EXPORT, POVERTY AND THE 'E' DIMENSION
BRINGING THE POOR INTO THE TRADE NETWORK: SOME LESSONS FROM INDIA

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There is an increasingly complex role of E in development issues, especially in rural business and trade development as a tool and opportunity that addresses the basic and very difficult issue of poverty amelioration. There are innumerable 'e' related issues for farmers, the (usually micro-level) rural enterprises and governments. How important and relevant is 'e'? How large is the impact of 'e' presently in the rural economy? What is the impact of 'e' on existing business processes and governmental rules and regulations? Which of these should be changed now and which can await further technological developments and changes in ICT technologies? What is the relationship between 'e' and development and 'e' and poverty? Which of these 'e' issues are relevant for developing economies and which are not?

It is not the mandate of this paper to raise and address all such 'e' issues. The focus here is on the practical usage of 'e' in trade/exports by poor communities i.e. having and using 'e' for business and trade competitiveness for farmers, marginalised groups and micro-enterprises in developing and transition economies. And it is in this context that it will address some of the relevant issues such as,

- What is the relationship between ICTs and poverty?
- How important is E for business and for trade development in rural communities?
- Is it a global, national or enterprise level issue?
- What are the Key Factors which will help to identify what works and what does not work with respect to ICT, poverty and exports?

Much water has flowed under the digital bridge since ICTs presented themselves as a serious business phenomenon and developmental tool on the global stage somewhere in the late 90s. Ever since then many developing countries and development agencies have been seeking to find solutions to development issues in the new digital world. Elaborate concepts, claims and predictions relating to e-Commerce and the digital economy were made in the late 90s that may not hold good in today's reality. One such was the permanent breaking down or irrelevance of 'distance'. In the digital world the presumption was that there would soon be internet access at the level of village, post offices and community centres. The hard reality some 8 to 10 years later is that for many developing countries even limited access in rural areas remains a distant dream, though there have been significant examples of success such as the development and expansion of mobile technologies that help the rural areas in the developing world to reap the benefits of "e". (Example: Fishermen using SMS to get market prices in Philippines, e-Choupal in India etc.). These examples unfortunately remain exceptions to the actuality.

> *Occasionally newspapers report with curiosity some unique examples, such as how fishermen in some remote location are using cell phones to warn one another of a storm brewing etc. - but these anecdotes remain exactly that – just anecdotes!*

ICTs and Development: Potential and praxis

In recent years, considerable attention has been paid to the role that information and communication technologies (ICT) might play in promoting economic growth, combating poverty, and strengthening developing countries' participation and competitiveness in the global economy. Examples of countries such as India that seem to be "riding the ICT wave" successfully are being touted to many developing countries also looking to reap the benefits of ICT-led growth for their own economies. International development agencies have supported, and participated in, this mounting enthusiasm for ICT-led growth and poverty reduction by helping developing countries prepare and implement "national ICT strategies" or "e-strategies" designed to integrate ICT into broader national development and poverty reduction plans. In an effort to realize the enormous potential of these technologies, national leaders in a wide range of countries have sought to devise and implement national strategies for systematically applying "ICTs" to development challenges—what has come to be called "ICT for development." For some years now, the larger development community has adopted this agenda as one more attempt to find the golden grail of poverty reduction.

Interest in finding new and better ways to facilitate development and eradicate poverty —and proposals for how to do so—are not new. Nor are the main reasons for constantly seeking improved solutions; basically, anything that can result in more progress and leverage the limited available resources more effectively is beneficial both for the developing countries concerned and for the international community of institutions seeking to help them.

Particularly in view of the Millennium Development Goals (MDGs) that include the addressing of poverty amelioration, discussion on this subject, and of particular options that appear especially promising, has become much more prominent. One reason for the heightened search now for new options is that the current situation is widely felt to be inadequate. The argument is that ICTs can help in the achievement of the Millennium Development Goals through three basic processes: enhancing livelihoods, improved efficiency in the delivery of services, and allowing local stakeholders a voice in the planning process. ICTs can reduce poverty by improving poor people's access to education, health, government and financial services. ICT can also help small farmers and artisans by connecting them to markets.

SideBar 1: The crippled of the connected age

Being unconnected (to the Internet or wireless telephony) amounts to being deaf, dumb and blind in the digital world. Does such a state not call for State responsibility and response? Are not digital crutches essential for building spatial capabilities? Poverty redressal in the digital age therefore must involve ICT provisioning. Utilizing the potential of ICTs for Export promotion should therefore also address poverty and the issue of development. What then is the role of governments and trade support agencies in this area? What are best practices emerging in developing countries? Can such lessons be universally applied?

Today the differences in the diffusion of information and communications technologies are exacerbating the disparity not so much between countries and across regions but more so in social groups within countries. It could be argued that the biggest digital divide is that of the poor and marginalised, especially in the rural areas of developing countries. It has been argued1 that such differential rates of technology diffusion are a persistent fact of economic history, however the advent of the Internet and its perceived economic significance have served to focus attention on narrowing the digital divide. While 'e' offers opportunities to increase productivity and to

[1] Tigre and 0'Connor, 2002

improve access to information and to markets, the poor and disadvantaged groups in developing countries and small and micro size rural businesses are usually at a disadvantage to reap these benefits due to poor telecommunication infrastructure, lack of appropriate IT equipment and software, and inadequate skills to use and support eCommerce applications. Addressing these issues therefore is considered as the prime responsibility of governments and development agencies.

> "…just as poverty is multidimensional, so too is the role of ICTs. ICTs are not an end in themselves but a means or mechanism that can make a significant contribution to the fight for poverty reduction. ICTs cannot solve poverty on their own, but they can make a contribution to the processes that lead to achieving the Millennium Development Goals (MDGs)."
> *Batchelor and Scott[2], 2005*

Poverty is widely recognised as multidimensional, encompassing food security, health, education, rights, security and dignity, among other elements. Although its resolution should also be multidimensional, the focus in this paper in on one of the key factors: export-led economic growth, and ICT-enabled export growth in particular. But before doing that it is necessary to place also the emerging contra view to this whole 'ICT for development' excitement.

Much of the ground level research/data, though still inadequate, ids beginning to show that despite major opportunities to take advantage of the development potential of ICTs, the results of most national strategy efforts to date have been disappointing. Abstract discussions of "the information society" and generic references to one or another "best practice" too often obscure or postpone fundamental policy and budgetary choices and distract attention from local realities. Tipson and Frittelli (2003) have concluded that national strategies frequently flounder and even fail by becoming focused on particular technologies or applications in isolation from the broader policy, resources and capacity building initiatives necessary to exploit their capabilities in specific settings.

> "Strip away all the hype about rural telecentres and e-government for the masses and telemedicine for remote regions and e-commerce for micro-enterprises and what you've got – when you apply ICTs to the MDG agenda – are the rusting tractors for the 21st century. Most of these projects never properly work, and for those that might just get off the ground, go back two years later, and it's all crumbled to dust."
> *-Richard Heeks, 2005*

In a scathing examination of this ICT for development hype, Professor Heeks (2005) has argued that when 'e-development' first came up as a concept in the late 90's it applied the broad brush of the new technology to all aspects of development. Today, the "edevelopment" agenda has been pressed through the MDG filter, leaving many elements behind. This has resulted in developing agencies and government strategies attempting "an agenda that prioritises the use of ICTs in those domains in which they are often least able to be implemented, least able to succeed, least able to sustain and, hence, least able to make a contribution to development".[3]

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[2] Batchelor and Scott, 2005
[3] Heeks, 2005

Though the jury is still out and debating, and the evidence base on this is still being collected a recent survey suggests at least one-third of 'ICT for development' projects are total failures and one-half are partial failures, leaving little room for success.[4]

[4] Ibid

ICT, Poverty and Exports: Some links and experience

> "In most developing countries the emphasis and experience has been more on 'ICT-exports' as opposed to ICT *for* exports".
> *- A. Didar Singh*

Some developing countries have proven that concentrating on ICT production and service sectors can help their economies grow, as adequately demonstrated by growth in Asia in the 1990s. Although in some cases this growth led to noticeable poverty-reduction, the poor can benefit proportionally less than the non-poor. In a recent study on ICT in Asia Brahm Prakash[5] has concluded that the Asian countries have developed ICT for export markets. They have not used it extensively in the cause of rapid economic development and poverty reduction through higher levels of productivity. The issue of course is whether the resources and capacities in developing countries make that a worthwhile possibility and if so what would be the strategy to move in that direction.

At first glance the link between export, poverty reduction and 'e' seems very simple and attracts the attention of many development agencies and strategy-makers. At best, the 'usual' kind of logic applies in trying to identify the link, whereby it is argued that:

Proposition 1.	human and economic development are primary goals of societies,
Proposition 2.	trade fosters economic development,
Proposition 3.	competitive businesses are engines of trade, and
Proposition 4.	'e' can help businesses be competitive, hence "e" can be a tool for poverty reduction.

This appears to be a very long-winded attempt to justify some very shaky ground because in practice, apart from anecdotal cases that are repeatedly referred to as 'best practice', it is very difficult to find any evidence to prove that the link actually exists.[6]

There is no doubt that trade does provide benefits to any economy, but they may not "trickle down" automatically to the poorest people. For rural producers in poor countries, tapping into international business can bring access to wider and wealthier markets. The issue however is to find solutions to fill the gaps between trade-related economic growth and poverty reduction. There are some possibilities here such as[7] :

Develop trade in sectors with potential for impact. Many developing countries, and especially least developed countries, have a comparative trade advantage in natural resource and labour-intensive sectors. Sectors in which poor communities usually predominate include agriculture, textiles and clothing, animal hides, leather and leather goods, light manufacturing and community-based tourism (i.e., poor communities in tourist areas selling products and services to foreign visitors).

Link up the poorest producers with higher-value export chains. When it comes to doing business, poor people suffer the disadvantages of little or no education or connections to those who can help them expand their business in the formal economy. Strategy-makers and trade promotion organisations must therefore assist in linking poor producers with established exporters by building awareness and capacity in disadvantaged communities.

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[5] Brahm Prakash, 2003
[6] In discussion with Anton Said, ITC.
[7] Hendrik Roelofsen, 2004

In an interesting analysis, Professor Heeks (2005) has looked at those examples where ICTs are having a positive development impact. He has analyzed the ICT-and-development relationship and divided it into two parts:

1. ICT consumption: the use of technology in applications like e-commerce and e-government.
2. ICT production: the creation of hardware, software and other components of the ICT infrastructure.

According to the data available the evidence base seems to suggest that the developmental gains from investing in ICT production are greater than for investment in ICT consumption. Put simply, development or promotional agencies and governments with money to spend would better use it to incubate new IT firms rather than to create a service delivery Web site. He puts it another way – "if you do invest in that Web site, look for the benefits in the firm that *made* the Web site more than in the government department that *uses* the Web site"!

Which export sectors?

Strategy-makers may also want to know whether particular export sectors (i.e. manufacturing sector, service sector, tourism sector and/or agriculture sector) are more important, or appropriate, in terms of the contributions to export development and poverty reduction through 'e'. Today there is not sufficient data to answer this question particularly since both the needs and success of specific initiatives in developing countries are limited by their own local business environment. However, to attempt a step in this direction and at least comment on the issue we have examined data available of the globally recognised most important international award presently in the area of ICT for development, i.e. The Stockholm Challenge Award. This Swedish organisation has for over a decade been inviting projects for consideration of yearly awards. In the last few years, some 600 to 900 projects/initiatives have been submitted annually and some 60 odd are chosen as finalists in some 6 categories. Some 503 projects have been chosen over a decade. If we consider these projects to be so called 'successful' initiatives, and apply the 'rural' filter to them, analysis of the categories shows that the largest are in the area of 'economic development' (38); followed by 'environment' (14); 'health services' (8) and 'culture'. Quite obviously these categories do not match 'export sectors' but the lesson here is also clear. Within 'economic development' the highest awardees (2/3rd) are in the production or manufacturing end and a lesser number in services. The conclusion that appears to lend itself to this question is that for pro-poor initiatives in developing countries it is the production sector related initiatives that should be focused on. For rural areas, the answer is obvious – agriculture and related activities.

Some lessons from India

The broad picture is that during the last decade India has attempted to profit from the growth of ICT through an export-oriented growth strategy however the issue of ICT in development has not received the attention it deserves. And yet there are tens of ICT in development type initiatives going on across the country – many by Government, some by NGOs and recently, by the private sector. The most famous and 'successful' example of ICT, development and exports is that of eChoupal as it combines the reality and vision of what many see as the future or ICT-led growth being a win-win for all its stakeholders.

SideBar 2: India's eChoupal Case

ITC Ltd., one of India's foremost private companies, provides an example of increased ICT efficiencies in the agricultural export sector. An initiative called **e-Choupal** places computers with Internet access in rural farming villages that serve both as a social gathering place for exchange of information and as an e-commerce hub. (Choupal means "gathering place" in Hindi.) The computer is typically housed in a trained farmer's house, linked to the Internet, and serves an average of 600 farmers in 5 to 10 surrounding villages within about a 5 kilometer distance. Using the system costs the farmers nothing, but the host farmer is obligated to serve the entire community. Farmers use the computer to access daily closing prices on local government-mandated markets, find information about new farming techniques, and pre-order seeds and fertilizers. At harvest time, ITC offers to buy the crop directly from any farmer, at the previous day's closing price; the farmer then transports his crop to an ITC processing center, where the crop is weighed electronically, its quality assessed, and the farmer is paid for the crop and a transport fee. Thus, the e-Choupal system bypasses the local market, where farmers must sell to middlemen that profit at the expense of the farmer and of the ultimate buyer. Farmers benefit from more accurate weighing, faster processing time, higher prices for their grain, and prompt payment; the company benefits from lower procurement costs, from using the network as a distribution channel for its products, and from new product ideas suggested by farmers. Some of the produce (soya-beans for example) go into the ITC export trade).The e-Choupal system gives farmers a greater share of the value of their crops and access to information to improve their productivity. By providing a more transparent process and empowering local people as key nodes in the system, ITC increases trust and fairness. The increased efficiencies and potential for improving crop quality contribute to making Indian agriculture more competitive. Despite difficulties from undependable phone and electric power infrastructure that sometimes limits the hours of use, the system is a significant step toward rural transformation by using ICTs.
Source: ITC's e-Choupal as a Model of Profitable Rural Transformation, Univ. of Michigan, http://www.digitaldividend.org/case/case.htm

The example above illustrates the importance of private sector led ICT development which ensures its sustainability as a business model, in this case with a market linkage to exports. It is also an initiative at the 'ICT production' end more than at the 'ICT consumption' end.

For such rural economy initiatives to be viable there must be a strong market focus. C.K. Prahalad, the renowned Indian professor of business administration, views the global market as a pyramid with four billion people at the bottom. The vast majority of these people live in rural villages and urban slums. Prahalad encourages governments, businesses, and NGOs to develop new strategies to make individuals in this tier, active market participants. There are today interesting examples of 'facilitating' organisations and NGOs working in rural India to bridge this very gap.

SideBar 3: GRASSROOTS TRADING NETWORK: Consolidator Model for Agri-Exports

Innovative approaches to building relationships between the business and social sectors have been on the rise in recent years. Players in both sectors are recognizing that corporate involvement can bring great benefits to social development initiatives while Grassroots Producer Organizations (GPOs), in turn, can add value to corporations by helping them achieve their core business objectives.

Grassroots Trading Network, a company whose mission is to strengthen, support and expand market opportunities for GPOs with a particular focus on women, has been forging such relationships for some years now using ICTs for information, communication and system consolidation. It linked up local NGOs, producer members in villages and agri-exporting corporates.

By doing so the farmers got direct access to large buyers to increase their returns, while the export house got a reliable source of consolidated quality sesame seed at competitive prices and as per their requirements. Through this partnership, returns to farmers increased by 30% in 2 years, GPO gained credibility by fulfilling it's mission, and export house received its documentation requirements, mandatory for export apart from getting value addition in terms of cleaning and grading.

THE CONSOLIDATOR MODEL

Under this model, Grassroots positions a GPO with a large network of small and marginal farmers to an agri-business as a "Consolidator" for procuring commodities. The major benefit to the company is traceability for which it can train the GPO to establish the procedures and systems to trace procured commodities to the individual farms on which they were grown. This is a *mandatory requirement for exporting commodities*. ICT is used to man the system.

To help farmers get better prices by bypassing middlemen, the GPO in this Consolidator role, would ideally need to procure all commodities produced by its small and marginal farmers. Thus, if a corporate tie-up cannot be arranged, the GPO could sell in large village markets. The GPO would still be competitive in this role since it would have aggregated commodities from a number of small and marginal farmers, reducing costs of collection, transportation, etc.

It is important to note that The Consolidator Model can be applied to domains other than agriculture. For example in handicrafts, buyers could work with a GPO to source goods from a diverse and fragmented pool of artisans. The large buyer gains since it can access unique production capabilities that it would find extremely costly and logistically difficult to access on its own. The GPO would in turn have tapped large, high-return markets that poor producers couldn't reach on their own.

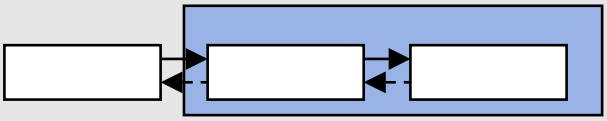
Snapshot of Model in Agriculture: Grassroots Producer Organizations (GPOs) based Consolidator Model

Existing Flow of Agricultural Goods and Currency

Lack of aggregation capabilities forces small farmers to sell to village middlemen:
- Inefficiency in logistics
- Lack of market intelligence and market access
- Poor returns/ realization

Corporates buy agricultural produce from Marketplace (Mandi) for exports:
- "Traceability mechanisms" a challenge
- Stock sold is often average quality
- Expensive as end price in a long chain of middlemen

Consolidator Model Description



Role of Grassroots:
- Mentoring and facilitating
- Establishing trust between partners
- "Translating" communication for both the partners

Role of GPO
- Act as Consolidator, procuring and aggregating goods at fair prices from small and marginal farmers
- Sets-up Traceability Systems
- Provide value added services

Role of Corporate:
- Procurement and technical training
- Purchase price communication
- Farm documentation requirements
- Logistics
- Working capital

Source: Rashid Kidwai, CEO, Grassroots Trading Network, Mumbai, India.

Again, it is the 'production' end rather than the 'consumption' end of the chain that has been addressed.

The lesson for 'ICTs, Poverty and Export' is very important here. Any sustainable and workable business model in a rural economy necessarily requires the following:

A Product or good that is or can be produced as a surplus
A Middleman or 'consolidator' that helps market that product
Both basic and ICT Infrastructure available at the local level
A Market – local, national or international
Relevant and up-to-date Trade information especially on price and related products, etc.

The question that strategy-makers (both government and private) need to ask is whether in their rural and marginal areas these key components exist? If they do, then the next question would follow, for example in case the ICT infrastructure or MIS for inventory management, the obvious question would be whether the rural folk can use it? In addressing these E-literacy issues, alternates can be examined – from mobile phone networks to Videoconferencing. In doing so the most important consideration must be - the issue is sustainability of the business plan. Can they afford it?

SideBar 4: What works

For an example of what can be achieved, take a look at that part of Kerala's Kudumbashree initiative that is inducting women from below-poverty-line families into the ICT sector through hardware and services enterprises. These create real and direct benefits for poor communities – jobs, incomes, skills, empowerment, gender equalities – in a way ICT consumption projects cannot. Yet this most valuable aspect of ICT's role in development falls under the radar of most development agencies. Those agencies need to take a closer look at what ICT production has to offer. They also need to reconsider their ICT consumption priorities.
Source: Richard Heeks, 2005

Some other notable cases from India are at Annex. They are a mixed bag. Many have been touted as great success stories but as mentioned earlier, even major initiatives such as 'Gyandoot' today have major questions of sustainability raised. It is clear that in rural India -as well as in much of the developing world- realization of the potential of ICTs to help reduce poverty is not guaranteed. Low-cost access to information infrastructure is a necessary prerequisite for the successful use of ICT by the poor, but it is not sufficient. The implementation of ICT projects needs to be performed by organizations and individuals who have the appropriate incentives to work with marginalized groups. Furthermore, grassroots intermediaries or commercial entities with an on-going interest in the rural economy and the involvement of the community are identified as the key factors that foster local ownership and the availability of content and services that respond to the most pressing needs of the poor.

SideBar 5: What did not work

A classic example is Gyandoot; an initiative of computer kiosks in rural India. In 2000, amid much fanfare, this won awards from the Stockholm Challenge and the Computer Society of India. Later studies of Gyandoot in 2002 did not hit the headlines, but they found kiosks abandoned or closed; absurdly low usage rates of once every two-three days; and few signs of developmental benefits.

Towards a Framework for ICT-enabled growth in rural communities

Today there are some clear signs that this enthusiasm for ICT-led growth and poverty reduction in developing countries may be excessive, or at least subject to caveats, especially when the focus is on rural and marginalized areas. Developing countries, therefore, need to think about the challenges and opportunities of ICT-enabled growth and poverty reduction within the larger context of reforming the structure, and increasing the flexibility and diversity, of their rural economy. They need to maximize the reach and access of ICT and create the proper policies, regulations, incentives and investments—both public and private—to promote pro-poor economic growth. In order to do that that such strategy needs to be rooted in a realistic and rigorous assessment of each developing country's particular assets and competitive advantage; the current structure of its rural economy and place in regional and global markets; and its potential for entering new markets or developing new goods or services. If 'e' is to be a useful tool of this strategy the broader growth and competitiveness strategy of the economy, especially for its rural and marginalized areas must itself be realistic. As a step towards that direction the matrix below seeks to present the key components that must be assessed in each developing country to identify gaps and strategies to utilize the so-called potential of ICTs to address trade and business opportunities in such areas.

Matrix to assess ICT preparedness for rural exports

Intervention Level	Key Factors	ICT in rural economy for e-Trade
Micro Level (Enterprise level environment)	**Attitude, culture and use of ICT in Rural Industry**	High level of IT competence is not required however farmers and micro enterprise level awareness and commitments are essential to use ICTs for Business or Export.
	e-Literacy and e-Professionals availability	Basic e-Literacy for users and limited e-capabilities sufficient for agri-business and related service required. E-Trade capabilities again limited to the specific ICT enabled exports.
	e-Business environment including for e-Trade	Conducive Rural Business environment crucial for ICT-enabled transactions for exports, including access to funding.
Meso Level (e-Trade support level)	**Business/Trade Promotional Agencies or NGOs**	Crucial role of NGOs and other support agencies to introduce and help sustain ICT usage in local trade and exports.
	Rural ICT Infrastructure	Affordable and reliable connectivity, V-Sat or broad-band required. Important issue as most developing countries have access mostly limited to urban areas.
	HR Framework	Besides basic education for rural areas, ICT Enabled services and agro-industries require local language skills and specific service skills, not high-level IT skills or education. Therefore government needs to focus on creating specific skills such as for agri-marketing; tourism support services etc.
Macro Level (Policy Framework)	**Government Policy & legal/regulatory framework**	Strong policy and administrative support needed besides a legal framework that protects the interests of the under-privileged.
	e-Government initiatives	Crucial for the rural and marginalised areas as they provide both opportunity and experience in ICT related transactions and help in creating overall favourable ICT environment.
	International e-Trade environment	Global trade environment that promotes developing country agriculture exports essential.

Having carried out an e-preparedness gap analysis as above, strategy-makers need to work towards an action plan. In this context a checklist of actionable points are proposed for such usage.

The "Eight Cs" e-Readiness checklist applied to ICT Poverty and Exports
This checklist contends that the digital economy is not just about connectivity to the global information infrastructure, but about the content that is accessible, the communities that congregate online and offline, the embedded and emerging cultural attitudes, the commercial and other motives behind such activities, an attitude of cooperation and a capacity for creating and governing such digital interaction.

In this checklist each of the parameters all begin with the letter "C" as illustrated in Table 1 below. Here this framework is adapted to rural or marginalised areas in developing countries where the

status or readiness is assessed in a generic manner. This is a useful framework for assessing a rural economy's e-preparedness to use ICTs in different economic sectors, and also to compare how different countries are performing in overall e-readiness in this sector.

The "8 Cs" of ICT in a Rural context

	ICT as an instrument	**ICT as a Services or an industry**
Connectivity	How affordable and widespread are ICTs in the rural area (eg. PCs or Cyber Kiosks, Broadband access, appropriate software) for the rural farmer and micro-enterprise?	Does the developing economy have ICT manufacturing industries for hardware, software, datacom solutions and services? This would ensure low cost of access for the rural and marginalised areas
Content	Is there useful content for farmers and micro-enterprises / Rural-SMEs to use in their daily lives?	Is content being generated in local languages and localised interfaces? Is this being accessed/used for export?
Community	Are there online/offline forums where farmers and micro-enterprises can discuss ICT and other issues of concern?	Is the country a hub of discussion and forums for the worldwide ICT industry?
Commerce	Is there existing techno, legal framework for e-commerce/e-Trade for farmers and micro-enterprises and government? Is such commerce being transacted electronically?	Does the developing country have indigenous e-commerce technology and services? Are they available in rural areas? Are these being exported?
Capacity	Do farmers and micro-enterprises have the human resources capacity (tech, managerial, policy, legal) to effectively harness ICTs for daily use?	Does the rural economy have the human resources capacity (tech, managerial, policy, legal) to create and use ICTs for export?
Culture	Is there a forward-looking, open, progressive culture at the level of policymakers, NGOs, educators, farmers and micro-enterprises and the media in opening up access to ICTs and harnessing them? Or is there nervousness and phobia about the cultural and political impacts of ICTs?	Are there techies, rural-entrepreneurs and managers pro-active and concerned enough to create rural companies and use them for exports?
Cooperation	Is there adequate cooperation between farmers and micro-enterprises, academics, NGOs and policymakers to create a favourable climate for using ICTs?	Is there a favourable socio-political and regulatory environment in the country for using ICTs and creating rural ICT companies, market structures and links with the diaspora population?
Capital	Are there enough financial resources to invest in ICT infrastructure and rural education? What is the level of fresh investments flowing into the rural economy?	Is there a domestic venture capital industry; will it support rural enterprise? How many international or MNC players are active in the local rural economy?

Source: Adapted from Rao and Singh (2005)

Conclusion

> "the message of ICT failure has trickled back to some development organisations. The result has been a backlash against e-development. As we know from gender, talk in these agencies of "mainstreaming" ICTs can be a code word for "ignoring".
> *-Richard Heeks, 2005*

The lesson is that ICT for rural or marginalized area export strategies must focus on the small and micro enterprises and individuals that currently make up a country's basic rural economy: farms, rural tourism infrastructure, small vendors, service providers, traders--as well as those supporting public institutions--utilities, government agencies, municipal authorities--at the local levels of operation that effect law enforcement, official documentation, sanitation, land registry, and so forth. Rather than starting from the top, strategy deliberations should begin by considering which entities must be created or transformed at the lowest level in order to have the impacts intended, and then by determining how technology might realistically be obtained and applied to accomplish those changes. Technology must be applied to create or enhance the ability of these smaller, often isolated enterprises to perform—to provide their existing products and services more widely and efficiently, but also to create new products and services facilitated by the technologies themselves.

The kinds of information and improvements can include the following:

- Useful, reliable and consistent information (costs, market prices, weather, pests, etc.)
- Lower borrowing costs and other costs of operations, streamline clerical or administrative tasks,
- Expanded customer or client base,
- Improved inventory management,
- Increased distribution capabilities,
- Reduced time and expense of dealing with government,
- Increased transparency to reduce corruption & market collusion,
- Improved security and political stability.

At the macro level there is an important lesson. ICTs used at the 'production' end can be a useful tool to address poverty reduction through their catalytic and leveraging effect on earnings opportunities, on educational services, and on welfare provision. But precisely because information exchange is part of nearly every element of an economy, the impact of improvements in the capacity for information exchange will depend critically on how the rest of the economy functions. This suggests the centrality of a holistic approach in evaluating the impact of ICT development. For example, the impact of improved ICT access on farm earnings through increased knowledge of market prices will be muted if there are no roads to carry crops to markets, or no markets because of an unreformed agricultural sector. This lesson should be of particular concern to policymakers in the government, as increased ICT use in government can only be successful as part of a larger reform effort.

Similarly, the level of provision of ICT services and efficient, affordable, and widespread ICT access are dependent on broader policy factors—rules governing FDI and investments, for instance, the provision of reliable electricity, literacy, particularly for the Internet, and a range of other local conditions. ICTs can also benefit from complementarities across sectors. If done correctly, for example, rolling out services to local government offices will greatly reduce the costs of servicing nearby community centers. All these are of course management lessons which strategy-makers need to build into their interventions.

The integration of ICTs in itself will not provoke adherence to poverty reduction trade development but ICTs can support such development. It is particularly suited to the practice and processes surrounding tenure and participation in existing and potential business models. The basic lesson of creating sustainable business models remains at the core of any such initiative.

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