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**ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC**

**Report of the Expert Group Meeting on Government Policies and  
Strategies on Information and Communication Technology for  
Rural Poverty Reduction in Asia and the Pacific Region**

**Bangkok, 27-28 November 2003**

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## TABLE OF CONTENTS

	Page
I. INTRODUCTION AND BACKGROUND .....	1
A. Introduction .....	1
B. Organization of the meeting .....	1
C. Preamble .....	1
II. SUMMARY AND RECOMMENDATIONS.....	3
III. POLICIES AND STRATEGIES FOR GOVERNMENT.....	7
A. Policy; coherent, comprehensive and crosscutting .....	7
B. The need for a framework.....	7
C. Community ownership and engagement.....	7
D. Community issues and capabilities.....	8
E. Content and applications; relevant and effective .....	9
F. Partnerships (win-win).....	10
G. Sustainability; the broad view.....	12
H. Funding .....	12
I. Regulation .....	13
J. Standards and models .....	13
K. Technology; range, affordability .....	13
L. Evaluation .....	14
M. Sharing and exchange.....	15
IV. EXPERT GROUP CONTRIBUTIONS.....	16
A. Policy implementation in Nepal .....	16
B. Wireless rural networks in Bangladesh .....	16
C. Policies for telecommunications.....	17
D. Grass roots experiences in Viet Nam.....	19
E. Pilot projects in Malaysia .....	19
F. Policy making in Sri Lanka .....	20
G. Public access in Indonesia .....	21
H. Pilots and policy in the Philippines.....	22
I. ICT4RD: The NGO experience in India.....	23
J. ICT policy advice across Asia from UNDP.....	24
K. Serving the un-served in Thailand.....	25
L. Serving the un-served in India.....	25
M. ICT development for poverty reduction in Cambodia.....	26
Annex I: List of participants .....	28

## **I. INTRODUCTION AND BACKGROUND**

### **A. Introduction**

1. This report presents the proceedings and findings of the Expert Group Meeting (EGM) on Government Policies and Strategies on Information and Communication Technology (ICT) for Rural Poverty Reduction in Asia and the Pacific Region, held in Bangkok, Thailand on 27-28 November 2003. It follows on from the Report of The Ad Hoc Expert Group Meeting on ICTs for Rural Poverty Reduction: Developing National ICT Policies, also held in Bangkok, on 28-29 January 2003. The November meeting was to review and critically analyse the conclusions and recommendations of the January meeting as well as the Group's experiences with ICTs in rural development and poverty reduction. Its purpose was to develop a set of policy guidelines for operationalizing ICTs in rural poverty reduction and to formulate recommendations for the role of international organizations, especially ESCAP, in promoting the use of ICTs in rural poverty reduction. This report was drafted by Roger Harris.

### **B. Organization of the meeting**

2. The meeting was organised into three sections; firstly, expert participants gave presentations of their involvement in activities relating to the use of ICTs for poverty reduction, starting with an overview of the findings arising from the previous meeting held in January 2003. Secondly, the group was facilitated towards agreeing a list of the most important issues that they felt ESCAP should address in their forthcoming activities in this area. Finally, an overall discussion, which included ESCAP officials, clarified the meanings of the outcome and their relationship to the Group's remit.

### **C. Preamble**

3. One of the reasons for the disappointingly low spread of rural tele-density is the absence of a framework of policies and guidelines and a clear definition of tasks and responsibilities for different "players". Country studies conducted by ESCAP in India, Malaysia and Thailand have indicated that government participation was critical for creating an enabling environment for ICT expansion into rural areas and adoption by rural communities. It is widely recognized that in addition to private sector initiative and support, government leadership and a firm national ICT policy putting poverty reduction at its centre is a pre-condition for successful expansion of ICT into poor areas. Moreover, government representatives participating in related ESCAP meetings have pointed out the lack of specific guidelines for governments to develop national ICT strategies for the rural poor.

4. The EGM acknowledged the role that information, and the knowledge that can be derived from its use, can have in reducing poverty in its widest sense, but also that information is but one of the many contributory resources that interact in a complex process. Whilst the EGM regarded poverty as more than the lack of material possessions; encompassing universal aspects of helplessness, voicelessness, and marginalization, it

also acknowledged that ICT-based solutions to poverty alleviation constitute a range of approaches and practices of which some are more or less generally applicable whilst others are specific to their context. Accordingly, it was felt that a vital requirement is an awareness of the areas where successful practices can be transplanted from one location to another relatively intact and conversely, where they have to be home grown in response to local realities.

5. The EGM further appreciated that ESCAP's sphere of activity shapes the actions it is able to undertake; imparting particular strengths in certain areas relating to the use of ICTs for poverty reduction, but at the same time constraining it necessarily in other areas. Accordingly, the group's deliberations focussed on the areas that would yield most fittingly to ESCAP's role; as an agent that convenes government-level interactions, promotes regional cooperation, facilitates the sharing of experiences, advocates good practices, and all with the inclusion as appropriate of the private sector and civil society.

## II. SUMMARY AND RECOMMENDATIONS

6. The EGM noted that the complexity of the web of causes and consequences of poverty, in conjunction with a range of country, regional and local contextual and social variations in which it is found, indicates that poverty reduction with ICTs does not lend itself to blueprint solutions. Nevertheless, there are certain common characteristics within existing poverty reduction initiatives using ICTs that point to the beginnings of a code of good practices.

7. Accordingly, whilst the meeting was able to define a number of tried and tested practices that have demonstrated positive results; the overriding need is for the sharing of knowledge among policy makers, advisers and practitioners that will enable them to develop effective approaches to the application of ICTs to poverty reduction that are locally relevant. For that reason, the EGM advises ESCAP to carry out nine types of activities. The EGM converged to these nine activities applying the Nominal Group Technique. It should be emphasised that the Group considers all these items important for applying ICTs to poverty reduction, but that a prioritised lists make for a more manageable and focussed response when, as always, resources are limited.

- Promote Knowledge sharing
- Promote Policy-Making for Poverty Reduction
- Assist in Building Trust and Partnerships
- Facilitate Developing Local Content in Local Languages
- Promote Sustainability
- Develop and Promote Innovative Models and Frameworks
- Sponsor Specific Regulatory Policy
- Assist in Strengthening Community Capacity
- Promote Appropriate Technology

### **Priority 1. Promote knowledge sharing**

- Promote multi-stakeholder regional cooperation.
- Conduct research that generates the new knowledge required for the advancement of ICTs for poverty reduction.
- Evaluate the outcomes of activities that use ICTs for poverty reduction, and generating stories that illuminate both successes and apparent failures.
- Highlight practices that are not able to bring tangible outcomes to rural and poor communities, and that harm endeavours to reduce poverty with ICTs.
- Document statistics that relate to the information age and draw attention to the exclusion of the vast majority, especially the poor.
- Create clusters of synergy around activities, local and international, that contribute to each other's advancement, including both practitioner projects and donor funding.
- Promote investment in the physical ICT infrastructure by governments and donor agencies.
- Establish a web portal for networking by practitioners.

- Identify, endorse and sponsor support activities that are non-ICT related but which nevertheless contribute significantly to the use of ICTs for poverty reduction.
- Identify, endorse and sponsor poverty reduction activities that lend themselves to the use of ICTs for poverty reduction.
- Promote knowledge networking at regional, national, and village levels.

**Priority 2. Encourage policy-making for poverty reduction**

- Encourage the incorporation of ICTs into poverty reduction strategies.
- Insist on a supportive regulatory framework.
- Prevent the appropriation of ICTs by existing elites, to the exclusion of the poor.
- Influence policy makers towards greater awareness of the potential for ICTs for poverty reduction as well as the formulation of coherent and coordinated policies.
- Advise governments as to how, specifically, ICTs can reduce poverty, emphasising aspects of policy, strategy and the identification of indicators.
- Assist in mainstreaming ICTs into rural poverty reduction policies and strategies.
- Recognise and promote the need for a variety of knowledge inputs into poverty reduction policy making.
- Adopt suitable communication strategies for the effective dissemination of knowledge and advise to government policy-making organs.
- Ensure issues of gender equity are properly incorporated into policies that apply ICTs to poverty reduction.
- Support policies and strategies for poverty reduction that can effectively utilise the capabilities of ICTs.
- Promote effective leadership in the development and implementation of policy that applies ICTs to poverty reduction.
- Establish ICTs as a cross-cutting issue in all areas of poverty reduction, ensuring complementarity between them.

**Priority 3. Assist in building trust and partnerships**

- Ensure the inclusion and effective participation of all relevant stakeholders.
- Develop opportunities for e-governance that foster trust between governments and citizens by incorporating principles of accountability and transparency.
- Learn how to apply and promote ICTs to conflict resolution.
- Encourage the formulation of partnerships between communities, private bodies and governments.
- Promote local level linkages with academia, for example, with multi-disciplinary courses and universities acting as extension agents.
- Persuade authorities to trust local organisations and communities in such areas as the development and application of local languages, the distribution of government information, and community broadcasts via radio and television.

**Priority 4. Facilitate developing local content in local languages**

- Promote local language ICT capability development and representation.
- Identify and promote the uses of ICT that are most relevant for the poor.

- Encourage the growth of ICT literacy, at the same time as local content and language development.
- Support the adoption of ICTs for reducing poverty among landless, stateless and marginalized people.
- Foster development partnerships between community-friendly agencies within government and the NGO community.
- Assist local traditional media institutions to migrate to web based platforms
- Promote ICT skills and English language skills that are required for full exploitation of the Internet.

**Priority 5. Promote sustainability**

- Develop and advance models for sustainable multipurpose rural telecentres.
- Advise on the role and level of investment of villages such that the ICTs that they receive will remain sustainable.
- Advise on policies and practices for financing ICT for development, including the participation of venture capitalists and banks.
- Publicise sustainability models in ICTs for rural development, under the areas of; accessibility, affordability and availability.
- Elevate awareness of the importance of education for poverty reduction, and that on-line education can be an important driver for the deployment of ICTs to the poor.
- Re-define traditional models of sustainability, integrating business imperatives with investment in social capital.

**Priority 6. Develop and promote innovative models and frameworks**

- Create converged and integrated socio-economic and business models within generic poverty reduction practices for using ICTs in a sustainable manner.
- Encourage the adoption of ICTs for poverty reduction through business models.
- Establish programmes for using ICTs to reduce poverty that are focused on the problems specific to particular eco-regions; mountains, arid and semi-arid areas, coastal communities, rainforest dwellers.
- Prepare and promote scalability maps that explain how to translate small-scale pilots into nation-wide programmes.
- Create and disseminate innovative models of funding and social entrepreneurship that allow agencies to break out of the traditional and restrictive approaches to self-financing and sustainability.
- Encourage governments to tolerate the contribution available from the informal sector in deploying ICTs for poverty reduction.

**Priority 7. Sponsor specific regulatory policy**

- Support wider freedom of Voice over Internet Protocol (VoIP) and other voice compression techniques for public use, especially for rural areas.
- Support a more liberal regulatory environment for outdoor wireless local area networks in rural areas.
- Strengthen national regulatory institutions towards a more liberal environment conducive to rural telecommunications.

**Priority 8. Assist in strengthening community capacity**

- Support the empowerment of children as agents of change.
- Encourage the building of capacity for the formulation of pro-poor community development agendas that incorporate ICTs.
- Establish a knowledge base concerning the use of ICTs at village level, as a means of promoting to villagers and others that ICTs can have a role in rural poverty reduction.
- Advocate the empowerment of communities so that they are able to apply ICTs to the problems that they themselves have articulated.
- Ensure there is a family oriented focus to rural ICTs, which includes gender and child perspectives.
- Promote the role of women as agents of change, not merely as recipients of ICTs benefits but also as active mediators in their delivery.

**Priority 9. Promote appropriate technology**

- Support Internet peering regionally. Peering is the arrangement of traffic exchange between Internet service providers (ISPs). Larger ISPs with their own backbone networks agree to allow traffic from other large ISPs in exchange for traffic on their backbones. They also exchange traffic with smaller ISPs so that they can reach regional end points.
- Promote Open Source software; encourage the sharing of software code, software applications, and procedures for ICT related software development for poverty alleviation. Encourage the distribution of open source software, public domain software and content for community development projects among developing countries.
- Support local font development.
- Promote deployment of satellite VSAT (Very Small Aperture Terminal) technology. Promote deployment of wireless and non-terrestrial last mile (VSAT, Satellite Phone, DVB Broadcasting etc.) for rural telecommunications development.
- Facilitate development and adoption of affordable and innovative connectivity options for rural communities.
- Support provision of electricity to rural communities, including the provision of low-cost non-conventional models of power supply, e.g. solar and micro hydro systems.
- Explore and promote the complementarity of different technologies, e.g., computers, touch screens, telephones, loudspeakers, even motor bicycles as communication devices.
- Encourage practical rather than esoteric approaches to technology adoption.

### III. POLICIES AND STRATEGIES FOR GOVERNMENT

8. The proceedings of the EGM included presentations by experts, which revealed several common threads within the overall theme of the topic. These are as follows:

#### **A. Policy; coherent, comprehensive and crosscutting**

9. Governments should put the public interest first, and should adopt a global outlook rather than being too focused on targeted communities. They should correct the erroneous view of policymakers and politicians that ICTs are primarily export earners, but that they can also be used effectively as tools capable of helping the rural poor. Policies should foster new models of social innovation so that ICTs can create new opportunities. An inventory of rural telecentre-related projects would feed learning into policy-making, thereby matching ground level knowledge with policy-making activities. Moreover, positioning – knowing who to call and who’s in-charge – is a vital indicator of commitment. The crosscutting nature of development with ICTs, affecting most aspects of poverty, from disaster relief to enterprise development, compels collaborative efforts among institutions that are commonly stovepiped within their own domain. High-level cross linkages are essential to achieve the necessary lateralization of policy formulation that leads to a holistic approach to poverty reduction.

10. Policy advocacy activities should be conducted to inform policymakers of project results, and there is a need for project champions to adopt this role. ICTs need to be mainstreamed into national policy reduction programmes, which take time, but there are many opportunities to do so, such as at conferences and in speeches. Moreover, there is now a pressing need for a guide to good replication so that pilot projects can be readily transformed into national programmes and can be used to help implementers move away from being in the “forever pilot” syndrome.

#### **B. The need for a framework**

11. Governments need to understand the web of poverty; the framework of causes and consequences within which poverty is located, and to increase their awareness of where ICTs can play a positive role within this wider framework. The role that ICTs will play within the framework should be based on innovative models of constructing social capital; just as ICTs have given rise to new business models, development for poverty reduction should re-think traditional approaches that are no longer relevant to an ICT-enabled environment. There is ample space still for experimentation and brainstorming, and in this regard, there are no failures, only our own when we do not learn from the outcomes.

#### **C. Community ownership and engagement**

12. Rural life in Asia-Pacific is overwhelmingly community life, and it is beset by communal poverty. But who are the poorest and who can benefit most from ICTs? Key stakeholders include youth and women, but there is considerable evidence suggesting that they are not only passive recipients of the benefits that emerge from ICTs but are often

active agents in the delivery of ICT's benefits to others. As it is the social dynamics of communities that determine the respective roles of key stakeholders and actors in the value chain of information-knowledge-development, then there needs to be a mechanism capable of harnessing the characteristics of communities that lend themselves to the propagation of information-based development opportunities. It is not sufficient to identify the stakeholders alone, but it is also essential to understand what their stake actually is; whether as beneficiary, collaborator, activist, champion, or, more likely, simultaneously some or all of these.

13. Participatory approaches are mandated. Participatory Action Research, if conducted honestly, allows for genuine and equal partnerships with communities, an emphasis on local learning and action with eventual transfer of ownership and a truly bottom up source of knowledge that is thoroughly grounded in reality. Participatory Research Appraisal can be used to cluster prototypes into national or regional forums where stakeholders, especially poor people, can share experiences with each other, single out what works from what doesn't and confront policy-makers face-to-face with their requirements. Sometimes a sense of timidity among poor people prevents them from voicing their opinions (but sometimes not) so project promoters need to identify poor champions of the poor who are willing to demonstrate how they have benefited from ICTs and how others might do likewise.

14. Experience with a pilot rural ICT project in Nepal indicates that outcomes are more desirable when the recipient community demonstrates in a tangible manner that it wants to have a telecentre, for instance by contributing its own resources towards establishing and operating it. Ideally, there should already be community-based organizations in place that can mobilise people towards development activities that involve the use of ICTs. The community should be prepared to invest their own resources in such items as access to a telephone line, accommodation, equipment, staff and supplies. This will help to instil a sense of ownership of the facilities by the community, and hence an appreciation of their value. Services that are charged for are usually more valued than those that are free, and they induce a client-oriented service mentality within facility operators that carries in-built incentives for quality assurance, as well as sustainability based on self-financing.

#### **D. Community issues and capabilities**

15. Further to ownership and engagement, the social role of women comes into sharp focus when community ICTs are set up. Not only are women instrumental in actualising the benefits that ICTs can deliver, in terms of better access to education and health care for the family for example, but also there is strong evidence suggesting that women can be effective as agents of change within communities, capable of catalysing fundamental shifts in traditional patterns of behaviour that would otherwise militate against community appropriation of the technology and its attendant benefits.

16. Another area in which ICTs are sometimes offered as reinforcement is conflict resolution. For example, peace-building is an overt objective of the e-Sri Lanka programme, although it is not yet exactly clear how this will work, but development in

Nepal has been criticised for not addressing the causes of conflict, whilst simultaneously expressing the aims of rural development that are more-or-less the same as those stated by the insurgents. Quite how rural ICTs can contribute to conflict resolution, rather than setting up targets for insurgents and guerrillas, has still to be clarified, but whilst aims remain the same, and only the means for achieving them differs, it would seem there is some scope for creativity on all sides of otherwise intransigent conflicts.

17. Some of the more visible gains that recent rural development and poverty reduction efforts have made emphasise the latent capacity and capabilities to be found within poor communities themselves. Micro-finance and social mobilisation programmes have demonstrated that with a little guidance poor communities can marshal resources, both internal and external, that are considerable within their context, and which are capable of generating significant improvement in their lives. Rural ICT promoters should not overlook this; indeed they should plan around it, build on it and integrate the power of ICTs into community capabilities, not only those that are already evident, but also any latent capacity that can be cultivated and nurtured toward desirable outcomes with ICT-based development. A good starting point is an inventory of existing capability, including that which is latent or dormant.

18. Once latent capacity is discovered, turning it into a current asset requires a sensitive approach; one that acknowledges existing realities. Illiteracy does not equate with inability, unwillingness to learn, stupidity or lack of motivation. Often, on the contrary, when the time is taken to understand local realities, and change agents show proper respect towards their clients, then it can be discovered that illiterate people, often heads of households with considerable responsibilities, can be taught new knowledge that is useful to their livelihoods and which does not require them to learn how to read and write. ICTs can play a massively enabling role in such a process; innovative forms of student-lecturer interaction can overcome the obstacles that illiteracy presents and respected institutions can issue diplomas to farmers and artisans who possess considerable skills that can be effectively enhanced without their having to struggle with the acquisition of literacy. Pre-requisite is an unusual combination of facilitating skills on behalf of development agents; combining knowledge of the learners' abilities and the development opportunities open to them, with that of contemporary teaching-learning paradigms as well as the capability and limitations of the technology. However, once all these aspects are encapsulated within a technology-based facility, such as a virtual university for rural development, then replication becomes relatively straightforward.

#### **E. Content and applications; relevant and effective**

19. It is easy to understand that benefits emerge directly from the value of the content rather than from the capability of the technology. Sometimes there is a tendency to seek the 'killer application' that will justify the provision of ICTs to rural communities. It's an attractive notion to technologists as it simplifies decision-making and removes the need to engage with the softer and less tractable side of development; getting to know poor people. There are even a number of candidate applications; the distribution of market prices is a forerunner in the field, as it seems to be universally attractive to farmers. But the benefits to be derived from single applications are unlikely to justify the relatively

huge opportunity cost of setting up ICT facilities in rural and remote locations. Generic content may offer a useful starting point, but ultimately the needs of individual communities will have to be catered for, if not for the fundamental reason that they are inextricably interwoven with, and provide the foundation for, issues of sustainability.

20. E-governance, or e-government<sup>1</sup>, is often touted as a winner, but close examination of the examples reveals few tangible and mostly trivial benefits to poor people, low levels of technology adoption by governments and benefits that are more often claimed than realised. However, there are for example, some highly effective applications of ICTs for disaster relief and land registration, suggesting that a more focussed approach to ICT-based government-citizenry interactions could yield impressive returns. Results from e-commerce initiatives that have targeted increased income for poor rural people have been mixed, although there does seem to be promise from applications that are linked to other development initiatives, such as micro-financing, e-marketing, pro-poor trade arrangements, or tourism. Eco-tourism has been found to be more effective in terms of environmental protection where local communities are included in the plans. Village based tourism increases the share of tourism receipts that poor people receive and can be promoted via ICTs.

21. Other options acknowledge the irrelevance of distance and geography, for example, where call centres serving rich-country clients are located in poor countries with appropriate manpower in order to exploit the economies that can be realised. Poor computer users in developing countries can also take over the large volumes of keyboard work that digitisation of existing material often requires. Rural communities with appropriate skills can participate in such ventures, probably adding further to the cost savings that can occur.

22. Perhaps the strongest case to be made for the application of ICTs to the needs of poor rural people is in the spread of knowledge. The link between information, knowledge and development has been well articulated, even among the poor themselves, such that better education opportunities seem to be universally welcomed. But education for poverty reduction implies adult education and in order to deliver this it is necessary to re-think the traditional role of education institutions. For instance, if literacy is a problem, can ICTs be used to deliver relevant learning that doesn't depend on literacy? If poverty reduction requires practical, vocational, knowledge, can educational certification (diplomas and the like) be extended to account for them? ICTs facilitate open and distance learning and can be used to bring about new approaches to education that accommodate learners' needs in terms of the subjects they need to understand and the conditions and environment of their learning experiences.

23. Relevance in education not only implies the right subjects and the right delivery bit also the right language. Whilst schools in many countries appreciate the English language learning opportunities that access to the English-dominated Internet provides, this will have little meaning for adult learners who have no interest in language skills.

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<sup>1</sup> As there are multiple, sometimes contradictory, definitions of these terms, their exact meaning is not discussed here.

Accordingly, there is a need for a massive increase in ICT capability in local languages; the ability to represent multiple scripts and fonts and the development of locally relevant material in local languages. What has to be provided is what locals will need and appreciate, not what outsiders would need if they were living where local people live.

#### **F. Partnerships (win-win)**

24. A key question for those seeking poverty reduction with ICTs is “who should be involved?” The crosscutting nature of ICTs challenges the stovepipe organisations of both governments and development agencies alike. The insistence of organisations on employment practices that are based on nineteenth century principles of division of labour; with individuals specialising in topic areas such as agriculture, human resources, computing and so on, principles that have been consistently denounced by research throughout the twentieth century, belies the essential characteristics of ICTs; that they are capable of enhancing multiple walks of life, and that the ceiling of that capability has yet to be met. The multiplicity of application areas seems to confuse rather than enhance efforts to implement them, as agencies find difficulty in assigning responsibility, organised as they are according to their own convenience rather than to the nature of the task in hand. This is why local governments usually have such a key role to play, as in many instances they are the only organisations that can take a holistic perspective of local issues and at the same time possess a mandate as well as the means to act on it.

25. At policymaking and policy advisory level, the assignment of responsibility is much less clear. Few governments have a Ministry of Poverty Reduction, although many in Asia have ministries of rural development or agriculture, and all have them for health and education. Yet many also have incumbent authorities with portfolios that cover telecommunications, science and technology, in one form or another, and the only practical point of convergence lies at or near the head of state. Accordingly, positioning of ministerial responsibility for ICTs and poverty inevitably requires co-ordination at high levels in order to be capable of inducing effective outcomes, but this necessarily delivers it into the hands of the politicians, which has uncertain side-effects.

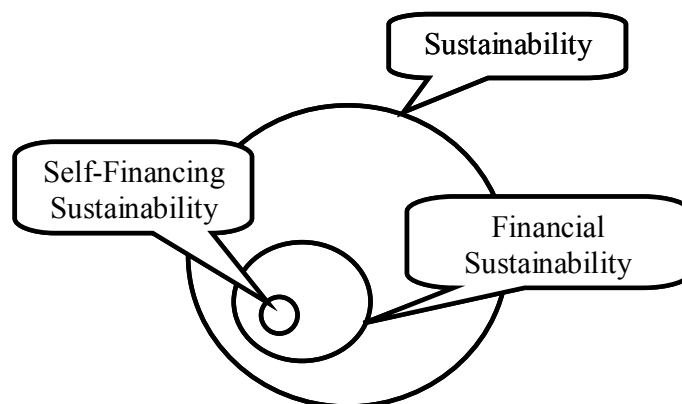
26. On the other hand, experimentation indicates the value of bottom-up approaches that bring together multiple partners and stakeholders at local levels in situations where they are able to adapt to local circumstances, undertake multiple tasks as situations arise and generally exploit human capacities to the fullest of their abilities to contribute to desirable outcomes, instead of confining them to topic areas whose relevance ebbs and flows according to circumstances. Nevertheless, if institutions can assume some of the adaptability of their local counterparts, and join together with them in smart partnerships where multiple stakeholders complement each other’s strengths, then useful outcomes can emerge. Special interest groups that represent areas and communities with comparable needs can draw strength from consolidating issues that might be marginal at the national level; for example, mountain areas, semi-arid and arid areas, islands, coastal areas, ethnic minorities. Such groups exist in many countries in Asia-Pacific yet their specific development needs for ICTs receive comparatively little attention.

27. Funding is always a major concern, which continues to intensify the ideological tension between those who believe the rich should contribute more to closing the digital divide and those who require the poor to pay for their own development. Sitting quietly in the middle zone are the few projects that have implemented creative solutions based on new models and approaches to social entrepreneurship and the construction of social capital, that earn an income but would not pass a strict banker's assessment of self-financing sustainability. Founded on smart partnerships with incentives for each partner, such initiatives provide value that does not lend itself to monetary measure, and which is subordinated anyway by their promoters to other values of a higher order. Against that background there is the need to engage private interests in relationships that can deliver adequate return on investment, but which do not depend on that entirely for poverty reduction to occur. For example, Indonesian privately operated technology centres, or *warnets*, target poverty reduction but have engaged with *Universitas Terbuka*, the Indonesian Government's open university, to deliver its courses to some 400,000 students across the country, creating a virtual campus. There is no financing involved, but the win-win arrangement works to extend the University's reach nationwide and delivers a captive market for other services to the *warnets*.

28. Beyond creating distance-learning opportunities, academia represents a huge and largely untapped resource, both as research institutions and as teachers of development issues that incorporate the use of ICTs. Few academic institutions in Asia-Pacific have significant research capacities or programmes that systematically investigate these issues, and even less teach them in their degree and graduate programmes. Whilst top institutions in the West; Harvard, MIT, Stanford, Cornell, LSE, Manchester and others are making significant contributions to development knowledge in areas that include the use of ICTs, developing country universities seem to be ignoring them.

### G. Sustainability; the broad view

29. Sustainability is too often interpreted as self-financing, and too often equated with success. Even extending the perspective beyond self-financing, there are many other sustainability dimensions relating to technology, content and people. The relationship between financing and sustainability seems to be depictable as follows:



30. The outer ring of sustainability includes far more than the financial aspects, consisting of issues that relate to social capital that rarely receive attention in sustainability discourse. Moreover, pre-planning for the financial dimensions of sustainability are often extrapolated from pre-existing patterns of communication and information flows that overlook the impact of the newly introduced ICTs on their configuration and the novel relationships that often emerge from the introduction of new technology. In any case, the impact that ICTs can have on the social setting in a community, for example its internal relationships and aspirations, are usually both highly unpredictable and heavily influential on outcomes, a factor that does not lend itself readily to the narrow financial and time related demands of project managers. Growing social capital with ICTs and creating new communication channels and information flows requires imaginative exploitation of the opportunities that technologies make available, and it challenges government's traditional approaches to rural life.

### **H. Funding**

31. The proposal for an e-Poverty fund to be created and maintained by the better off seems to be gathering momentum. At the least, it would match the rhetoric of the digital divide initiatives with some tangible actions and there is a growing recognition that anything less will leave the unconnected forever hopelessly disadvantaged. Some form of participation by one or more international organisations is indicated in the operation of funding schemes to: establish rural telecentres; for developing schemes to grow social capital out of novel forms of public-private partnerships; for seeding content development and start-up access points; for clustering regional research activities that have cross-border implications; for mobilising internal funds and for seeding capacity building initiatives that have high start up but low replication costs.

### **I. Regulation**

32. Government regulation should be directed more at how benefits can be directed towards the poor instead of protecting vested interests in incumbent institutions. The opening up of telecommunications markets seems to come closest to the desirable blueprint for poverty reduction with ICTs that policy makers seems to be seeking. However, regulatory principles need to be based on genuine transparency, reasonable cost, and equal treatment for all participants, local and foreign. As newer technologies such as VoIP (voice over Internet protocol or Internet telephony) provide a means of bypassing long-standing regulations, regulatory reform of many national telecommunications industries is urgently required. Rural communities are demanding the right to operate community FM radio stations and local television broadcasts, and while the technology is available to them, their own governments prohibit them from setting up such innovative development schemes. In terms of moving away from the monopolistic practices that have been claimed to be protective of national strategic interests, it is evident that such protection comes at an ever-increasing price, to be paid in the denial of development for the poor who feel they have a right to exploit the opportunities that the new ICTs offer them. In spite of this, even for motivated policy-makers, there are impediments; regulatory resources, especially manpower, are universally scarce, incumbent operators

hold all the information needed to make sound judgments and decisions, and genuine independence of the industry from government is almost impossible to achieve.

#### **J. Standards and models**

33. Replication is facilitated by standards, which can relate to technologies; hardware and software, as well as to methodologies for policy formulation and implementation, project design, community engagement, impact assessment, operating procedures, and so on. Whilst standards are an expression of stability, even best practices, they cannot be conferred with pre-eminence over better ideas, so that national and regional bodies have a role in the maintenance and development of standards, which is continuous. Standards can also be applied to business models for local implementations, which also assists in their replicability. Business models with a “pay-for-service” principle behind them contribute towards sustainability. They should ensure that operators are drawn from the community and include at least one woman. Roles for telecentre operations include a manager, a technician and a social mobiliser.

#### **K. Technology; range, affordability**

34. Technologies are simultaneously converging and diverging, as new devices take on tasks that old ones previously performed and old devices adopt new tasks that were not previously possible. Furthermore, there is nothing in technology itself that predetermines its development trajectory, such decisions are usually made by society, which often chooses seemingly inferior technologies over supposedly better ones to become standard products. In such a fast moving environment, there is a danger of technological determinism; of supposing that technology alone will provide the answers that are actually to be found in the interactions between technology and social pressures.

35. Rural communities may not be expressing irresistible demands for computers but they desperately want to communicate and they know they are being denied the opportunity to do so. ICTs that will allow them to communicate include telephones, mobile and terrestrial, loudspeakers, radio, television, computers, and whatever combination of these happens to be workable in any given circumstance. Such technologies have given rise to virtual communities and the ‘global village’, but the rural poor majorities are not included. When they are, it will be a different village and poor people will be communicating among themselves to leverage each other’s knowledge in the same way that rich people do now. Inter-village communication that is international represents a massive potential global force for poverty reduction that is hardly being tapped. Computers may or may not help bring this about; it may be achieved with mobile phones or personal digital assistants or even combinations of these with yet to be invented devices. Yet whatever technology platform prevails, for the poor to be equal partners technology must be released from the monopolistic grip that currently strangles innovation and artificially inflates costs.

36. Additionally, governments need to keep pace with technology development in support of poverty reduction initiatives; e.g., liberalising outdoor wireless connectivity that is now affordable. Technological interventions need to be based on practical as opposed to esoteric approaches; ICTs that are specifically developed for use by poor

nearly always fall by the wayside as they cannot compete with the high volume devices that flood the richer markets. It is better to adopt and adapt from that which is widely available, as low costs usually emerge quicker from economies of scale achieved by mainstream devices than from other economies instituted in more esoteric ones. For example, existing technology is readily adaptable to local fonts.

#### **L. Evaluation**

37. At a time when new knowledge is rapidly emerging, and just as rapidly being applied, evaluation becomes critical, because it is the filter through which local realities pass before becoming widespread knowledge. Evaluation processes are highly variable, subject to manipulation and loaded with bias from vested interests. Poor people are often under represented when donor reputations and careers are at stake. Evaluations can and should be neutral, incorporating multiple perspectives simultaneously and avoiding the almost irresistible urge to simplistically assign success or failure. Evaluations are learning opportunities and should be continuous, feeding back into actions within a constant cycle of self-improvement. There are multiple tools for evaluation that complement each other, delivering multiple perspectives of often complex and conflicting situations. Undesirable outcomes lead to valuable learning opportunities, yet information about them is often suppressed. With the Millennium Development Goals, poverty reduction now has a universal target, so evaluation becomes a critical component of efforts for tracking governments' progress. Research and evaluations of poverty reduction efforts that utilise ICTs have been uncoordinated and project-specific. Little is known of the aggregate effects and there are few studies that isolate the common factors from the locally specific ones.

#### **M. Sharing and exchange**

38. There is a need for a common forum where regional experiences can be shared in a non-threatening atmosphere, i.e. participants can openly and freely admit their mistakes. Such a forum would pro-actively disseminate the knowledge it gathers to places where it can be used.

## IV. EXPERT GROUP CONTRIBUTIONS

### A. Policy implementation in Nepal

39. The Government of Nepal has developed a comprehensive policy for using ICTs for development such that the forthcoming five-year plan contains special considerations for the tele-communication sector for ICTs and poverty reduction. The focus of the Government's planning is the establishment of 1,500 rural telecentres to deliver phone and Internet access to even the remotest areas, along with the development of appropriate support structures to make the centres capable of reducing rural poverty. The Government has established a High Level Commission for Information Technology under the Prime Minister, and its Action Programme for ICTs envisions the following goals;

- Enabling the people of Nepal to increase their opportunities for income generation and to empower them to reduce the social disparities by using information and knowledge through electronic or traditional ICTs
- Developing the institutional capacity at the Ministry of Science and Technology (MOST) to coordinate telecommunication developments and to expand Internet services in rural areas alongside the efforts of Ministry of Information and Communication (MOIT), Nepal Telecommunication Authority (NTA), Nepal Telecommunication Corporation (NTC) and the new General Service Providers (GSPs).
- Increasing the institutional capacity at the MOST for developing and managing services based on websites and matters related to District Development Committees (DDCs) and Central Organizations, specifically the Ministries of Agriculture, Health, Forestry and other Service Providers.
- Socially mobilizing community-based organization (CBOs) constituted under the decentralization development programs like RUPP (Rural Urban Partnership Program), PDDP (Participatory District Development Program), LGP (Local Governance Program) and organizations like The Farmers Association. Also to organize new CBOs for creating the atmosphere to motivate the poor to reduce their poverty by increasing income through access in information, knowledge and services, which could be provided from the 1,500 RCICs.
- Developing the skill and capacity of school children and rural communities to use new and advanced processes, technologies and methods developed in the Agriculture, Health, Education and Environment sectors.

40. The Government's plans also call for coordinating the use of re-utilizable resources of energies from Micro Hydro, Solar or Wind projects in the areas where electricity power is not supplied by the national grid.

## **B. Wireless rural networks in Bangladesh**

41. With its beginnings 1997 in a remote village in Bangladesh and working with about 100 students who had never seen a computer before, a rural networking project has grown to encompass rural localities of about 14 km x 14 km wide with a population of about 180,000, comprising 200 villages, 5,000 shops, several markets, and several secondary and primary schools. Working out from a school, the networks are promoted to local communities and businesses. The LEARN Foundation operates in the districts of Sylhet and Sunamganj, where it is implementing an organically scalable business model with WLAN and Wi-Fi radios for the information and communication needs of remote rural communities. The project is:

- A robust and financially viable broadband wireless network model to be erected in zero infrastructures, without any prior telecom systems being present.
- Driven by the rural information needs of farmers, fishermen, small traders, shopkeepers, schools, students and sustained by the businesses these rural communities are engaged in.
- Modelled on a relatively low capital cost per subscriber, easily maintainable and expandable through rural grid-franchises by small traders, community grassroots leaders and groups of ICT trained rural unemployed youths.
- Symbiotically feed and to be fed by:
  - Small rural businesses
  - Networking rural schools where access;
    - Creates equitable value both for the owners and users of the network
    - Finances the training of rural teachers for dissemination of ICT knowledge at primary schools
    - Makes high quality educational content available to rural children
    - Encourages students to discover additional uses and expand the network subscriptions in their communities in exchange for financial rewards and Scholarships
    - Facilitates long-term training for the 'next generation' global market workforce

42. The project educates and provides high quality information access to rural children simply by extending the network. In other words, the additional value created through the expansion of the network must be enough to fund the education program, which would in turn create more demand for the use of the network. Wireless Internet access to rural communities in exchange for bringing up bright school going children within a scalable business model appears to be a viable option in the light of this revolutionary new wireless technology.

## **C. Policies for telecommunications**

43. Whilst access to telecommunications is an essential component of efforts to close the rural digital divide, alone it is insufficient to induce poverty reduction. However, developing countries in Asia Pacific suffer from a shortage of resources for which there are always competing demands. Accordingly, justifying rural telecommunications, which have traditionally been viewed as uneconomic, requires assigning value to the social

gains that it fosters, a process that depends on unreliable assumptions. For projects to be sustained, they have to generate income, from any source, even during recessions. Many rural telecentres have been unable to do this and have also been plagued with operational difficulties, but they are still capable of generating demand among people whose desire to communicate is strong.

44. A key consideration for telecentres concerning regulation is their ability to generate social capital, so that where that is demonstrable, subsidised services can be provided. Universal Service Obligations (USO) are often imposed on incumbent operators to do this, but recent technologies which by-pass traditional tariff structures, such as VoIP, call-back and international traffic refile, are causing the decline in funds that are available for their support.

45. Newer wireless solutions are requiring regulators to make spectrum available for them at reasonable cost, and there are indications that competition does drive demand for both their access and usage. But policy and regulatory responsibility for bridging the digital divide may be spread across several authorities and regulation depends to a large extent on the culture of government and its level of commitment to economic and social development. Nevertheless, without an efficient and well-grounded regulatory process, efforts to use ICTs for poverty reduction are less likely to be successful. The regulation of telecommunications has traditionally been aimed at one or more of three objectives: first, to regulate the activities of the incumbent monopolist or dominant network operator; second, to facilitate the development of and access to a national information infrastructure; and third, to promote national strategic interests.

46. Where the incumbent is a monopolist or a dominant player, regulation aims to constrain the incumbent's possible abuse of market power. The USO serves as a social obligation, as a way to bring economic development to poorer areas of a country, and as a political tool to win support for the Government. Where regulation has been used to promote construction of the national information infrastructure, this usually involves measures to speed up the building of the telecommunications network, possibly including other measures such as the licensing of a cable TV network to carry telecommunications and Internet services, the encouragement of Internet service providers, and the licensing of cellular mobile networks, all of which may or may not entail further competition for the incumbent. Where regulation is used to promote national industrial policy and national strategic and security interests, these are often cited as reasons to resist foreign ownership of domestic telecommunication carriers, which is capable of bringing a number of benefits to the host country.

47. There are three basic principles to telecommunication regulation; transparency and accountability, to reduce risks in investment; reasonable cost, which reflect the real cost of the USO, not an attempt to maximise revenue; and national treatment, to treat nationals the same as foreigners, demonstrating genuine commitment to opening up markets. Regulatory reform requires skilled people, access to industry data, effective use of scarce resources, and contemporary perspectives of technology convergence. The principal challenge for regulators has been the transition from monopoly to competition.

Privatisation may have been responsible for making the supply side more responsive but equally responsible are the effects of regulation and liberalisation leading to greater competition. There are four basic approaches to regulation; the Reformist approach that focuses on the practicalities, such as bringing prices into line with costs; the Institutionalist approach that emphasises the power of central institutions for bringing about reform; the Neo-Institutionalist approach that places weight on the stakeholder interests and the role of incentives and property rights in the marketplace, and the Transaction Theory Approach that distinguishes between information rich and information simple transactions, such that information simple markets are more easily opened to competitive entry than information rich markets.

#### **D. Grass roots experiences in Viet Nam**

48. An Giang University, in An Giang Province of South Viêt Nam has been operating the Internet for Rural Areas Project (IRAP) since 2001, in which 114 persons in 36 villages, mainly government officers who had education level from college and above and working mainly in education, medicine and agriculture sectors, were selected for computer training. After training, the participants were provided with an Internet prepaid card and encouraged to form “Internet Clubs” at their respective villages. Around 80 per cent used the Internet, for at least six hours per month. All formed the Internet Clubs, some of which explored the use of the Internet for serving village needs. Typical accesses included government policy, Communist Party guidelines, newspapers, market prices and agricultural information. Whilst they all gained experience with the use of search engines, this was limited to accessing information in Viêtnamese language.

49. Many villages in the Province have computers, which they find useful, especially those in the more remote areas. Provincial authorities are encouraged by the result of the experiment, despite the predominance of English language content on the Internet. However, most surfing activities ceased after the pre-paid cards expired. It is known, though, that farmers have a considerable and continuing demand for agricultural information, which the local poorly educated extension workers are unable to satisfy. For the project to achieve its full potential, there is a huge need for Viêtnamese content and raising of community awareness

#### **E. Pilot projects in Malaysia**

50. The Government of Malaysia foresees the transformation of Malaysian society into a fully developed, values-based, knowledge-driven society by the year 2020. ICTs are expected to play a prominent role in this transformation, and several ICT initiatives have been instigated in order to propel the Nation towards its goal, including the National Information Technology Agenda and the Multimedia Super Corridor. Among them, the Demonstrator Application Grant Scheme (DAGS) was launched in 1998 with an initial allocation of RM50 million (US\$14m), and a subsequent allocation of twice this amount under the 8th Malaysia Plan (2001-2005). The primary objective of DAGS is to acculturate Malaysians to ICTs, enabling them to maximize the benefit of ICT applications at work and at home. DAGS also aims to encourage Malaysians to be more entrepreneurial and more innovative in using and adapting existing ICT and multimedia technologies.

51. The introduction of DAGS was premised on the belief that people will not be motivated to take up ICT applications unless benefits are demonstrated. DAGS provides seed funding for project proposals that:

- Contribute to community development through ICT;
- Involve tri-sector partnerships (i.e. community, private sector and government sector);
- Be clear about their goals and deliverables;
- Have potential for expanding outreach through up scaling or replication;
- Have potential for sustainability, through commercialisation, on-going community support, or some other mechanism; and
- Be quickly realised.

52. The main objectives of DAGS are:

- To acculturate Malaysians to Information and Communication Technology (ICT), enabling them to maximize the benefit of ICT applications at work and at home;
- To build an integrated network of electronic communities using ICT and multimedia technology;
- To promote the dynamic growth of Malaysians web-shapers and web-adapters;
- To develop entrepreneurial communities enabled by electronic networks;
- To enhance closer cooperation and collaboration between public agencies, private corporations, non-profit organizations (NPOs) and non-governmental organizations (NGOs) through joint ventures and institutional linkages; and
- To encourage Malaysians to be more innovative in using and adapting existing ICT and multimedia technologies

53. A 2002 study of DAGS projects identified the following critical success factors.

- Working within the framework
- Developing a prototype first
- Having a specific community and facilitate the participation of that community
- Designing for the ICT infrastructure realities
- Building effective smart partnerships
- Emphasising ICT awareness and training
- Having a sustainability plan

54. To-date, approval has been given to 73 DAGS projects costing RM 103 million and spread over several sectors such as agriculture, manufacturing, education, public services, environment, health, social and community services. Several successful DAGS projects have obtained international recognition and awards. The success of DAGS as a seed fund can be attributed to it being a social innovation adopting a reimbursement model with forward financing. One key challenge of DAGS is to constantly maintain its independence, transparency and accountability. In terms of contribution to ICT4D policy

development, the DAGS experiences have provided valuable inputs and funding towards the formulation of a National Framework on Bridging the Digital Divide.

#### **F. Policy making in Sri Lanka**

55. In 2002, the Government of Sri Lanka introduced a Development Road Map for the country entitled “Regaining Sri Lanka” which addressed two prominent sectors; ICTs and Rural Economic Development. A cabinet Ministry for Rural Economy was established and IT became the responsibility the Ministry of Economic Reforms under the Prime Minister’s direct supervision. The Government appointed a National Steering committee to prepare a National ICT Policy and it prepared an ICT development road map for Sri Lanka which became “e-Sri Lanka”. This was approved by the Cabinet of Ministries and officially launched by the Prime Minister in November 2002. The Government also established an empowered agency for the implementation of this programme, called the ICT Agency, which was formed as a fully government owned private company. The ICT Agency was established on 1 July 2003.

56. The Government’s vision for ICT in development is to “harness ICT as a lever for economic and social advancement for all our people by investing in human and physical infrastructure and by creating the environment for emerging as the preferred business destination in the region” and the vision of e-Sri Lanka Programme is to “take the dividends of ICT to every village, to every citizen to every business & re-engineer the way government thinks and works”. The e-Sri Lanka Programme has a distinct component called ICT for Socio Economic development, which focuses on ICT for rural development and poverty reduction. A fund has been established to support innovative societal ICT applications to be implemented by this programme in conjunction with a rural telecentre programme.

57. The goals of e-Sri Lanka include:

- To develop Sri Lanka as an ICT Literate Nation with the ability to communicate in English effectively.
- To promote “Glocalize” content development in local languages.
- To create public awareness on ICT4D.
- To promote building various partnerships and networks to maximize the use of ICT4D.
- To promote the use of ICT to empower various disadvantaged/unserved groups.
- To facilitate the development of innovative ICT applications for social and economic development based on Millennium Development Goals (MDG) and to set up a fund to support such initiatives.
- To promote multi-stakeholder partnerships in ICT4D.
- To promote and initiate the use of ICT for various poverty reduction Programmes aiming at creation of employment and income generation.
- To promote the capacity building of mass media sector empowering them to disseminate ICT4D knowledge and information effectively and efficiently.
- To use ICT to promote multiculturalism and Peace.
- To use ICT to promote Sri Lankan Art, Culture and Indigenous knowledge.

58. The following aspects of policy formulation are considered instrumental in achieving the current status of the e-Sri Lanka Programme:

- The structure of the implementation agency (with political leadership, a high powered National Consultative Committee -the Cabinet, a task force of industry gurus, an empowered ICT Agency, and implementation partners (private, public, civil society).
- Lessons learned from earlier activities were taken into consideration
- A stakeholder led approach
- Ownership and leadership to partners
- A politically neutral professional team
- More Sri Lankan thinking into the project
- Implementation of pilot projects

### **G. Public access in Indonesia**

59. Indonesia suffers from a digital divide and a bureaucracy divide prevents ordinary people or SMEs from expressing their concerns to the Government. Despite 35 years of monopoly given to the incumbent and state own telecommunication company, 42,000 out of the country's 72,000 villages are without any telecommunication. Insufficient awareness raising and restrictive property rights have hindered the introduction of ICTs, but there are cases where simple technology has spread rapidly, e.g., email everywhere, and SMS in the Philippines. In other cases, simple and useful technologies are being held back by regulation, such as VoIP.

60. In Indonesia, 42 per cent of access to the Internet originates in *warnets* Indonesian telecentres, which provide affordable access to ICTs for the general public. They typify a grass-roots SME-driven approach to development with ICTs as opposed to top down, donor funded approaches that often fail, and even drive out local initiatives that are unable to compete while donor funding is available. There are 4,000 *warnets* and 220,000 public telephone kiosks in Indonesia. In one case, a *warnet* has been able to share expensive VSAT satellite access to the Internet with 30 other *warnets*, through the use of outdoor wireless local area networks, an arrangement that was illegal at the time that it was implemented.

### **H. Pilots and policy in the Philippines**

61. In 1999, the Department of Science and Technology, through the Philippine Council for Health Research and Development (DOST-PCHRD), facilitated the implementation of four pilot barangay (village) rural multipurpose community telecentres (MCTs). The purpose is to contribute to people's empowerment and development in rural communities by providing access to people, information, resources and services. The telecentres use simple and state-of-the-art communication tools and serve as venues for learning, interaction and creating content and ICT-based applications in education, health, agriculture and rural enterprise development that respond to the needs of the communities.

62. The MCTs offer the following services:

- Internet café, including computer processing, encoding and printing
- Content development of barangay information; influencing partners to develop content with the community in mind
- Communication services through the public calling office of the Department of Transportation and Communication's Telecommunications Office (DOTC-TelOf);
- Learning and reading through the Barangay Library and Reading Center, which is now an affiliate of the National Library, receiving an annual materials allocation and training for the designated barangay librarian
- Training and interaction with extension agents of the Departments of Agriculture and Health, among others.

63. Some of the lessons learned from the pilots are:

- MCTs are primarily about working within a web of relationships, which is concerned with the needs and aspirations of rural communities.
- Rural people are capable of solving their own problems; they have resources and they have the capability to pay.
- Community involvement and ownership are essential. Demonstrating its capability to provide answers to their concerns enhances the community's understanding of ICT.
- Each MCT is different from the others, being highly dependent on leadership and location. Although people will pay for services there needs to be a balance between public and commercial service objectives.
- Capacity building in technical and managerial aspects contributes significantly to MCT sustainability by facilitating the participation of stakeholders and partners.
- The use of the local dialect hastens content development, provided it relates to community problems.
- Information needs evolve, demanding new and enhanced MCT services. Internet information resources complement radio, face-to-face and other transactions.
- Evaluation is more effective when community members participate, both for implementers and for community members.
- Storytelling by users and non-users, in combination with other tools like logbooks, volunteer journals, diaries and interviews, is a potent tool to monitor the changes occurring in a community; the social aspects of its relationship with the MCT; predicting and understanding usage and non-usage patterns; improving services; picking up nuances relating to gender, etc.

64. Through the project's partnership with the Department of Transportation and Communication's Telecommunications Office (DOTC-TelOf), the MCT initiative has advised the Government's Information Technology and e-Commerce Council (ITECC) and a new program on Community e-Centers (CEC) was developed in 2003. ITECC is chaired by the President of the Philippines and is the highest ICT policy-making body in the Philippines. Its is "an e-enabled society where empowered citizens have access to technologies that will provide quality education, efficient government services, greater source of livelihood, and a better way of life."

## **I. ICT4RD: The NGO experience in India**

65. Agriculture represents twenty percent of India's economy, but this is expected to decline to around 7 per cent by 2007. Meanwhile, more than 70 per cent of the Nation's population is engaged in agricultural activities, so it is expected that their lives will become less and less relevant to national life. Against that background, ICT is commonly seen as a way of integrating the rural population into national life. There are a large number of ICT4D projects in India, with something like 144 projects known of which more than two-thirds have been initiated by NGOs. These include both for-profit and not-for-profit organizations. Examples of for-profit ventures include ITC's e-chaupal project has over 2,000 centres; the Parry Company provides agricultural extension services in support of sugar growing, and GNFC a fertilizer company, has provides support to farmers. These projects display two broad approaches;

- Connectivity is all, where the focus is on technology, and
- Content is king, where the focus is on information content.

In general, the former is good in technology but weak in community orientation and the latter is easy to float with communities but difficult to sustain. All projects have demonstrated that feasibility is no longer an issue but sustainability is and this factor is plaguing projects.

66. A number of new connectivity technologies are adding to the momentum of the rural ICT movement; radio, solar power, satellite communications, but there is a trend to view ICT4RD projects exclusively in financial terms, with an emphasis on the "user pays" approach. However, this emphasis on the market for rural information services, which makes comparisons with the rapid spread of cable television, is not correctly based, as it neglects the local specificity of many successful pilots. The driver of ICT4RD in India is likely to be the provision of a new channel for non-formal, open, distance learning for rural youth and especially for women. This will be linked closely to local micro-finance organizations and disaster relief and management. E-governance will be of very limited scope as it is of little interest to rural people, the benefits are often trivial and existing projects, even in the same State, are incompatible, which drastically reduces their utility.

67. Pilot studies continue to contribute towards much-needed new knowledge. Although pilots have been highly local specific, it is now possible to isolate some common factors; e.g., formats for needs analyses and impact evaluation, which can blend bottom-up and top-down approaches. All studies point towards a mix of public and local support. All implementations will benefit from low-cost devices.

68. A Triple Helix Model for ICTs for poverty reduction can be promoted, with three strands:

- Strand 1: Motivated Community Organizations in the Locality
- Strand 2: Technology and Content-oriented Organizations
- Strand 3: Public Policy for Rural Development that Accepts Knowledge as Essential Input

## **J. ICT policy advice across Asia from UNDP**

69. Poverty alleviation strategy begins with an acknowledgement of the specific needs and demands based on an in-depth understanding of the social, economic and political environment in which the initiative will be undertaken. There are four dimensions of poverty that form the basis of poverty reduction strategies:

- Economic capabilities (consumption, income and assets)  
The ability to earn an income, to consume and have assets, which are all key to food security, material well being and social status. These include having secure access to productive financial and physical resources, land, credit and decent employment.
- Political capabilities (rights, influence and freedom)  
Encompassing human rights, participatory-governance and the ability to influence public policies and political priorities.
- Socio-cultural capabilities (status and dignity)  
The ability to participate as members of a community while safeguarding social status, dignity and other cultural conditions for belonging to a society.
- Human capabilities (health, education and nutrition)  
The crucial means of improving livelihoods for poverty reduction.

70. The United Nations Development Programme Human Development Report 2001 argues that ICTs can play a huge role in reducing world poverty, and refutes the view that technology is primarily a luxury for people in rich countries. ICT's benefits include the following:

- Poverty reduction through direct and indirect job creation
- Increased income for village phone operators and telecommunications operators
- Marketing opportunities for individual producers and small businesses
- Access to information relevant to livelihood (fisherman, farmers, etc)
- Access to information on ways to improve on production of work
- Increased access to education and training
- Social mobilization – community initiatives based on exchange of experience (e.g. establishment of village savings cooperative)
- Protection of local resources and sustainable use of environmental resources (e.g. patenting of indigenous knowledge by a commercial entity successfully challenged based on information accessed via ICTs, and establishment of herbal processing centre)
- Empowerment of women through entrepreneurial activity
- Reduced costs of social and other communications and quality of life benefits for individual users
- Encourage the development of local poverty reduction indicators and targets – and strengthen local statistical, analytical, monitoring and evaluation capacity.

71. However, the lack of government funding and low market demand has inhibited technology opportunities for poor people. As most Asian countries adopt ICT to improve their competitive position in the global economy, policies for reducing poverty with ICTs call for rapid and sustainable pro-poor growth, which in turn requires equitable participation by poor men and women in generating and benefiting from growth. It also

requires reforms to reduce inequalities regarding human capabilities and access to assets and productive resources such as land, training and credit. Initiatives should underline and address these primary aims of economic pace, quality and equity.

### **K. Serving the un-served in Thailand**

72. The Mirror Art Group works in northern Thailand with hill tribe people, comprising the Akha, Lahu, Mien (Yao), and Karen tribes. Together, at around 900,000 people, they make up between 1 and 1.5 per cent of Thailand's population. All are experiencing a dramatic change in their culture and way of life; from independent, subsistence farming to becoming the bottom rung of Thai society and a market economy. They live an impoverished and disenfranchised existence, in remote villages without services. The Thai expression for poverty embodies the notion of "difficulty with no way out". For the hill tribes, poverty is not lack of money but is a lack of rights, opportunities, knowledge, communication, independence, belonging, and confidence. Their poverty sits in a complex web of causes and consequences, and it is helpful to understand where ICTs can contribute within this web.

73. Every program of the Mirror Art Group for the hill tribes is supported by ICT. These include:

- [www.ebannok.com](http://www.ebannok.com) (e-commerce)
- [www.hilltribetour.com](http://www.hilltribetour.com) / [www.learnfromhilltribe.org](http://www.learnfromhilltribe.org) (eco-tourism)
- The Virtual Hilltribe Museum @ [www.hilltribe.org](http://www.hilltribe.org)
- Bannok TV
- Missing Persons Database @ [www.backtohome.org](http://www.backtohome.org)
- [www.tobethai.org](http://www.tobethai.org) (Thai citizenship)
- Volunteer Programs
- Fundraising

74. Experience indicates that applications of technology will be effective provided the villagers are interested in them. Policies should be based on what the villagers themselves need, not what outsiders would need if they lived in the villages.

### **L. Serving the un-served in India**

75. Approximately 70 per cent of one billion Indians live in 650,000 rural villages, making the Indian economy heavily dependent on the agricultural yield. Despite the population's dependence on the agro-based economy, one third of Indians live the villages with minimal infrastructure such as communication networks, roads, transportation, power supplies, health care and education. Today, half a century since gaining independence, more than 350 million Indians, a number equal to the entire population of the country in 1950, live in absolute poverty.

76. Information technology must be brought to the poor who should be given an equal opportunity to master it to their advantage. It must be designed in such a way that a totally unprepared poor person can immediately use it without feeling threatened and able to utilise the acquired knowledge for wealth creation. However, there are major obstacles to overcoming poverty with ICTs:

- Lack of awareness about the benefits of new communication technologies
- Lack of access to computers and connectivity
- The language barriers
- Lack of appropriately packaged information
- Lack of motivation to use information

77. Against this background, there are specific actions that government can take:

- Promotion, advocacy of ICT
- Formulating national objectives and strategies
- Establishing appropriate legal and regulatory frameworks
- Championing ICT use through
- Facilitating linkages between Govt., NGOs, CBOs, businesses
- Encourage private enterprise through the establishment of an enabling economic environment
- Encouraging civil society to make effective use of ICTs for rural development and poverty eradication.
- Attracting investments in the rural regions into the development of ICT related capacities,
- Encouraging domestic investment in the ICT industry

#### **M. ICT development for poverty reduction in Cambodia**

78. In Cambodia, 36 per cent of the population live below the poverty line of which 90 per cent are in rural households. Eighty-five per cent of the population live in rural areas and 85 per cent of rural employment is in subsistence agriculture, forestry, hunting and fishing. Poor rural people lose opportunities because of lack of access to information and communication with the larger society. Eliminating this constraint, utilizing information and communication, can change the lives of these people, with a positive effect on poverty reduction

79. Key constraints of the poor include:

- Lack of access to basic needs and services, Transport infrastructure, health care, education, and market
- Lack of information and communication
- Agricultural information (inputs, diversification, weather, market prices)
- Educational information
- Health information
- Political information Social and cultural information
- Lack of administrative information
- Lack of legal information
- Lack of on information on emergency situations, disasters, diseases
- Etc.

80. ICT can contribute to poverty reduction if the poor are reached, they know how to use ICT; ICT addresses their needs and is part of a bigger effort. The major constraints are:

- Clear policies and strategies needed

- Poor physical infrastructure (roads, telephone lines, electricity)
- Poor distribution network (transport services, supply and maintenance)
- Individual Illiteracy
- Collective illiteracy
- Content of information does not serve the poor
- Efforts are not delivered in coordinated way

81. Solutions include:

- Policy Development and strategies to incorporate ICT into poverty reduction
- Development of the infrastructure
- Education of agents to represent communities
- Adult Literacy programs

82. The Cambodian National Strategy on ICT 2003-2005 aims at:

- Improving the quality and diversity of information of all media
- Expanding the television and radio network nationwide
- Establish three lines of telecommunication from Phnom Penh to 15 target provinces
- Expanding telecommunication coverage
- Creating many low cost telephone access points
- Opening ministerial home pages
- Strengthening the organizational structure of those institutions involved in ICT delivery
- Privatising services where needed

*Annex I*

**LIST OF PARTICIPANTS**

**BANGLADESH**

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**INDONESIA**

Mr Rudy Rusdiah, Director, Millenia Net Café, Director of Micronics Internusa PT/Garuda Web, Founder and Chairman of the Indonesian Internet Kiosk Association and KOMITEL (Cooperative on Community Telecentre), Jakarta

**MALAYSIA**

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**NEPAL**

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United Nations Development Programme –  
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Mr Ian Richards, Programme Expert,  
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## ESCAP SECRETARIAT

Mr Kim Hak-Su	Executive Secretary
Ms Keiko Okaido	Deputy Executive Secretary
Mr S. Thampi	Principal Officer
Mr Daewon Choi	Special Assistant to the Executive Secretary and Secretary of the Commission
Mr Raj Kumar	Chief, Poverty and Development Division
Mr Yap Kioe Sheng	Chief, Poverty Reduction Section, Poverty and Development Division
Mr Peter Hegenbarth	Economic Affairs Officer, Poverty Reduction Section, Poverty and Development Division
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Mr Christian De Sutters	Chief, Conference Services Section, Administrative Services Division
Mr David Lazarus	Chief, United Nations Information Services