce and, ultimately, eliminate the causes of poverty related to the disadvantages of isolation and inequality of opportunity.
- 2.2 The purpose is to open up opportunities for members of isolated communities in terms of education, information, and market knowledge services.
- 2.3 The specific objectives are: (i) to confirm the viability and cost-effectiveness of a model for access to a set of technological tools needed to provide educational, information, and market knowledge services; and (ii) to provide institutional strengthening for COHCIT to coordinate activities that include technological exchanges that promote the development of poor communities.
- 2.4 The “Innovation and Learning Loan” modality will be used for this operation for the following reasons:
  - a. **Various institutions are learning from a new experience:** The project will test a model for meeting community demand for educational and market knowledge services that involves coordination among various institutions. A community management model will also be tested regarding operation and support of the technology package.
  - b. **Flexibility is being introduced into the design:** The tests that the project will carry out with regard to supplying education and research models will allow COHCIT to obtain significant and necessary feedback. Adjustments will be made to the models, yielding stronger approaches for cooperation among the communities, the institutions, and content providers.
  - c. **The path to greater investment is being smoothed:** This test in a representative sample of communities will produce sufficient evidence to justify or reject more extensive investment to replicate the model.
- 2.5 The underlying theory of the project is that the model for distributing the technology package—which includes new institutional arrangements—is more cost-effective and more efficient than traditional methods of providing educational, knowledge, and market information services to isolated and poor communities. The model will be tested in a sample of approximately 100 isolated low-income communities—within a universe estimated at some 25,000 communities in similar situations. Under this theory, at the end of the project it is expected that: (i) the participating communities will use the technology package productively to achieve their educational, knowledge, and business objectives; (ii) the cost-effectiveness

analysis will indicate the new model's clear superiority over traditional service models; (iii) COHCIT will have an effective plan to promote the development of a national innovation system, characterized by greater coordination and by poor communities that are capable of accessing technology services markets relevant to their needs; (iv) an inter-institutional cooperation strategy will be in place to provide support and flexibility; and (v) Honduras will have a systematic investment and expansion plan for the technology packages.

- 2.6 In the longer term, this technological focus is expected to help considerably reduce the technological and educational gap. This, in turn, will lead to more favorable terms of trade for goods and services (relative prices)<sup>2</sup> for poor communities, thereby contributing to an increase in income potential and an improved quality of life. It is also expected that opportunities for women will increase considerably in terms of their human capital and information on specific market conditions relating to gender that they will need in order to compete effectively.

#### **B. Project structure**

- 2.7 The project consists of three components. The first component provides resources to implement the new model of educational and market knowledge services. The second component strengthens COHCIT's capacity to coordinate the project and to design policies and plans. The third component aims to provide conditions for effective monitoring and evaluation of the project.

##### **1. Component 1. Financing of technologies that facilitate educational and market knowledge services (US\$ 5.93 million)**

- 2.8 The objective of this component is to finance subprojects consisting of technology packages composed of photovoltaic cells and other similar electrical generation systems, computers, cellular telephones or radiotelephone equipment, fax machines, software, and educational materials stored on magnetic media. The size and content of each subproject or technology package will depend on the size, capacity, and interests of the requesting community. Financing may also be provided for satellite connection exchanges to serve strategically distributed groups of communities. The project will finance technical assistance for each subproject approved during the first year of operation.
- 2.9 The average investment cost per subproject will vary depending on community capacity, and will range from US\$4,000 (for the smallest communities and those

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<sup>2</sup> Terms of trade will improve as the new technologies lower transaction and information costs, and costs associated with achieving and maintaining a certain level of quality; at the same time, these technologies will make it possible to identify, achieve, and maintain the quality expected in larger markets, where prices are more favorable.

with less capacity) to US\$40,000 (for the largest communities with minimal infrastructure and maintenance resources).

- 2.10 The technology package will be located in a community communication and information center<sup>3</sup> (CCCC), administration of which will be the responsibility of the legal representatives of the community or participating local entity (for example, a parents association that has obtained legal status). In cases where the community organization is quite weak, its representatives may agree to outsource administrative tasks to individuals and NGOs engaged in related work in the region. This option will be reviewed as part of the subproject approval process.
- 2.11 To achieve the desired flexibility and effectiveness, funding will be provided within each subproject to adapt facilities for computers, telecommunications equipment, and energy sources. Technical training will be provided through firms and/or NGOs with expertise in information and communications technology issues.
- 2.12 An **inter-institutional coordinating committee** will be established to disseminate the lessons learned during the project and to anticipate or facilitate any unforeseen policy actions. The committee will be formed by the main parties involved: COHCIT, Empresa Hondureña de Telecomunicaciones [Honduras Telecommunications Company] (HONDUTEL), the Empresa Nacional de Energía Eléctrica [National Electric Energy Company] (ENEE), the Secretariat of Natural Resources and the Environment (SERNA), the Secretariat of State for Education, the Secretariat of State for Health, the Fondo Hondureño de Inversión Social [Honduras Social Investment Fund] (FHIS), the Asociación Nacional de Municipios de Honduras [National Association of Honduran Municipalities] (AHMON), and the Instituto Nacional de Formación Profesional [National Institute of Vocational Training] (INFOP). The committee will invite experts or entities, such as universities, as deemed necessary.
- 2.13 **Education:** The technology packages will make it possible to access existing educational services that are presently inaccessible owing to a lack of infrastructure and high distribution costs. The Secretary of State in the Department of Education will be a member of the inter-institutional coordinating committee, in order to avoid greater fragmentation of educational policy and to ensure that the activities follow official guidelines. Activities may include training, content design, and software procurement. The project will also facilitate a process of “Honduranization”—or adaptation of imported educational software—to the requirements of the national curriculum. This will make it possible to obtain and round out the educational offerings, thereby removing serious limitations that villages face in obtaining a

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<sup>3</sup> A CCCC is a shared space that provides access for the public and students to information and (tele)communications, so that they may obtain specific information on preselected topics such as basic education and microenterprises, and for personal communication needs such as exchanging e-mail with friends abroad.

sufficient minimum educational program. Based on experiences with these expanded educational offerings, a national dialogue will be promoted (with the aid of consultants hired with project resources) to consolidate a national approach to the selection of suitable educational models.

- 2.14 **Information and market knowledge:** The project will finance the initial phase of building useful market knowledge. Relevant instruction will be provided to practicing microentrepreneurs and to those in training. This will promote the community's economic development while assuring the project's sustainability. Therefore, the project will finance a regional training program to publicize the opportunities that the new technology package offers to increase productivity and to design and implement new business plans. Technical assistance will also be financed to develop practical and immediately useful inventions and to introduce and adapt the technology needed to boost productivity in the local production of goods and services.
- 2.15 **Community development plan:** Subproject financing will include technical assistance for community representatives to meet the requirement of preparing a community development plan. The development plan will include at least: (i) a description of the resource flows that will support the sustainability of the requested subproject; (ii) a demonstration of the added value that the technological tools will provide in terms of attaining the subproject's development objectives; (iii) evidence that local conditions make the subproject technically and economically feasible; and (iv) evidence that the greater involvement of women is being promoted.
- 2.16 **Promotion and social marketing:** The project will finance an intensive promotional campaign to motivate the public, local governments, community organizations, NGOs, consulting firms and consultants, teachers, healthcare providers, and other involved parties, to participate in the project. Toward the end of the project, the lessons learned will be disseminated in a regional seminar to which international agencies and donors will be invited.

## **2. Component 2. Institutional strengthening (US\$1.28 million)**

- 2.17 The objective of this component is to strengthen COHCIT's capacity to coordinate this jump start of technological change in eligible communities, and its capacity to lead, promote, coordinate, and manage actions leading to a flexible transfer of technology to disadvantaged communities in general.
- 2.18 **Project coordination:** Project resources will be used to hire five consultants for the duration of the project. These consultants will join the staff of COHCIT if the project is successful. Data processing equipment and transportation equipment will be procured as needed for project execution and for the expansion plans of COHCIT. The consultants will also support COHCIT in discussions of proposed

changes in the national science and technology plan and in monitoring and evaluating the project.

- 2.19 **Studies and consulting:** Consultants will be hired to support the design of new aspects and objectives of the national science and technology plan oriented toward the development of poor communities. To that end, financing will also be provided for the design and implementation of an inter-institutional mechanism for dialogue and decision making concerning proposed science and technology policies that promote productivity in those communities. Financing will be provided for studies of the strategic options that broader implementation of the Marco Act will offer in the telecommunications sector, and for studies on ways to incorporate issues of particular relevance to women as these opportunities expand.<sup>4</sup>
- 2.20 **Expansion of knowledge and skills for research and development:** Resources will be provided for joint research by universities, NGOs, the private sector, and the communities into possible inventions and innovations in the production of goods and services, and to identify potential alliances and/or niche markets that promote the development of the participants. Digital Nations (DN) will provide expert technical assistance on issues of expanding local capacities, research, and policies. DN is a consortium led by the Media Laboratory at the Massachusetts Institute of Technology (MIT) and the Center for International Development at Harvard University. DN is composed of a growing number of developing countries and international corporations that are developing or have developed best practices in other areas similar to those that Honduras is contemplating in this project.
- 2.21 Specifically, DN will support five activities: (i) evaluation of the benefits of Component 1 for education and knowledge building; (ii) orientation on content development methods and ways to draw on local experience to build knowledge and solutions appropriate to their needs; (iii) identification of e-learning methods; (iv) identification of suitable methods for using the Children's Museum of Science and Technology, which is managed by COHCIT, for learning in villages; and (v) dialogue on best practices for devising science and technology policies.

### **3. Component 3. Monitoring, evaluation, and external audit (US\$260,000)**

- 2.22 The objective is to verify that the project is complying with the agreed goals and targets and that the project is being implemented in compliance with Bank regulations. Consultants and hardware will be contracted to provide continuous monitoring, gather information to document the lessons learned, and warn of significant divergences from the expected indicators specified in the logical framework. Specifically, a consulting firm will be hired to perform an impact analysis. The external auditing required for the project will also be contracted.

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<sup>4</sup> See the privatization and capitalization procedures of the state monopoly HONDUTEL.

**C. Cost and financing**

- 2.23 Table II.1 presents a breakdown of project costs by component and source of financing.
- 2.24 The total cost is estimated at US\$9.5 million, broken down as follows: (i) US\$8.5 from the Bank, using resources from the Fund for Special Operations (FSO), in United States dollars; and (ii) US\$1 million from the Government of the Republic of Honduras.



**Table II.1 Table of Costs**

Category	IDB	Local contribution	Total	%
<b>1. Component 1: Financing of facilitating technologies</b>	<b>5,928,000</b>	<b>611,000</b>	<b>6,539,000</b>	<b>68.9%</b>
1.1 Technical assistance/consulting	398,000		398,000	
1.2 Technology packages	5,230,000	611,000	5,841,000	
1.3 Training	300,000		300,000	
<b>2. Component 2: Institutional strengthening of COHCIT</b>	<b>1,280,000</b>	<b>54,000</b>	<b>1,334,000</b>	<b>14%</b>
2.1 Project coordination (DCC)	390,000	54,000	444,000	
2.2 Studies and consulting	410,000		410,000	
2.3 Expansion of knowledge and skills for R&D (incl. Digital Nations)	400,000		400,000	
2.4 Furnishing and equipment	80,000		80,000	
<b>3. Component 3: Monitoring, evaluation, and external audit</b>	<b>260,000</b>		<b>260,000</b>	<b>2.7%</b>
3.1 Monitoring/evaluation system	200,000		200,000	
3.2 External audit	60,000		60,000	
<b>4. Unallocated costs</b>	<b>847,260</b>	<b>313,189</b>	<b>1,160,449</b>	<b>12.2%</b>
4.1 Contingencies 10%	847,260	313,189	1,160,449	
<b>5. Financial costs</b>	<b>184,740</b>	<b>21,811</b>	<b>206,551</b>	<b>2.2%</b>
5.1 Interest	99,740		99,740	
5.2 Credit fee		21,811	21,811	
5.3 Inspection and supervision	85,000		85,000	
<b>Total</b>	<b>8,500,000</b>	<b>1,000,000</b>	<b>9,500,000</b>	<b>100%</b>
<b>%</b>	<b>89.5%</b>	<b>10.5%</b>	<b>100%</b>	

**2.25 Loan conditions:**

**Table II.2 Loan conditions**

Source of financing	Fund for Special Operations (FSO)
Currency	US\$ Single Currency Facility
<b>Conditions:</b>	
Amortization	40 years
Grace period	10 years
Disbursement period	30 months (plus 6 months for financing project auditing)
Interest rate	1% for the first 10 years, 2% thereafter
Inspection and supervision	1% of the loan total
Credit fee	0.5% of the undisbursed balance

2.26 The disbursement schedule is as follows:

**Table II.3 Disbursement schedule**

<b>Source</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
IDB	2,500	4,500	1,270	8,270
Local	300	500	178	978
Total	2,800	5,000	1,448	9,248

### III. EXECUTION

- 3.1 The borrower will be the Republic of Honduras. The executing agency will be the Consejo Hondureño de Ciencia y Tecnología (COHCIT), which shall act through the Dirección de Cooperación del COHCIT [COHCIT Office of Cooperation] (DCC).
- A. Coordination and administration of execution**
- 3.2 The COHCIT Office of Cooperation (DCC) is responsible for project execution and will coordinate the various project activities. Five qualified and experienced consultants will be hired: one to coordinate the overall project, three to coordinate each of the components, and one to craft proposals and policy plans for the sector. Technical equipment and vehicles will be acquired to support DCC management. Local counterpart resources will be used to hire the services of an accountant, an attorney, an executive secretary, and additional courier and security services. Project resources will be used to contract the services of NGOs that will outsource promotional activities and review community requests. NGOs or consulting firms will also be hired to monitor the socioeconomic evolution of the communities where projects are financed in the years following project completion. The Operating Regulations will specify the eligibility criteria for hiring these NGOs and companies. Short-term consultants will also be financed for specific issues. **Evidence that the project coordinator has joined the DCC and that the minimum equipment needed for project management has been procured are conditions precedent to the first disbursement.**
- 3.3 The minister of COHCIT, as the representative of the executing agency, will have ultimate responsibility for the project. He will lead the meetings and dialogues planned in the context of the project, and will chair the inter-institutional coordinating committee in accordance with the provisions of the project's Operating Regulations.
- 3.4 Among other responsibilities, the director of the DCC will verify that the project's activities are in line with the other activities undertaken by COHCIT and other government and private agencies regarding project-related issues, in order to promote synergies with other projects. The director's specific functions are detailed in the project's Operating Regulations.
- 3.5 The project coordinator's responsibilities will include: (i) supporting local entities that participate in the bidding processes required for procurement of goods and services in the subprojects or, with the agreement of the Bank, recommending the contracting of consulting services to that end; (ii) providing supervision to ensure that the NGOs that provide promotion and subproject preapproval services comply with the eligibility criteria established in the project's Operating Regulations;

(iii) ensuring that participating local entities comply with the eligibility criteria to qualify as beneficiaries of the project, prior to signing the contracts between COHCIT and each participating local entity; (iv) preparing requests for disbursements, substantiation of the use of funds and the reports planned within the project; (v) developing and implementing adequate accounting, financial, and internal control systems to manage project resources—including supervision of the quality of investments and consulting covered under the project; (vi) organizing the accounting system so that the sources and uses of project funds can be identified, with supporting documentation; (vii) maintaining a suitable file of substantiating documentation for disbursements; (viii) preparing the project's annual financial statements and presenting them for the opinion of the external auditors provided for in the project; and (ix) monitoring the various performance indicators and documenting lessons learned.

- 3.6 The inter-institutional coordinating committee<sup>5</sup> will approve the project's Operating Regulations, which will be consistent with the provisions concerning the requirements that each of the institutions that make up the committee has defined for activities in its sector of responsibility. The committee will approve the project's annual operating plan, and will give advice and facilitate its actions, including taking the necessary steps to grant legal status to local entities that may participate and do not yet have such status. The committee's responsibilities will not extend to functions directly related to project execution. The Operating Regulations will identify the liaison officer at each institution, and the procedures that each institution requires with regard to permits for activities planned within the project. The functions of this coordinating committee will be specified in the project's Operating Regulations. **Evidence that the inter-institutional coordinating committee has been formed and that each of its member parties has agreed to the coordination commitments required for flexible project execution are conditions precedent to the first disbursement.**
- 3.7 **Operating Regulations.** Project execution will be governed by Operating Regulations, the basic characteristics of which have been agreed upon between the executing agency and the Bank. The inter-institutional coordinating committee will approve the Operating Regulations. The Operating Regulations will include a description of the technical and administrative functions of the various agencies of COHCIT involved in project execution, as well as the eligibility criteria for subprojects financed as part of Component I; the eligibility criteria for the companies and NGOs that will provide support for the communities and participating local entities in developing and submitting subprojects; and the procedures for subproject selection. The model agreement to be signed between COHCIT and the participating local entity will also be part of the Operating

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<sup>5</sup> The inter-institutional coordinating committee described in Chapter II is composed of COHCIT, HONDUTEL, the Secretariat of Education, the Secretariat of Health, INFOP, FHIS, ENEE, SERNA and AHMON.

**Regulations. Entry into effect of the Operating Regulations with the approval of the inter-institutional coordinating committee is a condition precedent to the first disbursement (see paragraph 3.6).**

**B. Auditing and reports**

- 3.8 Each year, the executing agency will submit an annual operating plan to the Bank. A progress report on the project will be submitted to the Bank semiannually. The report will focus on attainment of the performance indicators and/or issues that pose or may pose obstacles for the project.
- 3.9 The external audit of the project will be financed with project resources. Each year the DCC will submit financial statements, audited by an independent firm to the satisfaction of the Bank.

**C. Revolving fund**

- 3.10 Resources of the project and the local counterpart will be deposited into a special account of the executing agency at a local bank. A revolving fund equal to 5% of the amount of the loan will be created to facilitate cash flow.

**D. Execution of project components.**

**1. Component 1. Financing of technologies that facilitate education and market knowledge services**

- 3.11 The target communities are low-income villages and remote rural communities with schools and/or where HONDUTEL telephone centers operate. A very limited number of extremely poor communities with scattered populations will also be identified where there are no schools or access to energy or telephone service, to test innovative methods of social inclusion.
- 3.12 **Conditions for subproject financing:** Financing of a subproject, consisting of a technology package, in a community will depend on the existence of certain basic conditions for feasibility as stated in the Operating Regulations. These conditions will be reviewed during the approval cycle for project requests. One condition is that the community has a development plan, described in the preceding chapter, for which technical assistance will be provided. The community must be located within a strategically defined geographical area in order to achieve economies of scale and network effects. Another condition is that financial support requirements for the operating costs of the CCCCs are minimal in relation to the support needed for investment, at the same time they contribute at least 10% to the total amount of the investment—including contributions from other organizations such as NGOs, HONDUTEL, and FHIS, as well as private-sector entrepreneurs who opt to invest in the business.

- 3.13 **Poverty targeting:** The target communities must be low-income communities in accordance with the FHIS poverty map; therefore, the project is a poverty-targeted investment.
- 3.14 **Selecting the education offerings:** In order to specify the sort of service preferred in each community to be awarded a subproject, the technical support staff in conjunction with the community will define the program and educational model that is appropriate for the new technology. Specifically, an effort will be made to take advantage of existing educational resources in Honduras, such as the distance learning technology education programs *Educadores* and *Telebásica*, which improve the quality and equity of, and access to, education. To that end, the existing educational programs will be paired up or reconciled with the type of technology package that the community will receive. In communities where these programs cannot be used, or where another solution is considered more appropriate, the non-objection of the Secretariat of Education will be requested for testing the proposed solution.
- 3.15 Twelve months after the technology and education packages are installed in at least ten communities, workshops and seminars with national and international experts will be held to: (i) discuss the basic experience to date, with the results achieved; (ii) define a decision-making model to guide the introduction and use of technology in education; and (iii) formulate a strategy agreed by consensus among the educational, technological, and technical support institutions involved that supports the dissemination of the new alternatives. The project will promote inter-institutional coordination through a roundtable to develop this model and strategy, which will include the inter-institutional coordinating committee along with NGOs and experts.
- 3.16 **Selection of telecommunications equipment:** The telecommunications technologies that may be included in the technology package will be defined based on the costs and benefits of the alternatives reviewed, for example via low-cost satellite, radio, and/or television in accordance with conditions and the added value expected from the technology, under the community development plan. The selected technology will be characterized by offering audio, video, and data connectivity, and will be a flexible platform that can handle various applications, including e-learning, as well as educational content and content of interest to microentrepreneurs in order to generate more economic transactions.<sup>6</sup>

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<sup>6</sup> *Satellite systems* place their earth stations where needed, regardless of how remote the location. By contrast, *land-only distribution systems* have to spread out from urban areas, provided that budgets allow for building more relay stations or installation of additional cables. Moreover, failure at a single earth station in the *satellite system* is limited to that location, but a single broken cable in *land-only systems* affects the entire network from that point on.

- 3.17 **Selecting an energy solution:** To provide the required electrical power, alternative energy solutions will be financed in communities that are isolated from electrical distribution networks. This will include financing for renewable energy equipment recommended for the area (photovoltaic solar energy technologies, mini and micro hydroelectric plants, and energy deriving from various biomass sources). Training will also be provided for COHCIT and the communities with regard to maintenance, and the criteria for analyzing and selecting technology (such as methods for validating the selected solution).
- 3.18 **Subproject approval cycle:** The cycle consists of five stages: (i) *Identification*: at the beginning of the project, geographical areas will be preselected that have a high concentration of potentially eligible communities; (ii) *Promotion*: the preselected communities will be contacted and encouraged to participate in the project. The project will outsource the promotion function through an NGO, a company, or individual consultants. This consulting function will also be responsible for reviewing and rating applications; (iii) *Approval*: once COHCIT receives an appropriately reviewed request, it will submit the request for approval to an executive committee of the project, composed of the coordinator of the DCC, a representative of the inter-institutional committee, and the Minister Commissioner of COHCIT; (iv) *Execution*: communities with approved projects will coordinate equipment installation and the maintenance program with HONDUTEL, and will select an NGO or consulting firm—from a list of organizations prequalified by the DCC—which will be responsible for assisting and training the community during project implementation; and (v) *Supervision and control*: the DCC specialist responsible for supervision will ensure that execution of approved projects in participating communities complies with the agreed terms of reference and technical specifications.
- 3.19 **Municipal Information and Technology Committees:** Municipal support committees will be formed to facilitate technology transfers, coordination at the local level, and sustainability. Each community that receives project support will be part of a *municipal information and technology committee* in its municipality, as provided in the Operating Regulations. These committees will be responsible for ensuring that any technology proposed for introduction into a community under its jurisdiction is relevant to that setting, is practical and useful, and has the potential to improve the absorption of local knowledge. The municipal information and technology committee will be created during the promotion stage, and will consist of institutional representatives appointed by the inter-institutional coordinating committee, and representatives of the communities.

## **2. Component 2. Institutional strengthening of COHCIT**

- 3.20 To execute this component the DCC will hire experienced consultants to: (i) prepare discussions and studies on the inclusion of technology policies that promote the interests of poor communities; a proposal will be developed for

implementation of the activities included in the national science and technology plan; (ii) support the design and implementation of a new organizational structure at COHCIT; (iii) develop a training plan for the staff of the inter-institutional coordinating committee and the municipal information and technology committees; and (iv) organize the selection of joint research and development projects oriented toward, and with the participation of, the communities. For activities (i) and (iv) COHCIT will have the expert assistance of Digital Nations (see paragraph 2.21 for a list of specific activities). **The government has requested an exception for the direct contracting of Digital Nations.**

- 3.21 The Project Team has considered the request for an exception to hire DN, and concluded that the request was appropriate. DN offers some unique comparative technical and institutional advantages. First, in the specific area of facilitating access for remote and/or marginalized populations, its specialized knowledge is not available from other companies, given its capacity and well-known experience. The group of experts available at DN has uniquely applicable qualifications and experience—including corporations linked with DN that have unique specialized knowledge—not found at other consulting firms. DN also offers a combination of technological resources in terms of laboratories, academic resources, research, science and technology policy, and economic evaluation of subprojects, that is truly unparalleled in the market, providing critical added value for the project's objectives. DN also has comparative institutional advantages, since it has the flexibility to adjust the scope of its technical support as necessary (at no additional cost); its capacity to coordinate international and local experts and particularly the communities is outstanding. It has held very positive and mutually satisfactory discussions with COHCIT, and can offer continuity in technical support after project execution.

### **3. Component 3. Monitoring and evaluation system**

- 3.22 The DCC will provide systematic monitoring of the indicators agreed upon in the logical framework, (Annex I). Two midterm evaluations will be conducted. These evaluations will review only the progress that has been made with regard to the indicators described in the logical framework, and trends in those indicators. A final evaluation will also be conducted. To that end, an independent consulting firm will be contracted from the start of the project. It will use focus groups to determine the feasibility of the execution method and the expected impact. The company will gather basic information at the start of the project, during the second midterm evaluation, and upon conclusion of the project.
- 3.23 The *midterm evaluations* will be performed 12 and 22 months after the eligibility date for disbursement of the financing. The logical framework contains a midterm evaluation matrix that describes the data to be collected and the indices to be measured. The results of these evaluations will be analyzed jointly with the Bank,



and will serve as a basis for recommendations concerning adjustments and/or reformulation of the project.

- 3.24 The consulting firm will prepare the *final evaluation* 30 days after the last project activity. The evaluation will measure the impact of the project and compliance with project objectives in terms of efficiency, effectiveness, and sustainability, and with reference to the indicators specified in the project's logical framework.

**E. Execution period**

- 3.25 The project is scheduled to run for 30 months. A series of discussions have been held and agreements have been reached between COHCIT and the other institutions involved. Accordingly no significant delays or obstacles are expected; rather, the institutions will facilitate the process. Given its familiarity with management of three solar villages and one project that is in the process of concluding, COHCIT is well positioned to absorb and implement the expansion of its staff that the project will require, for which advance funds are being provided. Similarly, given the experience of COHCIT in projects of this type and the strengthening of the DCC, the terms of reference for hiring consultants, NGOs, and consulting firms should all be ready. Contracting of Digital Nations (DN) will also be expedited if the Bank approves the requested exception. DN's functions will begin at the same time as Component I, and no prior work by DN will be required before the start of any component. Under these circumstances, it is expected that the first stages of the project cycle (Component 1), identification and promotion, will take approximately six months, starting with the entry into effect of the loan contract with the Bank. Preparation of brochures and other requirements, including a request for expressions of interest in bidding on equipment, will begin promptly, even before the loan is approved. Therefore, the process of installing equipment can begin quickly, no later than month six according to conservative estimates.

#### **IV. TECHNICAL VIABILITY, BENEFITS AND RISKS**

##### **A. Institutional viability**

- 4.1 The high priority that the poverty reduction strategy places on technological tools that support poverty reduction assures government support. The Office of the President of the Republic has played a noticeable and active role, and the institutions involved have shown a clear willingness to participate in the inter-institutional coordinating committee and to sign coordination agreements with COHCIT. All of this provides assurances of institutional sustainability. The inter-institutional coordination mechanisms agreed upon among the institutions involved will govern the various levels of project execution, from the macro level (agreements between COHCIT and institution X) to the micro level (agreement to provide permits and designate responsibilities at the level of each community project).
- 4.2 COHCIT has gained significant experience in projects with the OAS, UNESCO, and World Bank. The size of this project calls for reinforcing that experience and management capacity, which the project will provide through expansion of the DCC and through advice and specialized international technical assistance. These activities were designed to enhance the managerial organization of the project.
- 4.3 HONDUTEL may be privatized before the end of the project. As usual in cases of privatization in the telecommunications sector, the monopoly position is likely to be maintained until 2005 under the new administration, and/or the sale contract will include commitments to expand services to poor rural areas and areas of low profitability. COHCIT's agreement with HONDUTEL will stipulate that, in case of sale or organizational change at HONDUTEL, the new owners or senior managers will assume the commitments made with respect to execution of this project—which, moreover, is very small.

##### **B. Economic viability and sustainability of the project**

- 4.4 The project was conceived as a way to create conditions to open up social and economic opportunities in poor communities, which if successful will also have indirect effects (externalities) on the emergence of energy, telecommunications, and information markets that have been sluggish so far. New business inroads into other markets will come about through the expected reduction in the cost of obtaining information on ways to improve education, the quality and productivity of goods and services produced by the community, training opportunities, less expensive alternatives for transporting products, the ability to compare prices among market intermediaries, gathering prices, and methods for direct communication with potential clients and other market agents.

- 4.5 The project also includes investments in various sectors (at least electric power and telecommunications) that may have significant modularity and strong complementary effects on each other, and may have a major impact on many other sectors (education, health, etc.). Therefore, the rate of social return is expected to be high.
- 4.6 The condition and requirement that communities demonstrate the added value that the new technologies will bring to their efforts to attain local development targets enhance confidence concerning the subproject's sustainability. Evaluation of this information will make it possible to assess the degree to which the community has appropriated these technologies, and the potential sustainability of the subproject.
- 4.7 The project, therefore, is consistent with the conclusions of the regional workshop entitled "Information and Communications Technologies for Local Development", which concluded that the sustainability of a telecenter (a CCCC) depends on the extent to which it is integrated with local development and is not solely a commercial activity. In other words, the technology must be an essential element of community efforts to overcome poverty and engage in development.
- 4.8 Given these expected benefits, it is reasonable to consider the project a strategic foundation in support of the poverty reduction strategy. Upon completion of the project, the cost-effectiveness of the model can be calculated, and its advantage can be checked against other alternatives.

**C. Environmental and social viability**

- 4.9 None of the operation's activities will have a direct effect on the environment. Indirectly, the operation will be positive. By educating participants about the environment, it will contribute to the sustainable management of natural resources. The inclusion of small renewable energy systems will stimulate demand for this sort of less polluting energy. The Operating Regulations will include a management plan for reviewing potential environmental impacts of subprojects submitted by the communities. With regard to social impacts, the experiences in the two pilot communities in San Ramón and San Francisco boosted the community's self-esteem, and lowered delinquency and alcoholism rates owing to access to audio-video systems, computers, Internet access, a public lighting system, and refrigeration systems at the health center. These pilot centers have become satellite centers where citizens from other small villages gather to use the available technologies and services.

**D. Benefits**

- 4.10 Telecommunications facilities in isolated areas normally represent considerable savings. For example, they can replace postal service and reduce the number of individual trips for health concerns, work, and education, and may make them more

efficient. This is particularly obvious in the area of production and commercial distribution, where timely information is extremely valuable. As opportunities increase for obtaining and/or processing information and knowledge, opportunities for a higher income increase as well, leading to prospects for a greatly improved quality of life.

- 4.11 The project will also help villages, which have had extremely limited educational options in the past, take advantage of existing distance learning programs. The project will also facilitate a process of "Honduranization", or adaptation of imported educational software to the requirements of the national curriculum.
- 4.12 The trend toward equality of opportunity for women is also expected to be stepped up. As information and market conditions open up, opportunities for women increase as well. Women will also be better prepared and trained. Moreover, this new access to information and education will help improve disease prevention and lower infant mortality rates.
- 4.13 In addition, the various sources of renewable energy and electronic communications will help preserve the environment. The introduction of new educational methods will promote improvements in the environment, ecology, and appreciation of the communities' natural resources, which may have been underappreciated in the past.
- 4.14 Once a telephony network is installed, it can be leveraged to provide a series of additional applications via Internet. Government and commercial agents can conduct basic transactions and provide labor and management training. Moreover, the future capacity of telemedicine will continue to expand. The communications network will also assist with coordination during recovery from natural disasters.
- 4.15 In terms of promoting synergies and complementarity, the project will strengthen other efforts in education, health, agriculture, and sustainable development, many of which receive Bank support. To that end, activities will be coordinated to achieve the desired synergies.

#### **E. Risks**

- 4.16 The risks that communities will not react with the expected eagerness and an insufficient number of subprojects will be requested, or that the requesting communities will be so widely scattered as to impact the necessary "network effect", are truly low. In recent months, the demonstration effect of the centers in San Ramón and San Francisco has persuaded many other settlements to request similar projects. These positive reactions will now be accompanied by a concerted, targeted social promotion and marketing effort financed by the project. Therefore, no difficulty is expected in terms of attracting a sufficient number of requests and applications from communities (more than 100).

- 4.17 The change in government in 2002 involves a certain level of uncertainty with regard to the priority of the project for the new government. However, a consensus exists among the institutions that will form the inter-institutional coordinating committee, and the issue has been addressed in political dialogues by various parties, and has also been accepted by the church. Therefore, no special actions are deemed necessary to mitigate this potential risk.

**EXPANSION OF TECHNOLOGICAL CAPACITIES IN POOR COMMUNITIES**  
**LOGICAL FRAMEWORK MATRIX AND EVALUATION MATRIXES**

Project Summary	Indicators	Means of Verification	Assumptions
<p>eliminate causes of related to the stages of isolation and opportunity.</p>	<p>Communications opportunities for personal and business purposes increase by 250% (note that in the absence of telephone service, communications are nearly nonexistent) and communication and education costs decrease by 50% (note that presently, the high cost of many desirable activities makes them unavailable).  Social welfare institutions, local governments, and community organizations benefit from the communications systems and exchanges of experience, increasing their transactions by 30%.</p>	<p>Specialized surveys that will be conducted after the project has been completed for five (5) years. It is recommended that Bank methodologies (OVE) and Bank financing be used.</p>	<p>The Government of Honduras maintains the priority of poverty reduction and technological innovation programs, and the and open-market and skills p contribute to economic growth.</p>
<p>up opportunities to education services, on, and market ge. Specifically, an al model will be tested ering a package of gical tools and ning COHCIT's o coordinate gical changes that he development of poor ties.</p>	<p><b>At the end of the project</b>  <b>NOTE: see the evaluation matrix following the logical framework in this annex for midterm targets.</b>  Participating communities consider the distribution model essential for their development and they adopt it, incorporating the model as a permanent element of their development plan.    Public and private organizations in the national innovation system increase their budgets for activities targeting poor communities by at least 15%.</p>	<p>Final evaluation report prepared by a specialized consulting firm, financed by project resources, using focus groups along with the communities' development plans.    Final evaluation report.  Community survey.</p>	<p>Participating communities maintain their interest in the project and fulfill their contracted commitments, particularly with regard to maintaining the hardware and installations.    The inter-institutional coordination committee will assist in a timely and effective way with the needs of the project.</p>

Project Summary	Indicators	Means of Verification	Assumptions
	<p>Identification of business and employment opportunities increase by 50% over the base year and/or with respect to control groups.</p> <p>Identification of nearby medical centers appropriate to needs, references for doctors and medical appointments, increased by at least 50% over the base year and/or with respect to control groups.</p> <p>The time spent contacting suppliers and buyers decreases by 25% over the base year and/or with respect to control groups, or reduction in unnecessary trips.</p> <p>Congestion on line of communication in communities that have some form of communication reduced by 50% over the base year and/or with respect to control groups (alternative: reduction in interference in domestic and international communications).</p> <p>At least 80% of the people who participated in the project believe that it was highly beneficial in terms of: i) communications; ii) gaining knowledge of input and product markets, and iii) new services received as a result of having a power source.</p>	<p>Final evaluation report</p> <p>Final evaluation report</p> <p>Final evaluation report</p> <p>Final evaluation report</p> <p>Final evaluation report</p>	<p>The Government of Honduras continues to place priority on the project.</p> <p>International organizations in technology innovation issues continue to support the project.</p> <p>The market information system continues to provide timely information.</p>

Project Summary	Indicators	Means of Verification	Assumptions
	<p>The following analyses are undertaken at the project level: (i) effectiveness, to verify whether components were achieved within the allotted timeframe; (ii) progress in financial self-sufficiency, checking to ensure that revenues of the “Community Communications and Information Centers” defray at least 50% of total costs; (iii) efficiency, verifying that through the project, users increase their knowledge by 25% (in terms of tests and examinations comparing the baseline with the level attained by completion of the project); and (iv) COHCIT assumes its leadership role, reflected in a 70% increase in the number of requests it receives, a 50% increase in the number and level of participants in meetings and workshops, and a 50% increase in leadership activities expressly requested by clients for on site meetings or via web site visits; and (v) women and men participate in and benefit from the project in equal measure (training, use of technology). The ratio between the sexes will not exceed 40-60% in project activities.</p>	Final evaluation report	
ents:	<p><b>Upon completion of the project (<i>the midterm targets appear in a midterm evaluations matrix</i>)</b></p>		
<p>ent 1.</p> <p>gies that facilitate and market knowledge made available to the ties.</p>	<p>One hundred (100) community centers implemented as described in the project report, and are operating to the satisfaction of the communities participating in the project.</p>		<p>The institutions involved in the inter-institutional coordinating committee will work together effectively to promote the pro</p>



Project Summary	Indicators	Means of Verification	Assumptions
<p>ent 2.</p> <p>nal strengthening plan</p>	<p>250 short courses and workshops held, in accordance with the training plan agreed on with the Bank.</p>	<p>Final evaluation report Inspection visits</p>	<p>The institutions that are part of the inter-institutional committee meet periodically and address problems that may arise (bottlenecks) in a timely manner.</p>
	<p>125 community center operators trained in instructional and administrative techniques.</p>	<p>Final evaluation report Inspection visits Executing agency records</p>	
	<p>Occupancy rate of the community centers is 80% in relation to the installed capacity, in shifts of 40 hours per week.</p>	<p>Final evaluation report Inspection visits Executing agency records</p>	<p>The domestic and foreign organizations involved provide timely and high-quality content to be used in community centers.</p>
	<p>Training provided for 250 current or potential microentrepreneurs.</p>	<p>Final evaluation report Inspection visits Executing agency records</p>	
	<p><b>Upon project completion:</b> National Science and Technology Plan reviewed and implemented.</p>	<p>Final evaluation report Inspection visits</p>	<p>Political support exists for implementation of the National Science and Technology Plan.</p>
	<p>The Office of Cooperation is functioning effectively and incorporate the consultants hired with project resources into its staff.</p>	<p>Final evaluation report Visits to COHCIT</p>	<p>Legal provisions concerning operation and/or reorganization of COHCIT are approved in a timely manner.</p>
	<p>Association with Digital Nations makes it possible to adapt and implement at least two of their main practices, and to define and support a research agenda that is appropriate to local needs.</p>	<p>Final evaluation report. Executing agency records Final evaluation report Inspection visits</p>	

Project Summary	Indicators	Means of Verification	Assumptions
<p>ent 3.</p> <p>ng and evaluation system nted.</p>	<p><b>Upon project completion:</b></p> <p>The data generated by the project is processed in a timely manner and is reliable, allowing for appropriate monitoring and administration of project activities.</p> <p>The consulting firm responsible for the midterm and final evaluations, and the executing agency, express their satisfaction with the quality of the data processed by the system.</p> <p>The monitoring and evaluation system is incorporated into COHCIT.</p>	<p>Final evaluation report Inspection visits</p> <p>Final evaluation report Inspection visits Minutes of midterm and final evaluation meetings</p> <p>Final evaluation report Inspection visits</p>	<p>The communities participating in the project record their activities and achievements adequately.</p> <p>The interviewed population cooperates with the consulting firm, supplying reliable information.</p> <p>The control groups and control communities work disinterestedly with the consulting firm, providing the necessary information.</p>
<p>s: ent 1.</p> <p>ns of reference for rapid ssment</p> <p>d assessment</p> <p>targeting</p> <p>ect promotion</p> <p>ications for community icipation received</p> <p>ect execution by munities.</p>	<p><i>Project budget by component, according to source of financing.</i></p> <p>IDB contribution: \$5,928,000</p> <p>Local counterpart: \$3,200,000</p> <p><b>Total: \$9,128,000</b></p>	<p>Project budget</p> <p>Audited financial statements</p>	<p>The communities respond favorably to the promotional plan and participate actively in the project.</p> <p>The inter-institutional agreements are followed, and coordination is adequate for project implementation.</p>

Project Summary	Indicators	Means of Verification	Assumptions
<p><b>Component 2.</b></p> <p>Preparation of terms of reference for consultants</p> <p>Engagement of firms</p> <p>Development and implementation of contracted consulting</p> <p>Development of training</p>	<p>IDB contribution: \$1.28 million</p> <p>Local counterpart: \$54,000</p> <p><b>Total: \$1.334 million</b></p>	<p>Project budget</p> <p>Audited financial statements</p>	<p>The participation of local government is satisfactory.</p> <p>The local counterpart, from the Government of Honduras and communities, is sufficient and timely.</p>
<p><b>Component 3.</b></p> <p>Preparation of terms of reference for firms:</p> <p>Evaluation system, and external audit.</p> <p>Engagement of firms</p> <p>Implementation of monitoring and evaluation system</p> <p>Term evaluation at 12 and 30 months.</p> <p>Final evaluation at 30 months</p> <p>Preparation of audited financial statements, annual mission</p>	<p>IDB contribution: \$260,000</p> <p>Local counterpart: \$0</p> <p><b>Total: \$260,000</b></p>	<p>Project budget</p> <p>Audited statements</p>	

### MIDTERM EVALUATION MATRIX, PROPOSAL LEVEL

Purpose	At 12 months	At 22 months	Conditions
<p>up opportunities to members of communities for the following:</p> <p>Education</p> <p>Information</p> <p>Market knowledge</p> <p>objectives:</p>	<p>At least 30 requests for technology packages submitted by approved communities. Of these, at least 5 have been installed and the rest are at various stages of processing</p>	<p>At least 60 requests for technology packages submitted by approved communities. Of these, at least 35 have been installed and the rest are at various stages of processing</p>	<p>The consulting firm initiates the baseline at the same time the project begins, and presents its comparative report on the benefits achieved at 12 months and at 30 months for the evaluation.</p>
<p>the institutional viability and economic potential of a model for installing a technology package to provide these services</p>	<p>The 5 schools in the communities with installed packages are clear on the instructional model they will use in order to take advantage of the new technologies as a complement to and support for educational plans.</p>	<p>The 35 schools in the communities with installed packages are clear on the instructional model they will use in order to take advantage of the new technologies as a complement to and support for educational plans.</p>	<p>At least 80% of the population participate in the interviews and surveys.</p>
<p>Organizational strengthening of COHCIT to implement technical changes that support the development of poor communities.</p>	<p>At least 40% of the information requirements identified by the consulting firm responsible for the evaluations—as identified during the baseline study—are reflected in the content available electronically to community users.</p>	<p>At least 70% of the information requirements identified by the consulting firm responsible for the evaluations—as identified during the baseline study—are reflected in the content available electronically to community users.</p>	<p>The focus group method is used, and the following issues are analyzed:</p> <ul style="list-style-type: none"> <li>i) effectiveness, to verify that the project is achieving the desired results;</li> <li>ii) financial self-sufficiency, to determine whether revenues are sufficient to defray total costs;</li> <li>iii) efficiency, to determine whether users are increasing their knowledge and productivity through the project; and</li> <li>iv) effectiveness of COHCIT leadership in attracting attention and resources for technological advancement in poor communities.</li> </ul>

Purpose	At 12 months	At 22 months	Conditions
	At least 50% of microentrepreneur users (present or potential) find that the information available electronically is useful for the sale of products or for obtaining inputs or training.	At least 75% of microentrepreneur users (present or potential) find that the information available electronically is useful for the sale of products or for obtaining inputs or training.	
	The institutions involved in the inter-institutional coordinating committee believe that there are indications that the new institutional model is consistent with the policies of each sector and the cost-effectiveness trend is clearly toward cost reduction while the foreseeable effectiveness increases.	The institutions involved in the inter-institutional coordinating committee believe that the new institutional model is consistent with the policies of each sector and that the cost-effectiveness projections clearly produce lower estimates of costs and increase the foreseeable effectiveness.	
	Ministry of Education reduces teacher training costs by 15%, the cost of providing high-quality educational materials appropriate for the cultural milieu decreases by 35%, and the cost of communicating with district, municipal, and local authorities decreases by 40%, while the number and relevance of communications increases.	Ministry of Education reduces teacher training costs by 50%, the cost of providing high-quality educational materials appropriate for the cultural milieu decreases by 75%, and the cost of communicating with district, municipal, and local authorities decreases by 75%, while the number and relevance of communications increases at least 100%.	
	HONDUTEL reduces the deficit in rural telecommunications alternatives in the geographical region by 20%.	HONDUTEL reduces the deficit in rural telecommunications alternatives in the geographical region by 50%.	
	ENEE fulfills its commitments to provide rural electric power at a (prorated) accelerated pace of 2 times the rate previously attainable.	ENEE fulfills its commitments to provide rural electric power at a (prorated) accelerated pace of 2.5 times the rate previously attainable.	
	The municipalities associated with the participating communities increase their capacity to define a local development plan by 25% owing to improved dissemination of topics of interest to the communities and coordination of	The municipalities associated with the participating communities increase their capacity to define a local development plan by 50% owing to improved dissemination of topics of interest to the communities and coordination of	

Purpose	At 12 months	At 22 months	Conditions
	development plans with budget and town council plans for upcoming fiscal years. Women's participation in decision-making increases by 50%.	development plans with budget and town council plans to obtain larger budgets in upcoming fiscal years.	
	50% of the microentrepreneurial associations and NGOs associated with local development issues have been familiarized with the project's objectives and the potential of the communities, and express their intention to adapt and improve their service to the 30 communities with approved subprojects.	75% of the microentrepreneurial associations and NGOs associated with local development issues have been familiarized with the project's objectives and the potential of the communities, and express their intention to adapt and improve their service to the 70 communities with approved subprojects.	
	The DCC (equivalent to an executing agency of the project) is applying the Operating Regulations appropriately, and with the support of the Digital Nations consortium a detailed plan is worked out for cooperation between universities, business owners, and involved members of the communities to develop content, along with a plan for tutoring students in mutual support networks ("learning hubs"), and a plan for identifying and coordinating issues relating to invention, research, and development. At least 25% of these plans must be implemented.	The DCC (equivalent to an executing agency of the project) is applying the Operating Regulations appropriately, and with the support of the Digital Nations consortium, is implementing 65% of the development plans relating to issues of educational content, information, and training, as well as the plans for invention, research, and development.	

### MIDTERM EVALUATION MATRIX, PROJECT LEVEL

Component	At 12 months	At 22 months
<p>Component 1.</p> <p>For financing technologies that facilitate national and market knowledge services</p>	<ol style="list-style-type: none"> <li>1. Promotion plan implemented, at least 200 local government officials and community leaders contacted.</li> <li>2. 30 CCCC's being implemented in the same number of other communities.</li> <li>3. Each CCCC <i>will be</i> equipped with: from 1-10 networked computers; 1 to 2 printers; audio-video, VHS, and fax. The CCCC <i>will also have</i> the appropriate furnishings and <i>will provide</i> telecommunications and Internet services.</li> </ol>	<ol style="list-style-type: none"> <li>1. Cost-effectiveness.</li> <li>2. The performance of the 30 CCCC's will be evaluated in terms of efficiency and effectiveness, and the most visited content.</li> <li>3. The quality of the content will be examined.</li> <li>4. The level of community participation, the teachers, and other individuals involved will be evaluated.</li> <li>5. Student performance will be evaluated.</li> <li>6. The added value and potential of the special assistance provided by Digital Nations will be evaluated.</li> <li>7. The training plan will be evaluated.</li> <li>8. At least 35 new technology packages in n CCCC's are approved and are at various stages of implementation.</li> </ol>
<p>Component 2.</p> <p>COHCIT institutional strengthening plan realized</p>	<ol style="list-style-type: none"> <li>1. Consulting services on science and technology policies in progress, 80% complete.</li> <li>2. Work plans, staff assigned, and schedule for specialized technical assistance from Digital Nations agreed on and proceeding at a pace consistent with the execution period of the project.</li> <li>3. Consulting services to prepare the national science and technology plan, 80% complete.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consulting services on science and technology policies completed and the final report is approved by COHCIT and the Bank.</li> <li>2. Consulting services for the national science and technology plan completed and the final report approved by COHCIT and the Bank.</li> </ol>

<p>ment 3.</p> <p>ring and evaluation system implemented.</p>	<ol style="list-style-type: none"> <li>1. The consulting firm has defined the baseline for the impact assessments, quantified the project's requirements, and designed the monitoring, control, and evaluation system; completion level: 50%.</li> <li>2. The external auditing firm, contracted to the satisfaction of the Bank, has presented its first report (audited statements) and the opinion is unqualified.</li> </ol>	<ol style="list-style-type: none"> <li>1. Monitoring and evaluation system implemented.</li> <li>2. The quality of the compiled information is checked and its usefulness when used for the project evaluation.</li> <li>3. The consulting firm prepares its second report and verifies the implementation of the recommendations made in the first audit.</li> </ol>
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These components are products or outputs that the project delivers or is intended to deliver, and are the responsibility of the executing agency. This is hypothetical, since it is not dependent on the Specialist. (Evaluation matrix components).



## PROCUREMENT PLAN

Component/Activity	Financing			Procurement method	Prequalification	Date
	IDB	Local C.	Total			
<b>Component 1 Financing of technologies that promote education and market knowledge services.</b>						
(2) Promotion and intermediation consulting	\$ 218.0	\$ 218.0	\$ 218.0	LCB	Short list	IV/2000
NGO technical support	\$ 180.0	\$ 0.0	\$ 180.0	ICB	Yes	I/2001
Hardware procurement (VSAT and solar panels)	\$1,900.0	\$ 0.0	\$1,900.0	S	No	IV/2000
Technical and operational services (various domestic operators, guards, etc.)	\$2,500.0	\$2,900.0	\$5,400.0	LCB	No	2.5 years
<b>Component 2. Institutional Strengthening.</b>						
Coordination (individual consultants)	\$315.0	\$ 31.0	\$346.0	LCB	Short lists	IV/2000
Consulting, DCC (individual consultants)	\$110.0	\$ 0.0	\$110.0	LCB	Short lists	IV/2000
Research and development (individual c.)	\$150.0	\$ 0.0	\$150.0	LCB	Short lists	I/2001
Monitoring and evaluation (consulting firm)	\$200.0	\$ 0.0	\$200.0	ICB	Yes	I/2001
External audit	\$ 60.0	\$ 0.0	\$ 60.0	LCB	Short lists	IV/2000
Digital Nations membership (COHCIT consortium member)	\$300.0	\$ 0.0	\$300.0	LCB Exception	List No	IV/2000 I/2001
Office furnishings and equipment	\$ 35.0	\$ 0.0	\$ 35.0	S	No	I/2001
Vehicles (2)	\$ 50.0	\$ 0.0	\$ 50.0	S	No	I/2001

Notes: I, II, III, and IV quarters. S = Shopping; LCB= Local Competitive Bidding; ICB = International Competitive Bidding

PROPOSED RESOLUTION

HONDURAS. LOAN \_\_\_\_/SF-HO TO THE REPUBLICA DE HONDURAS

Expanding Technological Capacities in Poor Communities

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the República de Honduras, as Borrower, for the purpose of granting it a financing to cooperate in the execution of a Project for Expanding Technological Capacities in Poor Communities. Such financing will be for the amount of up to US\$8,500,000, or its equivalent in other currencies, except that of Honduras, which are part of the resources of the Bank's Fund for Special Operations, and will be subject to the "Financial Terms and Conditions" and the "Special Contractual Conditions" of the Executive Summary of the Loan Proposal referred to in document PR- .