Summary of Recommendations

The following actions are recommended with respect to: universal access programs and funds; innovative strategies and practices for universal access projects; and new models for providing universal and role for Regulatel:

A. UNIVERSAL ACCESS PROGRAMS AND FUNDS

A.1 UNIVERSAL ACCESS POLICY, STRATEGY AND COORDINATION AMONG STAKEHOLDERS

- *The design of universal access fund programs should take into account the attributes of successful programs indicated in Box VI.4 (Attached)* [VI.3.6 a]

- *Active participation of all stakeholders in the development and operation of universal access programs and funds is critical to their success. It is therefore important that an open and ongoing dialogue be initiated and maintained among these stakeholders (the fund administrator, operators, manufacturers, the regulator, the policy makers, and state and local governments). Engagement of local activists especially those involved in initiatives at the community level should be encouraged. It is important that this dialogue not exclude the small rural operators and local manufacturers of equipment for rural applications.* [VI.3.6 a]
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- *Universal access projects which are initiated at the local community level by private citizens, community groups, local governments, small and local entrepreneurs and NGOs for the local population should be encouraged. Policy makers and fund administrators should learn from the experience of these projects and initiatives when they are developing broader scale programs.* [VI.3.6 a]
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A.2 GIVING FUND ADMINISTRATORS GREATER AUTONOMY TO DISBURSE FUNDS

- *Independent boards and commissions of universal access funds should be given greater autonomy to disburse funds without having to seek further ex ante project approvals from other government authorities. Projects receiving funding in this way would still be subject to reporting during construction and ex post auditing once the project has been implemented as is the case with other government funded project* [VI.3.6 b]

A.3 RESTRUCTURING UNIVERSAL ACCESS FUNDS TO PERMIT VENTURE ORIENTED FINANCING OF PROJECTS

- *A certain portion of the overall amount in universal access funds should be set aside for micro financing or venture oriented operations including the offering of loans, equity participation in projects and/or the implementing telecommunications company, grants or a combination of these. Application of funds out of this "micro financing" budget item should be subject to somewhat different criteria with respect to risk and have some provision for a certain number of failures and defaults.* [VI.3.6 c]

- *Ensure that staff of universal access funds are trained to evaluate such venture oriented entrepreneur driven project proposals and that the boards or commissions of these funds are able to take decisions on financing these projects based on the evaluation and recommendations of the fund staff.* [VI.3.6 c]

A.4 PROJECT DESIGN AND IMPLEMENTATION

- *Universal access projects should take into account the attributes of successful projects indicated in Box VI.5 (Attached)* [VI.3.6 d]

- *Performance indicators used in output based aid (OBA) schemes should be inspired by the ones indicated in Box VI.7 (Attached)* [VI.3.6 d]

A.5 PROJECT FOLLOW-UP AND THE TIMING OF SUBSIDY FLOWS

- *Universal access fund programs must have provisions for and adequate resources to supervise projects during both their implementation and operation phases. Fund administrators should ensure that there are no delays in paying out approved subsidies.* [VI.3.6 d]

- *Fund administrators and regulators should support the establishment of a centralized institutional framework for rural operators to obtain ongoing technical, management, procurement, and other assistance and support, following contract awards.* [VI.3.6 d]

A.6 OTHER FINANCING INITIATIVES

- *For rural connectivity projects governments and regulators should be prepared to assist in ensuring that the terms and conditions of contracts between satellite and other backbone operators, on the one hand, and operators of universal access projects, on the other, are clear, unambiguous and fully understood by all parties and that they are respected (with respect to quality of service, response times, and liabilities), that the prices they charge are cost based, that bandwidth sharing ratios are clearly specified and respected and that there is provision for compensation if these conditions are not met.* [VI.4.6]

- *Universal access fund administrators, regulators, national and local government officials, policy makers and large and small operators and service providers should be made aware of the large demand in rural areas of Latin America for combined telephone and Internet access. National universal access programs should build close relationships with community organizations and NGOs such as the International Institute for Communication and Development (IICD) to coordinate universal access projects and ensure that any potential overlap is avoided and that these community initiated projects can be rolled out quickly and without bureaucratic hindrances;* [VI.4.6]

- *Fund administrators, regulators and the larger, established operators in the country should consider supporting small community based projects by giving them independent technical and management advice and legal support for during project design, construction and especially during contract negotiations with service suppliers;* [VI.4.6]

- *Fund administrators should contemplate subsidizing the high cost of good quality satellite backbone capacity for such small community based projects if no other terrestrial alternatives are available or possible;* [VI.4.6]

- *Regulators, government officials and the industry should support the International Telecommunications Satellite Organization's (ITSO) Global Broadband Satellite Infrastructure (GBSI) initiative which, inter alia, addresses the high price of leasing satellite capacity and aims to create a global and open market for broadband equipment and services through the adoption of a universal technical standard for user terminals, the facilitation of effective access to the geostationary orbital and frequency spectrum resources and the creation of a minimal and pro-competitive regulatory environment;* [VI.4.6]

- *International cooperative and private satellite bandwidth aggregation and integration initiatives should be encouraged, supported and facilitated;* [VI.4.6]

- *For small, community based universal access projects it is important to take into account the points (lessons learned) listed in Section VI.4.5.* [VI.4.6]

A.7 THE ROLE OF REGULATEL

- *Regulatel should gather, analyze and disseminate best practices with respect to:*

  - *Policies, objectives and strategies pertaining to universal access programs and projects;*

  - *The application of universal access funds to venture oriented entrepreneur driven projects;*

  - *The application of bottom-up approaches for developing and initially vetting universal projects using the Ecuadorian FERUM and Salvadorian FINET models as a starting point for such evaluation;*

- *Disbursement of universal access funds, supervision and project follow-up in Regulatel member organizations;*

- *The most appropriate technology for universal access in Latin America including results of in situ trials and pilot projects*

- *The promotion and facilitation of demand-driven and small entrepreneur initiated universal access projects*

- *Special regulations and licencing conditions which should apply to rural operators including tariff regulations designed for the rural environment;*

- *Programs to assist small rural operators in the management, administration, financing and commercialization of their projects;*

- *New universal access models based on service, technology, financing, commercial and administrative innovations;*

- *Information on multilateral funding of universal access projects in the 19 member countries.* [VI.3.6f]

➢ *Regulatel should create and maintain a set of indicators based on international best practices in universal access fund programs which can help the 19 members measure the results obtained by their programs and to define objectives to be attained. The set of indicators would also help provide a more objective way of determining if universal access goals have been met. [The various indicators used in this research can serve as a starting point.]* [VI.3.6f]

➢ *Implement training, exchange and cooperation activities to actively promote and extend the concept of universal service funds being applied in part at least to funding venture oriented entrepreneur driven projects.* [VI.3.6f]

➢ *Regulatel can play an important role in this especially through its cooperation and annual summits organized with AHCIET* [VI.3.6f]

A.8 OPERATORS AND MANUFACTURERS

➢ *Policy makers and fund administrators should ensure that there is an open and continued dialogue between them and operators, service providers and manufacturers on plans and strategies for universal access programs and funds. Regulatel can play an important role in this especially through its cooperation and annual summits organized with AHCIET. It is important that this dialogue not exclude the small rural operators and local manufacturers of equipment for rural applications. Regulatel can also act as the clearing house for information multilateral funding of universal access projects in the 19 member countries.* [VI.6.2]

Box VI.4: Attributes of successful universal access programs and funds: BEST PRACTICES

Successful universal access programs and funds are characterized by:

- Clearly defined objectives, strategies and plans derived from public consultation with all stakeholders and which take into account the national ICT agenda (if there is one) and its role in the social and economic development of the country;
- Clear, solid and unambiguous legal and regulatory framework including strong provisions that prevent funds from being used for other purposes;
- Consistency among various pieces of legislation which concern universal access;
- Well defined role of the regulator and administrator of universal access fund programs;
- Clearly defined and transparent process and procedures for requesting and obtaining subsidies whether through a minimum subsidy auction or other method;
- Strong and continued political and administrative support
- An administrative and regulatory environment and fund structure which:
  - facilitates and actively promotes the deployment of new services and technologies including new fixed and mobile broadband technologies;
  - encourages the development and involvement of small, independent, decentralized, community based telecommunications companies and cooperatives;
  - encourages and facilitates the development of demand-driven, entrepreneur initiated projects;
- Flexibility to cater for changing circumstances including new technologies, services delivery methods and other developments;
- Clearly defined funding obligations with some flexibility to cater for changing circumstances but with any changes being subject to prior consultations with those most directly affected and with other stakeholders;
- Strong and effective leadership at both the policy and implementation levels and a high degree of autonomy for the fund administrator;
- Transparent and participative process of identifying projects and awarding of subsidies
- An effective mechanism for receiving and acting quickly on user complaints;
- Sustained but not excessive project supervision and follow up
- provision for pre-selection of bidders to ensure that only experienced operators and service providers can participate in bids;
- An efficient internal management characterized by minimal paper work, and an unencumbered decision making process;
- A method and formula for disbursing funds which will reduce the financial burden on operators receiving subsidies but not leave the administrator without adequate means to control the implementation and operation of each project;
- Provisions for asking for and receiving essential data needed by the fund administrator to control, follow up and plan projects.

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Box VI.5: Attributes of well designed universal access projects: BEST PRACTICES

Well designed universal access projects are ones which:

- take into account:
  - Basic project parameters such as availability of electricity, rights of way, local sensitivities, the ability of users to pay, etc;
  - Optimal backbone capacity requirements;
  - Other competing and/or complementary infrastructure projects
  - The potential impact of competing technologies
  - Particularities of the community and region to be served including its topography, economic activity, income, population density, local politics and other constraints.
  - The cost to rural operators of various local, state and federal taxes, licence, spectrum usage and other fees, performance bonds, missed target penalties, borrowing, reporting requirements and the transaction costs of administering the subsidies;
  - Operators' need for predictable cash flow;
  - The need for an optimum balance between public and private sector contributions and risk sharing.
- have clearly defined conditions and requirements imposed on operators and service providers including quality of service obligations (e.g. maximum number of rural stations that can be out of service at any one time; the maximum amount of time required to repair a station that is out of service;……) and a minimum set of qualification required for administrators of rural telephones, telecentres and rural telephone companies;
- allow operators/service providers complete freedom to choose any technology they wish to deploy so long as it meets quality of service, interference and type approval requirements;
- permit other non-subsidized services to be provided;
- contemplate providing one stop shopping for all service licences;
- have licence conditions with certain flexibility to cater for changing technologies and circumstances;
- have performance indicators which take into account the particular circumstances under which rural operators have to provide service;
- are accompanied by business plans which confirm their sustainability during the life of the project (Each project should be subject to a cost-benefit analysis to determine its benefit to the people who will be served)

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Box VI.7: Guidelines for performance indicators used in output based aid (OBA) schemes

Performance indicators for OBA schemes should:

- focus on the needs of users in rural and remote regions of Latin America, including when service should be available and when it does not need not be available, what charges should be applied and what means there are for people to pay;
- be quantifiable and calculated according to a clearly defied formula, which diminishes or eliminates any element of subjectivity;
- not be administratively and financially burdensome for the operator to gather and process;
- have penalties which are in proportion to the cost and inconveniences suffered by users;
  have indicators designed to encourage the operator to improve quality and invest; and take into account operational and maintenance difficulties and costs involved in or resulting from accessing, operating and maintaining some remote and difficult locations. They should, for example, recognize and make allowances for batteries which cannot be recharged until the sun returns and for very remote stations whose maintenance is very difficult and expensive.

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B. INNOVATIVE STRATEGIES AND PRACTICES FOR UNIVERSAL ACCESS PROJECTS

B.1 TRANSMISSION TECHNOLOGIES FOR LOCAL ACCESS

- *Policy makers and universal access fund administrators should support:*

  - *the deployment of and experimentation with local access networks using new wireless and wireline technologies including WiFi, WiMAX, SCPC DAMA and PLC;*

  - *the use of second and third generation mobile technologies (including those operating in the 450 MHz band) as a fast and cost-effective means to deliver not only voice telephone but also broadband service in rural areas*[1]*.*

  - *the deployment and uses of new broadband technologies, at least on a trial basis. If new developments warrant, a rapid shift in focus away from traditional narrowband and voice-only projects, toward full-service, high-capacity deployments might well be warranted.* [VII.2.6]

B.2 FINANCING INITIATIVES

Role of policy makers and fund administrators

- *Develop and incorporate a venture oriented financing mechanism into their universal access funds under which a portion can be used for making loans, taking equity participation in projects and/or implementing telecommunications companies, offering grants or a combination of these.* [VII.3.4]

- *Familiarize themselves with the various sources of financing which are possible and suitable for universal access projects and be prepared to help small entrepreneurs establish contacts with these various sources and, where possible, support rural operators to obtain bank guarantees and financing for their projects.* [VII.3.4]

Role of Regulatel

- *Develop a model for Regulatel members to determine the feasibility of creating public access facilities which piggy back on private commercial networks such as those of banks or transport companies. In developing this model the following should be determined: (i) the types of non-core ICT services which could be provided by such private networks and the extra costs and resources which would be required to establish and operate these non core services; (ii) any regulatory and administrative impediments to such arrangements as well as typical prices,*

[1] There might be less need to subsidize cellular network rollouts, where overall returns to these investments make rural deployments profitable in any event. Conditions of the licences should focus principally on ensuring that network coverage leads to practical public access wherever possible.

which would be charged to the public for these non-core services (iii) what, if any, subsidies might be required and (iv) to what other national industries this concept could be applied. [VII.3.4]

- *Establish contact with the Enablis Enterpreneurial Network to explore ways with them of establishing this financing initiative in Latin America and support it in this undertaking.* [VII.3.4]

B.3 BUSINESS PRACTICES, COMMERCIAL, SERVICE DELIVERY AND PARTNERSHIP INNOVATIONS

- *Policy makers and universal access fund administrators should:*

  - *Encourage and if necessary help local entrepreneurs adopt innovative business, administrative, marketing, service delivery, and procurement practices for their universal access projects. The examples, case studies and pilot projects described in this report and especially in Chapter VII and Annex 3 can serve as a starting point for such practices which can be replicated or adapted if necessary for the particular circumstance. Universal access fund managers should develop information dissemination programs on such practices.* [VII.4.9]

  - *Make government procurement agencies aware of the impacts that their purchase decisions can have upon the emergence and expansion of market competition in markets as diverse as telephone services and equipment, computer hardware and software, and technical support services. The development of public service content, such as Web sites, audio-visual training materials, educational software, and the like, should also ideally be linked to the enhancement of domestic businesses and employment in those fields, for example, through targeted outsourcing rather than in-house development. Government procurement rules should be adjusted accordingly.* [VII.4.9]

- *Regulatel should create a repository of such innovative business, administrative, marketing, service delivery, and procurement practices for universal access projects. [The examples in this report can serve as a starting point for this]* [VII.4.9]

B.4 REGULATORY POLICIES AND STRATEGIES FOR UNIVERSAL ACCESS

- *Policy makers and universal access fund administrators should:*

  - *review **spectrum use policies** related to licence free spectrum especially for rural applications to facilitate the deployment of technologies that use these frequencies for universal access projects;*

  - *remove burdensome restrictions or prohibitions on **VoIP-based networks and applications** and instead encourage their deployment and use as a cost-effective means to expand affordable access especially for rural and*

unserved area applications. Promoters of universal access projects should be encouraged to incorporate VoIP technologies into their projects;

- *adapt **asymmetrical rules and regulations** pertaining to telecommunications services provided in rural and underserved areas along the lines of those indicated in Box VII.3; (Attached)*

- *implement a **simple, pro competitive licencing regime** which encourages and facilitates the establishment of smaller, independent telephone operations in rural communities and underserved areas, especially where incumbent operators may have chosen not to build networks and provide services. [Subsidies should, where possible, be available to support such operators, if they have the technical, management, and operational capabilities to deliver telecommunications services cost-effectively to their communities. Support should not be limited to the technical aspects of the project but also should be available to assist in the management, administration and commercial aspects of these undertakings.]*

- *implement and enforce regulations with respect to maximum permissible delays in signing of **interconnection agreements**;*

- *introduce greater flexibility in **quality of service and other standards** pertaining to networks and services in rural and underserved areas where this will either not cause any harm to the network or where the impacts are minimal if stricter standards are an impediment to investment and development of rural networks and services.*

- *Introduce regulations and promote and facilitate **infrastructure and facilities sharing** including the use of rights-of-way not only among telecommunications operators but also with other public service (electricity transmission and distribution, pipeline companies, public works ministries, railways, etc.) companies and operators* [VII.5.8]

➢ *Regulatel should:*

- *gather, analyze and disseminate best practices with respect to asymmetric interconnection rates and tariffs for rural operators to help its members develop policies, costing methodologies (that can include benchmarks), guidelines for termination charges and tariffs, along with model regulations and interconnection agreements for use in rural applications. Regulatel should also develop a data base of information (rates, costs, regulations, interconnection agreements, etc for rural areas.) of its members..* [VII.5.8]

- *gather, analyze and disseminate and where appropriate and maintain up to date a data base of its members' universal access regulations and policies including spectrum use policies (use of licence exempt frequencies; use of the 450 MHz band, etc.). VoIP, licencing, quality of service and other standards for rural operators, and facilities and infrastructure sharing. Appendix 2 of this report which summarizes regulatory provisions related to*

these should serve as a starting point for establishing such a data base. [VII.5.8]

Box VII.3: Asymmetrical rules and regulations for universal access projects

Consideration should be given to making rules and regulations pertaining to universal access projects in rural and underserved areas better adapted to the needs and circumstances of rural operators.

a. General

- be more flexible with respect to coverage obligations for rural operators and/or operators providing service in rural areas;
- reflect the needs and particularities of rural and underserved areas with respect to spectrum assignments, fees, and conditions of use. For example, they should take in account that the potential of interference in rural areas may not be the same as in urban areas;
- ensure that effective and timely regulator support is given to small rural operators in interconnection negotiations.

b. Quality of service requirements

- permit refurbished equipment to be installed in universal access projects when an acceptable quality of service can be guaranteed;
- take into account that it may not be always possible to guarantee the same quality of service in rural (especially very remote) as in urban areas;

c. Tariffs and interconnection charges

- given that generally (i) incremental costs (common and opportunity costs) of rural terminations are higher than urban terminations and (ii) there is more traffic flowing to rural and underserved areas than in the opposite direction, implement arrangements which should include one or a combination of the following:
    - a special price cap scheme which takes into account these asymmetries;
    - higher termination charges for rural terminations;
    - a calling party pays (CPP) arrangement with the originating operator's tariffs regulated to prevent it from setting them so high that it will discourage calls to rural telephones;
    - allow operators to charge more for calls to a rural telephone than to a local number but require them to identify such calls by a special prefix similar to a long distance call or a call to a mobile telephone so that the caller knows that he/she will have to pay more to make the call.

d. Dial-up Internet access

- allow and promote the implementation of flat rate fixed telephone pricing schemes, if this does not already exist.

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C. NEW MODELS FOR PROVIDING UNIVERSAL AND ROLE FOR REGULATEL

C.1 NEW MODELS FOR UNIVERSAL ACCESS PROJECTS IN LATIN AMERICA (Role for Regulatel)

- *A platform should be developed typically under the leadership and coordination of Regulatel to facilitate the dissemination of information on various universal access projects and especially those which result from demand driven initiatives and involving small entrepreneurs, suppliers and operators. [The models and project pilots presented in this report, especially I Chapter VII and Annex 3 should serve as a starting point for building such a platform.] This platform would also facilitate contact being established among these various stakeholders and links to technical, financial and other support mechanisms highlighted in this study.* [VII.7.10]

C.2 Telecentres

- *Telecentres should remain an important component of rural access programs, as they can deliver broad-based access to a range of information resources, technologies and other services to people especially in rural, remote and underserved areas of Latin America. Projects to implement telecentres should focus on sustainability and community involvement from the outset, and emphasize training and locally relevant information content, as well as financial and technical aspects. The Red Cientifica Peruana (RCP) initiative of providing specifications and other information on the requirements for establishing of a telecentre and follow up technical support should be emulated as should the business and commercial practices of the Hungarian Teleház. The four key success factors in Box VII. 1 (Attached) should be taken into account in designing and implementing telecentre programs as should the lessons learned from the Dominican Republic's LINCOS program, Brazil's GESAC Program, the State of Sao Paulo's Acessa Program, Uruguay's CASI and CASIL programs, Cuba's Joven Club de Computación, Venezuela's Puntos de Acceso and CBIT initiatives and the City of Pirai's Digital Project should also be taken into account. (Annex 4)* [VII.7.10]

Box VIII.1 Four key success factors in ensuring the viability of a telecentre[2]

1. The availability of interactive services including voice, e-mail, chat and possibly SMS and videoconferencing. Especially important is the availability of VoIP which helps make voice communications accessible to poorer people. In Peru 33% of all persons using services at the commercial cabinas publicas use VoIP (40% of people from the two lowest socioeconomic strata).

2. Leadership and local management. Strong dynamic leadership and management from either private entrepreneurs or local governments, associations or NGOs have helped ensure the success and sustainability of telecenters;

3. The density of users in the vicinity of the center who know how to use the computer and the Internet; i.e. who have a minimum level of digital literacy. The nearby density of the digital literate population determines the potential market of the telecenter and the chances that the telecentres will be used often and survive economically.

4. Good quality connectivity to the Internet at a reasonable price.

[2] Francisco Proenza, "Ecuador: Hacia una estrategia de uso y aplicación de Tecnologías de Información y Comunicaciones (TICs) al servicio del desarrollo local", 4º Informe de la Serie Apoyo a la inversión en el desarrollo de tecnologías de información y comunicación para combatir la pobreza rural en América Latina y el Caribe Centro de Inversiones de FAO Roma 8 de febrero 2006