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THE CONTRIBUTION OF ICTs TO PRO-POOR GROWTH

This document is submitted FOR INFORMATION to the POVNET meeting to be held on 4-5 November 2004.

It is also submitted as BACKGROUND document for the ICTs and Poverty Reduction discussion session at the POVNET Infrastructure for Poverty Reduction (InfraPoor) Task Team workshop to be held on 27-29 October 2004 in Berlin, Germany.

Contact: Mr. Ichiro Tambo, Tel: (+33 1 45 24 81 94), Email: ichiro.tambo@oecd.org

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THE CONTRIBUTION OF ICTS TO PRO-POOR GROWTH

Introduction

1. Poverty is widely recognised as multidimensional, encompassing food security, health, education, rights, security and dignity, amongst others. Whilst its resolution should also be multidimensional, in this paper we focus on one of the key factors – economic growth, and pro-poor economic growth in particular. The associated paper “The Contribution of ICTs to Achieving the MDGs” discusses the broader dimensions of poverty. This paper is intended to stimulate discussion regarding the potential contribution that ICTs have to make towards pro-poor growth.

ICTs and Economic Growth

Box 1. Defining Information and Communication Technologies (ICTs)

While the common use of ICTs tends to refer to the newer technologies of phone and internet, the term ICT is best used to also include the more traditional communication media such as radio and television. Digital convergence is gradually bringing devices to the market that include the traditional media (phones with radio, media centres with computing capability and television) which will increasingly blur the distinction between old and new ICTs.

What exactly is Pro-poor Growth?

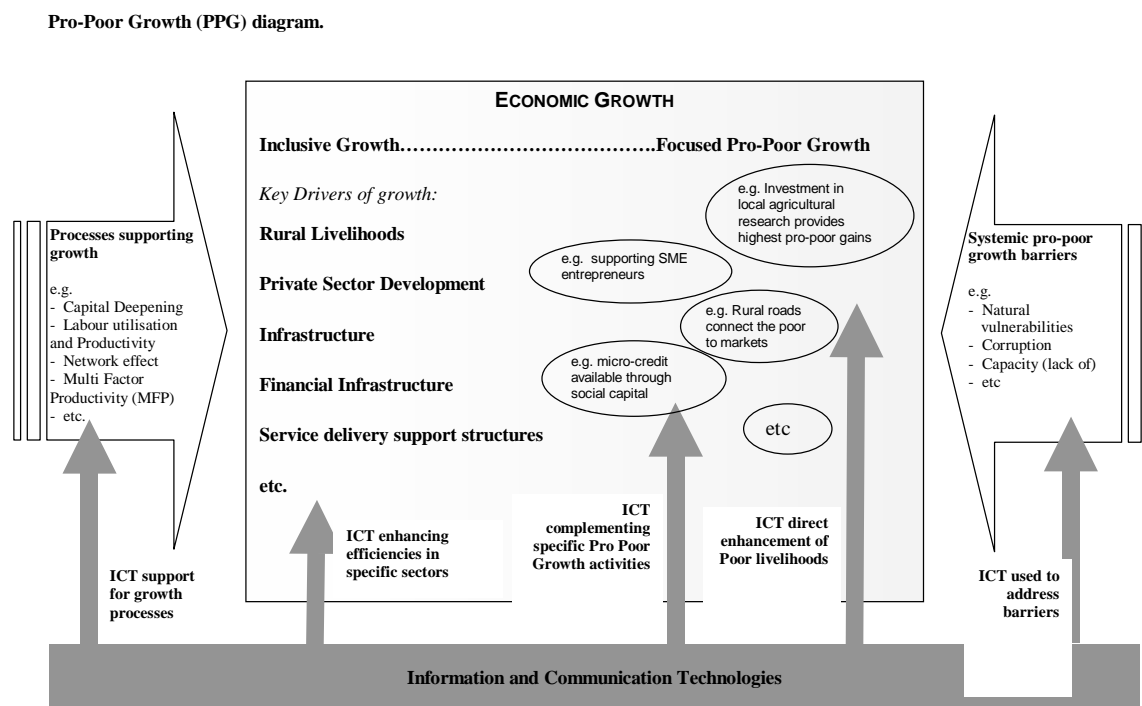
2. In order to discuss the contribution of ICTs to pro-poor growth we need a basic understanding of what is meant by the term. Economists and agencies have various views on pro-poor growth and how it should be defined; alternative views are summarised in a paper by Pernia E., 2003:

“Pro-poor growth has been defined variously. Some refer to it as growth that results in significant poverty reduction, thereby benefiting the poor and improving their access to opportunities (e.g., UN 2000, World Bank 2000, OECD 2001).

*Others equate pro-poor growth with high elasticity of poverty with respect to growth (e.g., Ravallion and Datt 2002). Ravallion and Chen (2003) also introduce the concept of “mean growth rate of the poor”, which seems analytically ambiguous. Pro-poor growth is the type of growth that enables the poor to actively participate in economic activity and benefit **proportionally more** than the nonpoor from overall income increase. This signals a clear departure from the trickle-down development notion of the 1950s and 1960s that meant a gradual top-down flow from the rich to the poor. Klasen (2001, 2) similarly defines “pro-poor growth to mean that the poor benefit disproportionately from economic growth.”*

3. This paper does not address the relationship between economic growth and pro-poor growth, nor whether pro-poor growth can only occur in response to specific pro-poor actions. We do know, however, that some investments return a high yield in terms of pro-poor growth. In order to discuss the contribution of ICTs, and to avoid the details of the debate, we propose the following diagram to give a framework for the discussion.

Figure 1. Contribution of ICTs to pro-poor economic growth



4. The diagram suggests that ICTs can make a contribution to economic growth, and in particular pro-poor growth.

- ◆ ICTs can contribute to strengthening the economy in specific sectors, or play a role in specific processes that lead to economic growth.
- ◆ ICTs can contribute to specific pro-poor actions, or indeed to the livelihoods of the poor.

5. The impact of ICTs on macro economic growth in developing countries has recently been addressed as a topic for research. If pro-poor growth is a sub-set of macro economic growth, then it is important to understand the role of ICTs in macro economic growth.

Reality check - Growth is more likely than Pro-Poor Growth

6. It is clear that ICTs can facilitate economic growth in more developed countries; OECD 2003 identifies ways in which this has been experienced:

- ◆ the technological innovation and high levels of demand generated by an ICT production sector;
- ◆ use of ICTs throughout the value chain has contributed to multi-factor productivity;
- ◆ ICT investment has contributed to 'capital deepening'.

7. However, there are some doubts as to the cause and effect relationship. Only in Telecommunications does there seem to be a clear cause and effect (Roller and Waverman 2003). Also Souter (2004) notes differences in macro economic context between developed and developing countries; the most significant of which may be that developing country economies are largely based on raw material

production and subsistence agriculture, neither of which hold much promise for improved efficiency through the application of ICTs.

8. Some developing countries have proven that concentrating on ICT production and service sectors can help their economies to grow, as adequately demonstrated by Asia's growth in the 90's. While in some cases this growth led to significant poverty reduction, we note the poor benefit proportionally less than the non-poor:

“Analysis of global cross-national data shows that the incomes of the poor move proportionately one-for-one with overall average incomes (Dollar and Kraay 2001). However, because Asia is so vast and diverse, its success story does not apply equally to all countries, nor can the results of crossnational regressions be taken at face value. The relationship between growth and poverty is highly country-specific, as exemplified by the analyses of subnational data for individual countries (Pernia 2001). These indicate that the poor typically gain less than proportionately from increases in overall average incomes, and that other factors (initial conditions and institutions) matter to poverty reduction besides their impact on growth itself”. Pernia E, 2003.

9. We are left then with a conclusion that while some evidence suggests ICTs contribute to general economic growth, there is very little evidence to believe that the poorest countries will be able to fully utilise its potential in increasing efficiencies in its resource based industries. There is also very little evidence to believe that the future impact of any ICT activities that encourage and affect general economic growth, would be more pro-poor than our current experiences – unless policies are introduced to ensure such an affect.

How do ICTs Contribute to Pro-Poor Growth (PPG)

ICTs are multidimensional

Box 2. ICTs as a tool

ICTs offer the potential to share information across traditional barriers, to give a voice to traditionally unheard peoples, to provide valuable information that enhances economic, health and educational activities. However, ICTs are only a tool. Pro-poor development must consider ICTs a means in the fight against poverty, not an end. Many of the genuinely 'pro-poor' aspects of ICT enabled growth may come from indirect aspects.

10. We have noted that while economic growth may lead to pro-poor growth, many commentators believe that there need to be specific pro-poor activities. These interventions are specifically designed to reduce inequalities. How can ICTs contribute to these specific pro-poor actions?

11. There are several sectors that can be regarded as prerequisites (or drivers) for economic growth (see Figure 1). Key sectors that have the potential to enhance pro-poor growth specifically include infrastructure, private sector development (PSD), and rural livelihoods. Since ICTs are generally a means to achieving pro-poor growth, rather than an end, ICTs tend to be complementary to existing practice within each of these sectors rather than substitutionary.

Complementarity of ICTs and other pro-poor Infrastructure

12. The growth in infrastructure, and the resulting connectedness (especially due to roads, but also to electricity) has been shown to be an immensely important factor governing the growth in household income. Studies show that pro-poor growth can be found where infrastructure services help to enhance the productivity of the poor:

1. market expansion and improvement (reduction of transaction costs);
2. reduction of important dimensions of the risks that are inhibiting private investment in manufacturing and agriculture;
3. reduction of the community and household risks from natural and man-made disasters, and health emergencies;
4. contribution to empowerment, to a degree in the short term and especially for the long term, by providing inputs – of communication facilities and mobility, energy and water supply – that are essential for the spread of education and health services to strengthen the human capital of the poor.

13. ICT infrastructure also demonstrates these characteristics, for instance:

1. access to market data can assist market expansion and reduce transaction costs;
2. traders can reduce risk of overstocking by using ICTs to confirm supply and demand;
3. emergency warnings by various media can substantially reduce risks;
4. the combination of rural roads and ICTs can lead to more effective responses to health.

14. Pro-poor growth, therefore, requires extension of infrastructure services to rural areas, often far from major centres of growth, where the majority of the poor reside. Connecting such communities to the economy of a nation requires significant investment in infrastructure which would be delayed, if not absent altogether, if poverty reduction were not a priority i.e. pro-poor growth typically requires greater targeted investment in infrastructure. This holds true for ICTs, where extension of the telecommunication system to the rural poor must be actively encouraged by pro-poor policies. A group of experts claim that this is far from common practice:

"If one looks at Africa the costs of access to ICTs will simply mean that there will never be ICT diffusion as it currently is. There is certainly a clearness that privatization on its own has not been a successful strategy. The lack of effective regulation, to give an extended private monopoly, has actually done many of our countries a great disservice." (Harvard Forum 2004)

15. There is a need for pro-poor policies that ensure the ICT sector covers rural areas.

16. Having said that, telecommunications is the only service which is proving profitable in remote rural areas. Recent evidence indicates that levels of demand amongst rural communities is proving higher than initially expected, so additional investment in infrastructure is likely either to be profitable, or to require less subsidy than expected (e.g. McKemey et al. 2003). The development of new wireless technologies has led to the emergence of innovative business models that may prove effective in rural areas.

17. There is no evidence that ICT infrastructure can substitute for “traditional infrastructure” (roads, energy, water). On the contrary, ICT services can enhance the pro-poor value of traditional infrastructure e.g. roads open up access to markets for farmers, the use of phones can then enable them to select markets more efficiently and conduct remote transactions. Innovative approaches to linking ICT infrastructure expansion to other services are beginning to emerge e.g. the Rural Communication Development Fund in Uganda is linked to the Energy for Rural Transformation project.

Box 3. The use of phones in rural Africa

The use of phones is no longer confined to the rich. For instance, although teledensity remains low in Ghana, Uganda and Botswana, research shows that over 80% of residents in typical rural districts have made at least one call in the last three months. This strategic use of the phone illustrates that the impact of ICTs on poor livelihoods will not directly correlate with indicators of access e.g. number of phones per hundred people. Similarly, the impact on the rural economy can be significant, even with a small number of phones per community. (McKemey et al. 2003)

Market efficiency, private sector development and ICTs for PPG

18. As with infrastructure, private sector development can have a pro-poor emphasis. The focus will be on small and medium enterprises (SMEs). In a predominantly agricultural context, **productivity** depends upon flexible and efficient markets. SMEs are a key part of the private sector in developing nations and entrepreneurship is the basis of the necessary flexibility in the markets (although entrepreneurs frequently lack business management skills and this is an ongoing significant constraint). ICTs offer entrepreneurs new tools which can be used to achieve greater flexibility and efficiency.

19. **Business networks**, especially clusters, are conduits of innovation and increase productivity through specialisation and flexibility. Virtual business clusters are made possible through the use of ICTs. We note that ICT service industries can be fostered through incubator programmes, which tend to form part of national ICT strategies (e.g. The Mozambique Information and Communication Technology Institute (MICTI) in Mozambique). although the impact of such incubators is often limited to better educated people, rather than being overtly pro-poor. Donors are now gaining experience of how ways of working can be made specifically pro-poor. However, decision makers need to be realistic about the potential within their country for developing an ICT sector:

“National strategies which seek to replicate the experience of Bangalore are likely to fail; those that focus on using ICTs to increase the productivity of established sectors in which a country has competitive advantage ... are more likely to succeed”. (Souter 2004)

20. Risk and transaction costs depress **investment**, a driver of growth. ICTs have shown that they can reduce transaction costs, but they can also play a role in combating risk. Many market transactions include a risk of injustice – the wealthy being able to exploit the poor. By enabling the poor to coordinate, to voice their concerns and to lobby decision makers, ICTs can lead to reforms in the justice system. It has been shown that social justice leads to higher and longer sustained growth as well as higher poverty reduction.

21. On a macro-economic level, economies tend to grow when there are open markets for trade, technology and ideas. ICTs offer access to the global markets, better technologies for delivering products and services, and new opportunities for tapping global knowledge. However, production amongst poor communities is mostly traded in local markets, so the impact of these on pro-poor growth is limited; one exception is the development of niche markets e.g. organic produce.

Box 4. The impact of phones on rural markets

Recent research in Mozambique shows that when farmers, traders and wholesalers have access to phones, markets becomes more dynamic. It is not clear that this results in lower prices, but it does mean that products can be moved more quickly, resulting in product diversification e.g. farmers can now find markets for fresh vegetables. However, a counter intuitive finding is that farmers in rural areas have a culture of co-operating together, which extends to sharing of market information, so ownership of a phone does not necessarily give a competitive advantage to a farmer.

ICTs support rural livelihoods for PPG

22. There are three factors which are crucial to **market access** - physical infrastructure (discussed above); relations between producers, traders and consumers; and information on how markets operate, including price fluctuations and consumer preferences. Access to ICTs by the poor through investment in infrastructure must, therefore, be accompanied by the development of content (or services) which facilitate relations and the exchange of market information. With regard to rural livelihoods, pro-poor growth will be enabled by the ICT sector not when the poor have access to technology, but **when the poor have access to useful content** – e.g. market data, agricultural options, educational opportunities (child and adult), health information, governance options, etc. Therefore, pro-poor policies in the ICT sector should include pro-poor content creation.

23. **Remittances** are becoming an increasingly important feature of rural economics, and their role as part of coping strategies of the rural poor are becoming recognised; the G8 estimate international remittances are now approaching \$100 billion annually. Access to ICTs (phones) is an important factor in facilitating the flow of remittances, and it is clear this is true not only for ‘international’ remittances, but also in the flow of cash (and goods) within nations.

24. Social capital is important to multi-spatial households. ICTs offer new opportunities for communication that can be key to alternative livelihood strategies. In addition the combination of traditional broadcast media with modern technologies offers new possibilities. For instance it has been found that where radio has been used for broadcasting of (paid) short verbal messages from individuals to their family members in rural areas it becomes very common and cost-effective.

25. Rural households can earn higher incomes from the production of agricultural goods for **non-local markets**, and ICTs can play a role, along with trade liberalisation and improved transport infrastructure, in opening up new markets. Higher incomes will in turn increase demand for consumer goods. This leads to the creation of non-farm jobs and employment diversification, especially in small towns close to agricultural production areas. Telecommunications in particular can enhance connections between rural and urban populations, although the main benefits are social, *lien* i.e. "keeping in touch".

Box 5. The importance of keeping in touch

In Laos PDR, KfW provided funds for network extensions exclusively to rural areas. The mountainous geography and low population density made the project unattractive from a purely economic point of view. However, as a pro-poor project it demonstrated strong demand from the poor. An impact study found that 80% of users earned less than 1 dollar a day. Their use focuses on contact with family members and information on government issues. By substituting one trip per month by a phone call, the study found that the poor were generating an average surplus of \$77 per year. 75% of rural business users experienced an increase in profit and revenues.

26. We know that spatial proximity to urban markets does not necessarily improve farmers' access to the inputs and services required to increase agricultural **productivity**. Access to land, capital and labour are far more important in determining the extent to which farmers are able to benefit from markets. Similarly, access to global markets through ICTs can only enhance agricultural production in the context of the overall livelihood system. While some agencies are reporting examples of the poor making gains into new markets through application of ICTs, there are also other reports illustrating the barriers that the poor are experiencing and which ICTs cannot overcome.

27. Whilst investment in rural infrastructure (roads, electricity, and telecommunications) has an impact on reducing poverty (mainly due to improved opportunities for non-farm employment, and increased rural wages), it has been shown that investment in **education, agricultural research and rural livelihoods development** can achieve greater impact (OECD DAC, 2004). The donor community is, therefore, being encouraged to make investments in livelihoods research and rural education, to give some of the best win-win investments. ICTs have a role to play in supporting the delivery of such services in rural communities. For example, radio has long been a tool for mass extension of research, and studies (in Vietnam among other places) show that improvements in the yields of crops from households with a radio are often equal to those of households who have regular visits from extension workers. ICTs offer opportunities for data analysis, enhancing planning, for training and dissemination of research, enhancing uptake of new methods and techniques, and for reducing vulnerabilities, eg. weather warnings, input mobilisation.

ICTs increase voice and influence over key PPG policies

28. We have noted that specific pro-poor policies have the potential to enhance pro-poor growth and to reduce inequalities. In order to identify pro-poor policies, the poor themselves need to be involved in decision making. The PRSP process is a key mechanism that can be used to ensure that pro-poor policies are appropriate and effective.

29. The relationship between ICTs and the PRSP process is important; ICTs have three key roles in PRSPs.

1. ICT as a sector. A number of PRSPs are mentioning the need to strengthen the ICT sector (often referred to solely as Telecommunication sector).
2. ICT as a mechanism or tool for enhancing other sectors. ICTs can make a contribution towards pro-poor growth not simply by increasing access through a strengthened ICT sector, but by strategic use of ICTs in other sectors, including content development. The PRSPs and associated processes are opportunities for the poor and their representatives to ensure that developments in these sectors are pro-poor.

3. ICT as a mechanism or tool to facilitate the PRSP process. The PRSP is intended to be a driver of pro-poor growth, so it is essential that the poor are included in the policy making process - ICTs offer opportunities to do this, e.g. talk show radio, contacting their representatives, etc.

30. ICT as a sector can provide the new opportunities for pro-poor action as discussed above. The availability and accessibility of ICT services is itself dependent on the enabling and regulatory environment governing the ICT sector. That enabling environment should be pro-poor and will tend to be if it is part of the PRSP process.

Is this Based on Evidence, Anecdote or Assumption?

31. To summarise the key hypotheses:

- ◆ ICTs can support economic growth. They can support the processes of growth, and enhance key sectors of an economy, although the potential for developing countries remains unclear.
- ◆ The contribution of ICT can be through increased productivity, improved networking, and the growth of the ICT sector (production and service industries).
- ◆ There is debate among economists as to whether a focus on overall economic growth is enough to reduce poverty. We do know that economic growth is not a guarantee of poverty reduction, but it is absolutely essential for sustaining poverty reduction over the longer term.
- ◆ ICTs can be used to support pro-poor actions.
- ◆ ICTs are complementary to other infrastructure – rural roads are still required.
- ◆ ICTs can help private sector development particularly through improved efficiencies (markets).
- ◆ ICTs can help improve access to markets for agricultural outputs.
- ◆ ICTs can give a voice to the poor in PRSP formulation processes.

32. But how much of this hypothesis is based on evidence and how much is assumption based on a few anecdotes?

Policy Implications for donors - a few key recommendations

33. We suggest that until evidence to the contrary is found, that the impact of investment in ICTs is likely to follow the normal pattern of essentially driving overall (pro-rich) growth. The debate regarding the relative contributions to poverty reduction of overall economic growth and of specific pro-poor actions is likely to continue. We note that there is a growing body of evidence linking investment in ICTs to economic growth, but little convincing evidence on the links to pro-poor growth. However, to understand the link between ICTs and pro-poor growth **we need more data**. A number of donors are beginning to address the need for further research in this area.

34. **PRSP processes** should be encouraged to include an analysis and comment on the role of ICTs, not just as a sector within the economy, but on their uptake as complementary factors in pro-poor infrastructure, private sector development, and in rural livelihoods. Donors should pay more attention to an enabling pro-poor environment in ICT-related regulations and policies.

35. Where it has been highlighted in the PRSP, donors should seek to support some **linked infrastructure programmes for rural areas** (e.g. extend the mobile phone network into areas where new rural roads are built). There is a positive role for donors and governments to play in this area, alongside the private sector, if the impact of increasing access to ICTs is going to be genuinely pro-poor.

36. When considering the potential benefits of investment in ICTs, policy makers should be aware of the available “lessons learned” from other sector activities. Since rural livelihoods and education are said to be win-win investments, resources intended to be stimulation of Pro-Poor Growth, and which are ICT orientated, should be **concentrated on rural livelihoods and education**.

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