Version 1.2

**Inclusive development and innovation**

**LIRNE*asia*’s 2005-12 research, with emphasis on smallholder participation in selected castor-seed, gherkin, jute, mango, pineapple, pomegranate, potato, rubber and vegetable supply chains in South Asia[[1]](#footnote-1)**

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## Context

The 2010-12 research proposal that serves as the framework of LIRNE*asia*’s current research was entitled “Innovations for inclusive knowledge-based economies in emerging Asia: Research, dissemination and advocacy by *LIRNEasia.”[[3]](#footnote-3)* The proposal was made up of three modules, the thematic module being “inclusive knowledge-based economies.” Despite the broad sweep of the title, the proposal stated that resource constraints limited the research to six export-oriented agricultural supply chains in three countries:

The focus then is on value chains and how they can be made more efficient and inclusive, using ICTs as instruments of knowledge creation and of reducing costs of codification, transmission and acquisition. Of course, limitations of time and resources means that we will not attempt to make grand theory, but will simply say meaningful and policy relevant things about the specific value chains that we study in detail.

In many discussions, efficiency is the sole factor. We give equal weight to inclusion, in the form of bringing more people into the global value chains, as opposed to recreating the old geographically defined dual economies, except this time with a non-geographical (for the most part), and virtual duality. Currently, many people participate in agriculture (see Table 2 below). Those who participate in global value chains tend to be more prosperous than those who are limited to local value chains. When we talk about inclusion as bringing more people into global value chains, we are not referring in any way to increasing the number of people engaged in agriculture (increased productivity would mean that less people engage in purely agricultural traditional livelihoods); we are talking about global value chains that include more SMEs.

The micro-level work that will be conducted as part of this research cycle may contribute to the KBE/Internet Economy literature, but that is not its principal purpose. It is applied research that seeks to develop specific concrete policy recommendations for governments, regulators, firms (in agriculture, ICT services and other) that do/can function within export-oriented agricultural value chains, and SMEs, informed by the larger theoretical debates. If anything, it will contribute to the rich grey literature on agricultural value chains that we intend to mine in the course of the country studies.

Now that the supply-chain field research has been completed and the synthetic work is underway, this paper seeks to address the larger questions of inclusion and innovation, seeking to bridge the large gap between the macro concerns and the research conducted at the ground level of agricultural supply chains.

## Inclusive development

Nobel Laureate Michael Spence has been a major influence on LIRNE*asia*’s research.[[4]](#footnote-4) The inclusive knowledge-based economies module was shaped by his “conclusion from the work of the Growth Commission that the two major contributors to growth in developing countries in the past decades have been integration to global value chains and increasing application of knowledge to economic activities,” as stated at the second Harvard Forum on ICTs, human development, growth and poverty reduction in 2009.[[5]](#footnote-5) The proposal stated that LIRNE*asia* sought to “drill down into individual value chains to examine the on-the-ground ramifications of Spence’s conclusions.”

The full title of the report of the Growth Commission that Spence chaired is “The Growth Report:Strategies for Sustained Growth and Inclusive Development.”[[6]](#footnote-6) It states:

Growth is not an end in itself. But it makes it possible to achieve other important objectives of individuals and societies. It can spare people *en* *masse* from poverty and drudgery. Nothing else ever has. It also creates the resources to support health care, education, and the other Millennium Development Goals to which the world has committed itself. In short, we take the view that growth is a necessary, if not sufficient, condition for broader development, enlarging the scope for individuals to be productive and creative. (p. 1)

High, sustained growth of the type experienced after World War II by 13 countries (10 in Asia),[[7]](#footnote-7) serves as the anchor for the report.

Growth of seven percent year-on-year for 10 years results in the doubling of the GDP. In the 13 countries, the per capita GNI increased by as much as 18 times during the high growth period, which was more than 25 years. [[8]](#footnote-8) Even if income distribution is skewed (as in Brazil, one of the 13), the magnitude of growth in the lower range of GDP puts more money in most people’s pockets and thereby gets them out of poverty. China, which provides very few free citizen services, is exemplary of how sustained economic growth reduces poverty:

By China’s official poverty standard, the poverty rate (headcount ratio) in rural China fell from 18.5% in 1981 to 2.8% in 2004 and the number of rural poor declined from 152 million to 26 million. Measured in terms of the World Bank poverty standard of (of 888 Yuan per person per year at 2003 rural prices), China’s poverty reduction performance has been even more striking. Between 1981 and 2004, the fraction of the population consuming below this poverty line fell from 65% to 10%, and the absolute number of poor fell from 652 million to 135 million, a decline of over half a billion people . . . . A fall in the number of poor of this magnitude over such a short period is without historical precedent. To put this in perspective, the absolute number of poor in the developing world as a whole declined from 1.5 to 1.0 billion over the same period . . . ; in other words, but for China there would have been no decline in the numbers of poor in the developing world over the last two decades of the 20th century. Measured by the new international poverty standard of $1.25 per person per day (using 2005 Purchasing Power Parity for China), the levels of poverty are higher, but the decline since 1981 is no less impressive (from 85% in 1981 to 27% in 2004).[[9]](#footnote-9)

In China during the high-growth period “every 10% increase in per capita GDP was associated with a 9% fall in the incidence of poverty.”[[10]](#footnote-10) The role of economic growth as a necessary condition for poverty alleviation is further illustrated by the fact that “the only period in the last quarter century when there was an increase in the poverty rate [in China], albeit a relatively small one, was during the 7th Five Year Plan, between 1986 and 1990 when the growth rate fell to less than 4%.”[[11]](#footnote-11)

Government organizations in poor countries tend to lack capacity. One area that they are especially weak in is revenue collection. Even if revenue-collection organizations continue to under-perform, high and sustained growth of the type described above results in a qualitative increase in government revenues. This enables governments to undertake poverty-alleviation actions such as the National Rural Employment Guarantee scheme (USD 8.8 billion for 2011) of India that guarantees 100 days of paid work to eligible persons.[[12]](#footnote-12) Before Indian growth picked up, it would not have been possible to even think of a poverty alleviation scheme of this scale.

Even economists who do not place great stock on poverty alleviation schemes run by government see their value in sustaining pro-growth policies.

Their promise must also be inclusive, leaving citizens confident that they and their children will share in the benefits. In Botswana, for example, Khama handed over diamond mining rights from his own tribe to the government, which gave every tribe in Botswana a bigger stake in the state’s success. Other governments forged an implicit or explicit social contract in support of growth, offering health, education, and sometimes redistribution. These contracts were kept, if not in detail, then at least in spirit. Absent this kind of political foundation, sustaining the policies that promote growth is very difficult if not impossible.[[13]](#footnote-13)

Ianchovichina and Lundstrom also see sustained, high growth as a necessary condition. What they add is a focus on connecting a majority of the work force to growth: “Rapid pace of growth is unquestionably necessary for substantial poverty reduction, but for this growth to be sustainable in the long run, it should be *broad-based* across sectors, and *inclusive* of the large part of the country’s labor force.”[[14]](#footnote-14) Thus high, sustained growth of the economy that is driven by a single sector such as natural resource extraction or even the more heterogeneous service sector will not qualify as inclusive and as contributing to poverty alleviation.

The excluded sector (or sectors) is likely to be characterized by low productivity. In other words, it will employ a lot of people and contribute little to the GDP. Table 1 is illustrative.

**Table 1: Share of GDP and Labor by Sector in South Asia**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Bangladesh (%)** | **India (%)** | **Pakistan (%)** | **Sri Lanka (%)** |
| Share of GDP  (2009) | Agriculture | 19 | 18 | 22 | 12 |
| Industry | 29 | 27 | 24 | 30 |
| Services | 52 | 55 | 54 | 58 |
| Share of labor  (year) | Agriculture | 48.1 (2005) | 52 (2008) | 44(2007) | 32 (2007) |
| Industry | 14.5 (2005) | N/a | 21 (2007) | 28 (2007) |
| Services | 37.4 (2005) | N/a | 35 (2007) | 40 (2007) |

Source: World Bank, <http://data.worldbank.org/>; and Ministry of Finance, Government of India. (2009)

So, the most likely scenario of the kind of exclusionary growth envisaged by Ianchovichina & Lundstrom is growth that excludes agriculture. Given the residual nature of the service sector and the fact that services are implicated in most agricultural and industrial activities,[[15]](#footnote-15) it is unlikely that growth could occur in industry and agriculture, excluding services. Therefore, it is possible to collapse Ianchovichina and Lundstrom’s two conditions into one, namely that growth should be “*inclusive* of the large part of the country’s labor force.” One could even make the condition more specific, by replacing the phrase “the large part” with “a majority.”

Wijewardene distinguishes between inclusive development and pro-poor development:

Pro-poor growth can be attained by giving subsidies to the poor people or giving government jobs to those who join the work force. But it does not ensure inclusive growth because such measures are not sustainable and it focuses only on the poor. Inclusive growth is providing productive and sustainable employment channels to both the poor and the middle class which too is sidelined in normal growth processes and therefore could become dangerous breeders of social unrest and tension.[[16]](#footnote-16)

So we now have a working definition.

Inclusive development occurs when “the necessary condition of high, sustained growth above 7 percent year-on-year and the sufficient condition of a majority of the country’s work force being engaged in high-growth sectors are satisfied.” High growth in a sector (agriculture, manufacturing or services) may be defined as six percent minimum.

High-growth economies such as Turkmenistan and Azerbaijan that are driven solely by natural resource extraction will not meet the test.[[17]](#footnote-17) When a majority of the country’s work force is engaged in the high-growth sectors, we can assume that their personal incomes will rise, moving them out of poverty and enabling them to obtain capacity-expanding services such as education and health. Alternatively, or in addition, the fact that a majority of the work force is experiencing increases in income will make it possible for the government to increase its revenues, making possible delivery of such services outside the market. Governments will even have the wherewithal to engage in serious redistribution on the lines of Brazil’s Bolsa Familia and India’s NREG scheme. Satisfying the sufficient condition is not a simple matter. Public or semi-public goods such as law and order,[[18]](#footnote-18) primary education, healthcare, and public transport[[19]](#footnote-19) may have to be supplied to enable the participation of a majority of the work force in productive sectors.

### Measuring inclusive development

The indicators relevant to measuring inclusive development are GDP growth rates (available in most countries, though with greater or lesser degrees of error), sector growth rates (also available in many countries with varying degrees of accuracy), and sectoral reporting of work force participation (not universally available; and with greater errors present).

An alternative approach would be to measure outcomes such as longevity, child and maternal mortality, levels of education, and so on. The entire Millennium Development Goals (MDG) enterprise is based on this approach. The fact that countries like Sri Lanka and Cuba show good performance in MDGs without the necessary condition of high, sustained growth indicates a problem with the approach. The MDG goals are descriptive of the outcomes of inclusive development, but something appears short when resources are lacking to let people build on the MDGs and extend their capacities. Countries that score high on MDGs but lack the growth condition experience significant net out-migration on a per-capita basis, indicating that people are voting with their feet against the form of development in their countries.

**Table 2: Comparison of 2010 net migration per capita between high sustained growth countries identified by Growth Report and two countries with high social indicators and low GDP**

|  |  |  |
| --- | --- | --- |
|  | 2010 | |
| Country Name | **Net Migration** | **Per Capita Net Migration** |
| Botswana | 18,730 | 0.93% |
| Brazil | -499,999 | -0.26% |
| China | -1,884,102 | -0.14% |
| Cuba | -190,123 | -1.69% |
| Hong Kong SAR, China | 176,125 | 2.49% |
| Indonesia | -1,293,089 | -0.54% |
| Japan | 270,000 | 0.21% |
| Korea, Rep. | -30,000 | -0.06% |
| Malaysia | 84,494 | 0.30% |
| Oman | 153,003 | 5.50% |
| Singapore | 721,738 | 14.22% |
| Sri Lanka | -249,998 | -1.20% |
| Thailand | 492,252 | 0.71% |

Source: World Bank Development Indicators Data

Therefore, while agreeing that the MDG goals are descriptive of the outcomes of inclusive development, there is merit in measuring inclusive development with indicators other than MDGs, namely the parsimonious and almost universally available GDP growth, sectoral growth and labor force data.

## Inclusive innovation

Innovations that contribute to inclusive development may be described as inclusive.

This would include innovations contributing to the achievement of the necessary condition, such as:

* *Policy innovations*. Policy innovations that contribute to sustained, high growth by removing barriers to greater participation by diverse actors (e.g., Deng Xiao Ping reforms in China and 1991 liberalization in India at the macro level; removal or relaxation of license requirements hindering small business and even big business, such as telecom);
* *Market and technology innovations*. Market or technology innovations that reduce frictions in the economy such as the use of mobile phones to reduce waste in Kerala fish markets, thereby increasing consumer and producer surplus and reducing deadweight loss to society.[[20]](#footnote-20) In the aggregate, these improvements contribute to sustained high growth;
* *Process innovations*: Innovations that increase the application of appropriate knowledge to production processes and thereby increase their productivity and thus contribute to sustained high growth; and
* *Integrating innovations*. Innovations that facilitate greater integration to global value chains. These tend to meta-innovations (or aggregations of different kinds of policy, market, etc. innovations).

There are not mutually exclusive categories. For example, many market and technology innovations are also process innovations. It is extremely difficult to identify a stable “unit” of innovation. As a result the distinction between innovations and integrating innovations is a vague and fuzzy. Any and all policy, market and technology innovations may, at the same time, be also integrating innovations.

For inclusive development, innovations would **also** have to contribute to the achievement of the sufficient condition. These innovations would be focused on connecting more members of the work force to growth sectors. At a micro-level this would mean connecting more micro and small enterprises to high-value agricultural, industrial and service supply chains. Disaggregating BPO tasks so that micro enterprises in rural areas with poor infrastructure can participate in business outsourcing value chains is an example from the service sector.[[21]](#footnote-21) LIRNE*asia*’s research on how the conditions of participation for smallholders in export-oriented agricultural value chains can be improved is another.[[22]](#footnote-22)

### Measuring inclusive innovation

How does one know whether inclusive innovation is occurring and what its extent is? Lacking a central data collection point such as the patent office and a precise definition of a unit of inclusive innovation, it is a somewhat daunting task. These problems are shared with service-process innovations.

### Innovation or innovator?

In their discussion of inclusive innovation in India[[23]](#footnote-23) Utz and Dahlman identify four principal groups who contribute to inclusive innovation, defined as “knowledge creation and absorption efforts most relevant to the needs of the poor,”[[24]](#footnote-24) namely, as pro-poor innovation rather than inclusive innovation as defined above.

* Universities & research institutes doing pro-poor research, directly and through specialized agencies, e.g., N-Logue (spun off from IIT Madras);
* Global organizations promoting innovations intended to help the poor, e.g., CGIAR;
* Companies rolling out innovations designed to solve problems of the poor, e.g., e Choupal; and
* Grass-roots innovators, assisted by networks/foundations such as Honey Bee Network to commercialize their innovations.

Given the definition adopted above, the identity of the innovator is of little relevance, except to the extent that conversion of a brilliant idea into a scaled-up product or service that consumers are willing to pay for or a large organization is willing to subsidize on a long-term basis is a challenge for all innovators other than companies. Mechanisms to bridge this gap, funded by angel investors, venture capitalists or governments would extend the reach of inclusive innovations.[[25]](#footnote-25)

There are no apparent advantages that inclusive innovations developed by the poor enjoy over inclusive innovations developed/discovered by non-poor actors. It would be useful to identify any that exist.

The focus should be shifted away from innovators to innovations for another reason. Many inclusive innovations such as the Budget Telecom Network business model[[26]](#footnote-26) are authorless. In fact they are aggregates of innovations rather than just one. They are not “innovated” in a stroke, but are discovered through trial and error. They fit more with a random-mutation/natural-selection model of innovation as proposed by Pagel[[27]](#footnote-27) than with a hero-inventor model. Therefore, it is better to talk of inclusive innovation rather than of inclusive innovators.

## LIRNE*asia*’s research on inclusive innovations

Given its pro-poor, pro-market approach and its claim to want to put hope in people’s hearts and money in their pockets, much of the research LIRNE*asia* has done in the past seven years has been on subjects that fall within the definition of inclusive innovation. They included research on

* Workarounds. Some of these innovations become irrelevant when dysfunctional conditions are removed through reform, e.g., WiFi for backhaul networks in Indonesia[[28]](#footnote-28) and Village Phone Ladies in Bangladesh.[[29]](#footnote-29) Many of these workarounds are potent policy interventions, and play a role akin to that played by arbitrage businesses in triggering policy reform. Some workarounds researched by LIRNE*asia* have become permanent inclusive innovations, e.g., missed calls.[[30]](#footnote-30)
* Inclusive business models, e.g., Budget Telecom Network Model.[[31]](#footnote-31)
* Increasing efficiency and inclusiveness of supply chains in agriculture, the stream of work that started in 2007[[32]](#footnote-32) and which explicitly addresses inclusive innovation.

Given LIRNE*asia*’s focus on policy and regulation, there should be little surprise that most of the focus should have been on Policy Innovations, not at the level of the economy as a whole, but at the level of industry. The promotion of smart-subsidy auctions for disbursing universal-service funds is an example.[[33]](#footnote-33) Market innovations were also discovered and disseminated. The most important was the Budget Telecom Network (BTN) Model, but there were others such as Cell Bazaar.[[34]](#footnote-34) Only one of the research projects is problematic in terms of inclusivity: the work on roaming.[[35]](#footnote-35) But even here one could argue that the market innovation makes roaming less expensive and therefore serves to allow greater use by poorer traders who cross borders. Many of LIRNE*asia*’s findings relate to process and integrating innovations.

The next section focuses on LIRNE*asia*’s work on inclusive innovation in agriculture.

### Inclusive innovation in agriculture

LIRNE*asia* does not generally do research intended to produce innovations, though innovations may emerge unintentionally. Explicit prior mention of innovation was made only in the research proposal that serves as the basis for the current research on agricultural supply chains. In some instances, innovation appeared as a key term in research output.[[36]](#footnote-36)

In its research, LIRNE*asia* applies the tools of economics, law and policy analysis to various domains such as ICT infrastructure, disaster risk reduction and agriculture. It does not engage in agriculture research per se, though it works with agriculture specialists in conducting the research, peer-reviewing it, and obviously, disseminating it.

In one of its first forays into the agricultural domain, LIRNE*asia* commissioned an application for mobile “feature” phones[[37]](#footnote-37) and tested it in the field. The objective was to study how mobile phone applications could facilitate traceability, not to introduce a mobile-phone-based innovation as such. In the end the intervention resulted in some innovations, such as the exporting company moving from a pure paper-based record-keeping model to a partially computerized model and the greater use of mobile phones to maintain relationships among farmers and “first handlers” (in this case, known as Center Managers; they supplied the growing material to the farmers; ensured they applied pesticides, fertilizer, etc. as prescribed; and purchased the harvest). The traceability innovation that was the focus of the research did not catch for several reasons: the actors had not reached the point of being unable to function with the existing system. Most importantly, those with the power to change the incentives in the supply chain were not willing to do so.

In ongoing research (2010-12), we are looking at how smallholders can be better integrated into agricultural supply chains, resulting in inclusive development.

Multiple definitions of smallholders exist. The most common measure is farm size: many define small farms as those with less than 2 hectares of cultivated land.[[38]](#footnote-38) Others describe small farms as those depending on household members for most of the labor or those with a subsistence orientation, where the primary aim of the farm is to produce the bulk of the household’s consumption of staple foods. Yet others define small farms as those with limited resources including land, capital, skills and labor.

The World Bank’s 2003 Rural Development Strategy defined smallholders as those with a low asset base, operating less than 2 hectares of cropland.[[39]](#footnote-39) Smallholders are here defined, following Thapa,[[40]](#footnote-40) as those with less than 2 hectares of land area and those depending on household members for most of the labor. Our approach implies that smallholders are less integrated into agricultural supply chains at present and that they and possibly others in the supply chain would be better served by their integration being improved.

We begin with a vertically disaggregated agricultural supply chain with a few “largeholder” growers and a small number of oligopsonist buyers at a downstream point in the supply chain. This is a real-world situation that has for long been found in many export-oriented agricultural supply chains. It is more realistic to have this as a reference point, rather than a mythical fully vertically disintegrated supply chain, populated by atomistic buyers and sellers. Largeholders are, by definition, well resourced and capable of investing to increase productivity. Their relations with downstream purchasers of agricultural products are likely to be characterized by lower transaction costs (relative to those pertaining to transactions with smallholders) and by greater trust (because they have more to lose if discovered to be defrauding the buyers and also because there are fewer options in terms of buyers than in an atomistic value chain).

Given the above, buyers are likely to prefer dealing with largeholders and to exclude smallholders from the value chain. So, for instance, it is likely that a few largeholders will supply produce for the generally more lucrative export market, while the many smallholders will be left to cater to domestic demand with lower returns. Our objective is to reduce such discrimination. Smallholders will obviously benefit; but buyers and those down the supply chain will also benefit because of reduced volatility in price and supply and greater certainty about quality. The economy as a whole will also benefit.

We seek, first, to identify why smallholders are less integrated into supply chains, or integrated on less favorable terms than largeholders? One obvious reason is that they are too small, perhaps too small to participate (i.e., they are smallholders, not largeholders). Addressing that issue would require making smallholders large and define away the problem we’re trying to solve. Another obvious reason is that smallholders are less resourced and less capable of making the necessary investments. One could provide subsidies to smallholders to address this problem, but it would be prudent to analyze other less obvious causes prior to giving money, because it is quite possible that effective utilization of the subsidies will require other conditions to be satisfied. Or it is entirely possible that subsidies are not needed.

The focus must therefore shift to less-obvious causes and to solutions that address the size and resource problems by means other than converting smallholders to largeholders.

Therefore, the starting point is transaction costs.

One obvious way to reduce transaction costs of dealing with a multitude of smallholders is to agglomerate them. There are two principal ways of doing this:

1. The smallholders form themselves into a cooperative, maintaining individual ownership of land and equipment, but yielding partial or full control of some or all processes of production and marketing. From the outside, the smallholders are invisible; it is the collective that has to be dealt with. This is bottom up.
2. The purchasing entities down the supply chain create larger entities upstream by the use of out-grower or contract-farming models. Smallholders have volition at the moment of entering the system, but once they are in, almost all decisions are governed by the rules of the manager. Again, the smallholders become invisible from the outside. This is a top-down approach.

These solutions address a key aspect of the transaction-cost problem by eliminating the need to individually transact with a large number of smallholders. But other problems remain, and must be solved within the collective entity. By controlling inputs such as seeds, fertilizer and pesticides, the collective entity (cooperative society or outgrower manager) seeks to ensure quality and quantity of production. However, the principal-agent problem cannot be fully solved: since the crop is actually grown by the smallholder, he/she may deviate from optimal practices. He/she may engage in free-rider behavior, depending on how the incentives are structured. If the incentives are unconducive, he/she may even seek to defraud the cooperative/manager. These actions are affected by the degree of commitment to the collective arrangement present and the costs of exit.

Another key insight that emerged from the research is that smallholders have less ability to invest in improved quality; but in addition, they also suffer from a “smallholder quality penalty” (SQP), a reduced payment resulting from perceptions of lower quality. The SQP dampens incentives to invest, keeping smallholders locked in a self-perpetuating cycle of low quality and degraded returns, leading to lower investment. The ongoing research, based on studies of six supply chains in three countries and a meta-analysis of such studies in a fourth country, seeks to identify smallholder inclusion constraints, including knowledge and information gaps as well as trust problems.

The identification of constraints and gaps may catalyze innovation to overcome the constraints and bridge the gaps. If inclusive innovations discovered in the process of the research are disseminated effectively, LIRNE*asia* may thereby also contribute to inclusive development.[[41]](#footnote-41)

1. Support by funds from the International Development Research Centre (IDRC) of Canada and UK Aid of the Department for International Development, UK. [↑](#footnote-ref-1)
2. Chair & CEO, LIRNE*asia*. [rohan@lirneasia.net](mailto:rohan@lirneasia.net). Helpful comments of Sujata Gamage and participants of a LIRNE*asia* colloquium are acknowledged, as are research assistance of Roshanthi Gunaratne and Nilusha Kapugama. [↑](#footnote-ref-2)
3. <http://web.idrc.ca/en/ev-157653-201-1-DO_TOPIC.html> and <http://lirneasia.net/projects/2010-12-research-program/> [↑](#footnote-ref-3)
4. He spoke at LIRNE*asia*’s launch in September 2004: <http://lirneasia.net/2004/09/randy-and-michael-spence/> [↑](#footnote-ref-4)
5. <http://www.idrc.ca/panasia/ev-140355-201-1-DO_TOPIC.html>; see also, Samarajiva, R. (2009, October 12). Great recession: Danger or opportunity for Sri Lanka? *Lanka Business Online* <http://www.lankabusinessonline.com/fullstory.php?nid=1896068867> [↑](#footnote-ref-5)
6. Commission on Growth and Development (2008). *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. Washington DC: World Bank. [↑](#footnote-ref-6)
7. Brazil in LAC, Malta in Europe, Botswana in Africa, and China, Japan, S Korea, Taiwan ROC, Hong Kong SAR, Indonesia, Singapore, Malaysia, Thailand and Oman in Asia. [↑](#footnote-ref-7)
8. Commission on Growth and Development (2008). *The Growth Report: Strategies for Sustained Growth and Inclusive Development*, p. 20. Washington DC: World Bank. [↑](#footnote-ref-8)
9. World Bank (2009). *China: From Poor Areas to Poor People. China’s Evolving Poverty Reduction Agenda***.** Report No. 47349-CN. P. iii. Poverty Reduction and Economic Management Department East Asia and Pacific Region

   <http://www.worldbank.org/research/2009/03/10427760/china-poor-areas-poor-people-chinas-evolving-poverty-reduction-agenda-assessment-poverty-inequality> [↑](#footnote-ref-9)
10. Ibid. p. iv. [↑](#footnote-ref-10)
11. Ibid. p. v. [↑](#footnote-ref-11)
12. Wright, Tom (2011, March). NREGA budget disappoints on the downside. *India Realtime Wall Street Journal*. <http://blogs.wsj.com/indiarealtime/2011/03/01/nrega-budget-disappoints-on-the-downside/> [↑](#footnote-ref-12)
13. Commission on Growth and Development (2008). *The Growth Report: Strategies for Sustained Growth and Inclusive Development*, p. 27. Washington DC: World Bank. [↑](#footnote-ref-13)
14. Ianchovichina, Elena and Lundstrom, Susanna (2009). Inclusive growth analytics: Framework and application. *World Bank Policy Research Working Paper Series* 4851, p. 1 [http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1410472##](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1410472) [↑](#footnote-ref-14)
15. For example, tea in Sri Lanka is counted as part of the agriculture account when it is plucked; and as part of industry when it is processed in a factory located in many cases on the same plantation; and under the service account when it is transported from the plantation. [↑](#footnote-ref-15)
16. Wijewardene, W. A. (2011, October 31). State of SL economy according to IPS: Grow but make it inclusive, *Daily FT*. <http://www.ft.lk/2011/10/31/state-of-sl-economy-according-to-ips-grow-but-make-it-inclusive>/ [↑](#footnote-ref-16)
17. Turkmenistan’s GDP grew at a rate of 10 percent or more year-on-year between 1999 and 2008. Azerbaijan’s GDP grew at 7 percent or more year-on-year between 1998 and 2009. Source: World Bank Development Indicator Database, <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG> [↑](#footnote-ref-17)
18. Research on the rubber supply chain found that one reason most smallholders did not invest in equipment to produce higher-quality Ribbed Smoked Sheet (RSS) was the fact they kept getting robbed and the Police were ineffective. [↑](#footnote-ref-18)
19. Poor public transport is a major problem for BPOs: <http://www.lirneasia.net/wp-content/uploads/2006/09/BPO_Report_ver3-5-Final.pdf>. This has caused major BPOs to operate large van/bus fleets. Small BPOs are at a disadvantage here. Workers from certain areas of cities that are difficult for vans to serve around the clock (road conditions, law and order perceptions) may be excluded from BPO work. [↑](#footnote-ref-19)
20. Jensen, R. (2007). The digital provide: information (technology), market performance and welfare in the South Indian fishers sector. *The Quarterly Journal of Economics, 122*(3): 879–924 <http://qje.oxfordjournals.org/content/122/3/879.short> [↑](#footnote-ref-20)
21. E.g., <http://desicrew.in/> [↑](#footnote-ref-21)
22. <http://lirneasia.net/2011/10/value-chain-research-results-shared-with-vegetable-fruit-producers-processor-exporters-association/> [↑](#footnote-ref-22)
23. Utz, Anuja and Dahlman, Carl (2009). Promoting inclusive innovation (pp. 105-28) in Dutz, Mark Andrew (ed.), *Unleashing India’s innovation: Toward sustainable and inclusive growth*. Washington DC: World Bank. [↑](#footnote-ref-23)
24. Dutz, Mark Andrew (ed.), *Unleashing India’s innovation: Toward sustainable and inclusive growth*. Washington DC: World Bank, p. xv. [↑](#footnote-ref-24)
25. See, for example, <http://www.infodev.org/en/Project.116.html>. See also, Laporte, Nicole (2011, December 25). If moms can’t find it they invent it. *New York Times*. <http://www.nytimes.com/2011/12/25/business/if-moms-cant-find-it-they-invent-it.html> [↑](#footnote-ref-25)
26. Samarajiva, Rohan (2009). How the developing world may participate in the global Internet economy: Innovation driven by competition, in *ICTs for development: Improving policy coherence*, pp. 75-118. Paris: OECD. <http://www.oecd.org/dataoecd/39/15/44003919.pdf> [↑](#footnote-ref-26)
27. Pagel, Mark (2011, December 17) Infinite stupidity, *Edge*. [↑](#footnote-ref-27)
28. Goswami, Divakar (2008). Wi Fi: The network fix, in *ICT infrastructure in emerging Asia: Policy and regulatory roadblocks*, edited by Samarajiva, R. & Zainudeen, A. (pp. 131-58). New Delhi & Ottawa: Sage & IDRC, <http://www.idrc.ca/en/ev-117916-201-1-DO_TOPIC.html> [↑](#footnote-ref-28)
29. Knight John, Malathy (2008). Making a business out of a village phone, in *ICT infrastructure in emerging Asia: Policy and regulatory roadblocks*, edited by Samarajiva, R. & Zainudeen, A. (pp. 116-130). New Delhi & Ottawa: Sage & IDRC, <http://www.idrc.ca/en/ev-117916-201-1-DO_TOPIC.html> [↑](#footnote-ref-29)
30. Centre for Knowledge Societies (2009). *Teleuse@BOP3: A qualitative study*. Colombo: LIRNE*asia*. <http://lirneasia.net/wp-content/uploads/2008/04/qualitativereport.pdf> [↑](#footnote-ref-30)
31. Samarajiva, Rohan (2009). How the developing world may participate in the global Internet economy: Innovation driven by competition, in *ICTs for development: Improving policy coherence*, pp. 75-118. Paris: OECD. <http://www.oecd.org/dataoecd/39/15/44003919.pdf> [↑](#footnote-ref-31)
32. <http://lirneasia.net/projects/2006-07/icts-transaction-costs-traceability/> [↑](#footnote-ref-32)
33. Malik, Payal (2008). Universal service obligations: To incumbents? in *ICT infrastructure in emerging Asia: Policy and regulatory roadblocks*, edited by Samarajiva, R. & Zainudeen, A. (pp. 216-39). New Delhi & Ottawa: Sage & IDRC, <http://www.idrc.ca/en/ev-117916-201-1-DO_TOPIC.html> [↑](#footnote-ref-33)
34. Zainudeen. Ayesha; Samarajiva, Rohan & Sivapragasam, Nirmali (2011) CellBazaar: Enabling m-commerce in Bangladesh, *Information Technology and International Development*, 7(3), special edition: 61-76.

    [↑](#footnote-ref-34)
35. Samarajiva, Rohan (2009, June). Roaming dystopia. *Himal*. <http://www.himalmag.com/component/content/article/535-roaming-dystopia.html> [↑](#footnote-ref-35)
36. Samarajiva, Rohan (2009). How the developing world may participate in the global Internet economy: Innovation driven by competition, in *ICTs for development: Improving policy coherence*, pp. 75-118. Paris: OECD. <http://www.oecd.org/dataoecd/39/15/44003919.pdf> [↑](#footnote-ref-36)
37. As opposed to smartphones. These are low-end phones that do not have the processing power or memory that smartphones do. The application was based on Java applets that were downloaded on to the phones to give farmers drop-down menus that they could use to report actions related to the growing of gherkins in an outgrower/contract farming context. <http://lirneasia.net/projects/2006-07/icts-transaction-costs-traceability/> [↑](#footnote-ref-37)
38. Hazell, Peter, Poulton, Colin, Wiggins, Steve, & Dorward, Andrew (2007). *The*

    *future of small Farms for poverty reduction and growth*. 2020 Discussion Paper

    No. 42. Washington DC: International Food Policy Research Institute. <http://www.ruta.org:8180/xmlui/bitstream/handle/123456789/569/RN107.pdf?sequence=1> [↑](#footnote-ref-38)
39. <http://siteresources.worldbank.org/INTARD/Strategy/20436725/ReachingRuralPoor-ch1.pdf> [↑](#footnote-ref-39)
40. Thapa, G. (2009). Smallholder Farming in Transforming Economies of

    Asia and the Pacific: Challenges and Opportunities. Discussion paper for IFAD Governing Council side event. <http://www.ifad.org/events/gc/33/roundtables/pl/pi_bg_e.pdf> [↑](#footnote-ref-40)
41. This section will be further expanded. Some field reports are at <http://lirneasia.net/projects/2010-12-research-program/knowledge-based-economies/>. Others will added as the editing and peer-reviewing processes permit. [↑](#footnote-ref-41)