INTER-AGENCY WORKING GROUP ON THE PRIVATE INVESTMENT AND JOB CREATION PILLAR OF THE G20 MULTI-YEAR ACTION PLAN ON DEVELOPMENT

"Indicators for measuring and maximizing economic value added and job creation arising from private sector investment in value chains"

(Item 2)

REPORT TO THE HIGH-LEVEL DEVELOPMENT WORKING GROUP

September 2011

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TABLE OF CONTENTS

ABBREVIATIONS

DCED	Donor Committee for Enterprise Development
FDI	Foreign Direct Investment
FIAS	Foreign Investment Advisory Service
G-20	Group of Twenty
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
IAWG	Inter-Agency Working Group
ICT	Information and Communication Technologies
ILO	International Labour Organisation
IPA	Investment Promotion Agency
LDCs	Least Developed Countries
LICs	Low Income Countries
MDBs	Multilateral Development Banks
MDGs	Millennium Development Goals
MYAP	G-20 Multi-Year Action Plan on Development
NGO	Non-Government Organization
ODA	Official Development Assistance (OECD Development Assistance Committee)
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
SIC	Standard Industrial Classification
SME	Small and Medium-sized Enterprise
TNC	Trans-National Corporation
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization (UNIDO)
WTO	World Trade Organisation

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KEY MESSAGES

1. **Private sector investment,** including domestic and foreign direct private investment, when operated in a responsible manner, can be a **key driver of economic development, job creation and inclusive growth**.

2. Attracting and generating private sector investment requires that the general framework conditions, such as **a sound legal and regulatory framework for domestic and foreign investment**, and efficient associated procedures, be in place.

3. Once such a sound framework is in place, developing-country governments, working in collaboration with the private sector itself and with development partners, can maximize economic value-added and job creation from private sector investment by **establishing priorities and focusing scarce resources on specific industries, value chains or segments of value chains.** The indicator framework developed by the G20 High-Level Development Working Group aims to inform this process.

4. In applying this indicator framework, governments need to take into consideration the various **externalities (both positive and negative) that often accompany private sector investment.** These cannot be easily quantified but nonetheless can strongly influence the ultimate development impact of private investment.

5. This **indicator framework** has been developed as a **flexible policy tool – building on a range of instruments already available** to countries such as UNCTAD's Investment Policy Reviews, the OECD's Policy Framework for Investment reports, the World Bank's Doing Business Indicators, FIAS' regulatory reform and investment generation services, UNIDO's work on value chains for development – that developing countries can customize and put to use to promote their specific development goals and aspirations. The indicator framework can also serve as the basis for efforts by international organisations and home countries, in their co-operation with each other and with their partners in developing countries.

INTRODUCTION

In November 2010 the G-20 leaders adopted the Seoul Summit Declaration and recognized *"the critical role of the private sector to create jobs and wealth, and the need for a policy environment that supports sustainable private sector-led investment and growth."* as one of the six core principles of the Seoul Consensus and the Multi-Year Action Plan on Development (MYAP). In this regard, the G-20 leaders committed to *"identify, enhance and promote responsible private investment in value chains and develop key indicators for measuring and maximizing the economic and employment impact of private sector investment"*. To do so, leaders issued the following mandate:

"We request UNCTAD, UNDP, ILO, OECD and the World Bank to review and, consistent with best practice of responsible investment, develop key quantifiable economic and financial indicators for measuring and maximizing economic value-added and job creation arising from private sector investment in value chains. Based on these indicators, these international organizations should make recommendations to assist developing countries to attract and negotiate the most value-adding investment to their economies. (June 2011; Summer 2012)"

This interim report develops the initial part of the mandate, to develop "key quantifiable economic and financial indicators for measuring and maximizing economic value-added and job creation arising from private sector investment in value chains." It was prepared by an Inter-Agency Working Group (IAWG) that was formed to support the G20 High-level Development Working Group with respect to the Private Investment and Job Creation Pillar of the MYAP on Development. The IAWG comprises representatives of UNCTAD (Coordinator), UNDP, ILO, OECD and the World Bank, as well as the co-facilitators of the Private Investment and Job Creation Pillar, Germany and Saudi Arabia, and other invited organizations, including UNIDO and DCED.

This interim report aims to provide a policy tool that can be put to use, with appropriate adaptation as necessary, by developing-country policymakers and serve as the basis for concrete pilot initiatives by the agencies involved in its preparation. The need for tools to identify high development impact policies are at the root of the indicator framework, and responds to specific needs of policy makers, especially in low-income countries (LICs), for concrete and measurable inputs in policy formulation to promote investment and development.

In a second stage, the IAWG intends to test the indicators in up to six low-income countries to develop specific policy recommendations for those countries, but also to use the experience to refine the indicator framework as necessary. This exercise will provide a trial run for the concrete application of the indicator framework in sectors relevant and of importance to individual countries, likely to be countries that are already in the process of reviewing their investment policy framework and business climate, and serve as a basis for broader country and sector use. The IAWG will then prepare a final report that will reflect the outcome of the testing and provide the broader context for the indicator framework and the policy recommendations based on it for the summer of 2012.[1]

This interim report has three main sections. Section I provides a short overview of the broader context, including recent trends in international private sector investment and its impact on development and employment. Section II elaborates a framework of indicators for measuring and maximizing economic value-added and job creation arising from private sector investment in value chains. Section III presents conclusions of the work done for the indicator framework and future work agenda.

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[1] The outcome of the work on Indicators will be a fundamental input for the last item of this pillar of the MYAP: "The G20, MDBs, UNCTAD, UNDP, ILO and OECD will, based on the outcomes of this and other work, assist developing countries, in particular LICs, to develop action plans with the view to strengthen financial markets to boost small and medium enterprises (SMEs), improve the business investment climate, maximize the value-added of private investment and support the regulatory framework for foreign and domestic investment. Existing international investment arrangements between G20 countries and LICs will be strengthened to promote investment in LICs. (June 2012)"

I. GLOBAL PRIVATE SECTOR INVESTMENT, DEVELOPMENT AND JOB CREATION

1. Trends in private sector investment

Private investment, both domestic and foreign, is a major source of growth, employment and development. Over the past three decades there has been a gradual change in the relative role of public and private investment in promoting development and economic growth. Especially since 2000, private investment worldwide, and especially in developing economies and in low-income countries (LICs), has grown quickly, reflecting stronger economic growth and confidence in the renewed emphasis placed on the private sector by many developing country governments (figure 1). A greater role of the private sector and a stronger partnership between public and private investment generally leads to more dynamic economic growth. However, the recent financial crisis has necessarily revived the importance of public investment in stimulating aggregate demand. Despite this recent trend, private investment – domestic and foreign- continues to be an engine of economic growth and the main source of global investment.
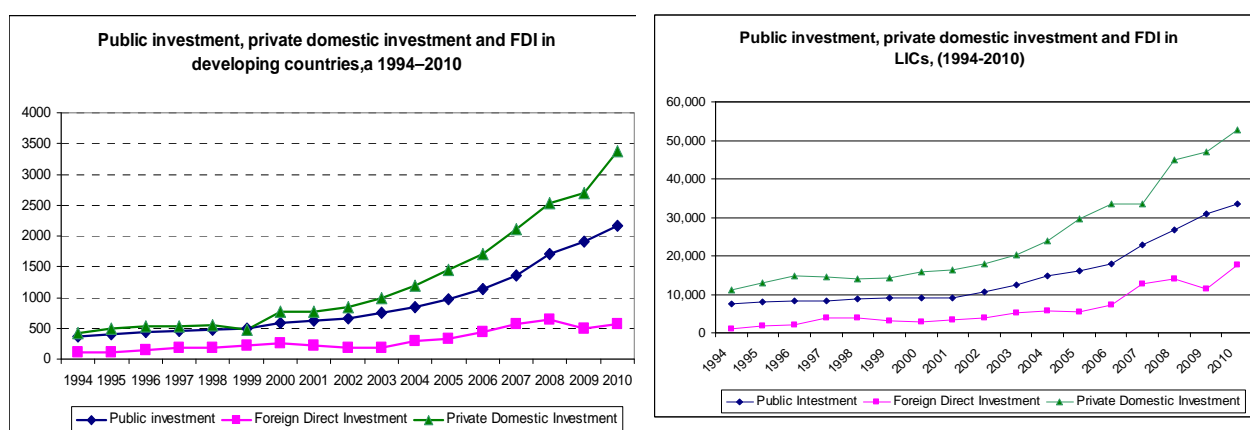
Figure 1. Global public and private investment, 1995 - 2009 (USD billions)
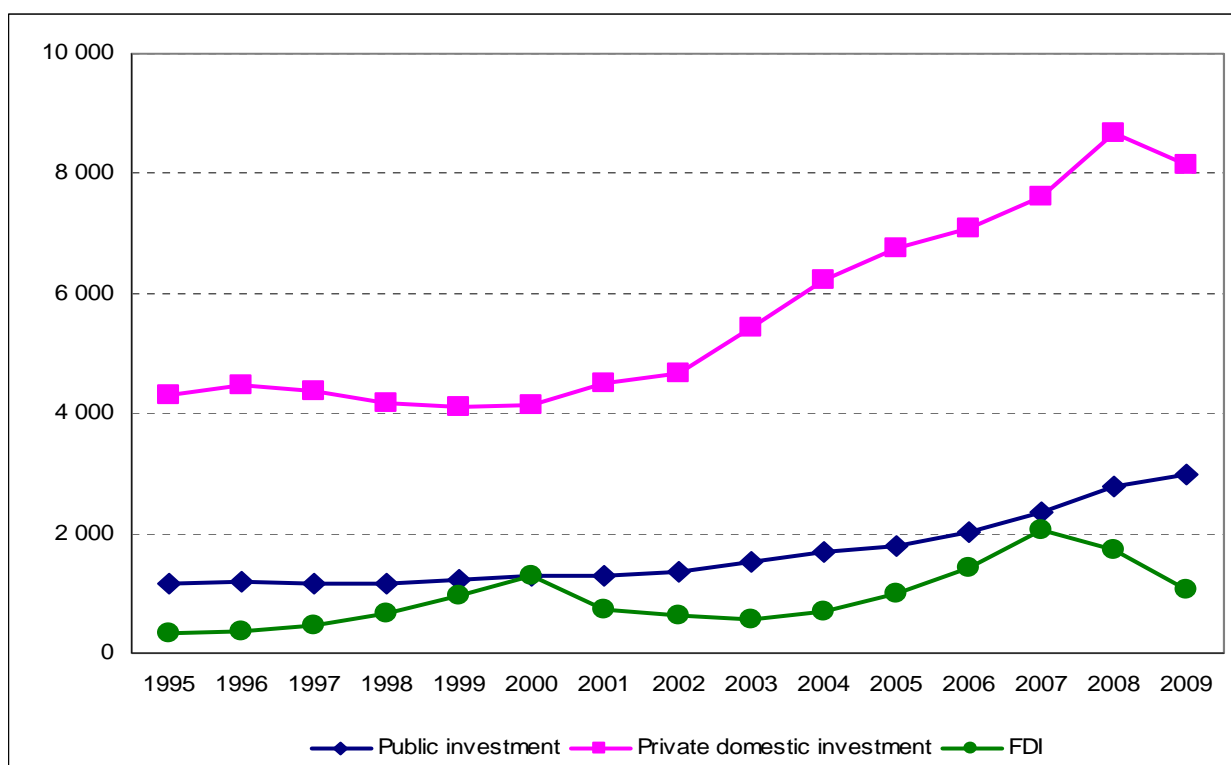
Source: UNCTAD secretariat calculations and estimates, based on data from IMF, OECD and UNCTAD.

While domestic investment (public and private) remained resilient in 2009 in the face of the global economic and financial crisis, foreign investment suffered in 2009 and 2010, especially in LICs. This is significant, as especially in LICs FDI makes up the lion's share of private investment (figures 2a and 2b).

Figures 2a and 2b. Public and private domestic investment and FDI

Source: UNCTAD secretariat calculations and estimates based on data from IMF and OECD (public and private investment) and UNCTAD FDI/TNC database (FDI inflows).
a Private direct investment is defined as the difference between private investment, measured as private gross fixed capital formation and FDI flows.
Note: The data should be interpreted with caution since FDI flows do not necessarily translate into capital formation.

FDI as a share of total private capital flows to developing countries rose from 60% in the 1990s to more than 80% today. Similarly, FDI as a share of total capital flows (including ODA) to developing countries has risen from less than 50% to over 70%. Clearly, while private investment is important as a whole (i.e. including domestic investment), in low-income countries the role of foreign investment is particularly important. Not only is it the most important component of private investment, it also offers valuable contributions for long-term growth through transfer of finance, technology and connectivity to international markets. This latter aspect – integration of LICs in global value chains – makes foreign investment particularly relevant in the context of the G20 mandate at the basis of this report.

Although foreign private investment in LICs in recent years was on average equivalent to 28% of gross fixed capital formation (GFCF), it was concentrated in few countries, and mostly in those endowed with natural resources. More than half of FDI to LICs is directed towards extractive industries (figure 3). Therefore, given the geographic and sector concentration of FDI in LICs, it is imperative that private investment be channeled to a broader number of low-income countries and industries, with a view to supporting sustainable development for a wider range of stakeholders.

Figure 3. Greenfield projects in developing countries and LICs, 2003-2010 (per cent)
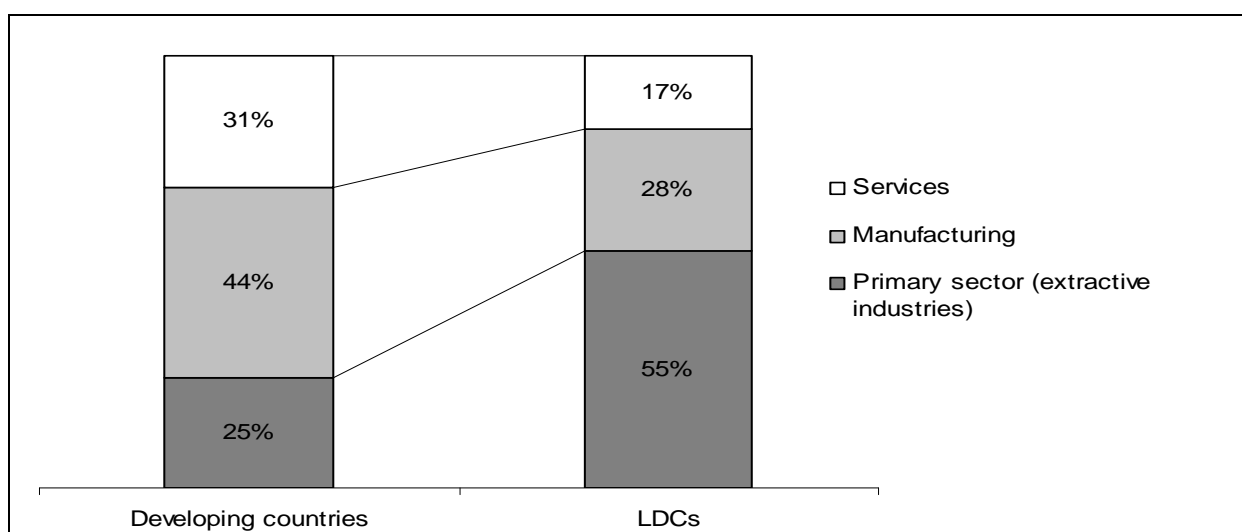
Investment policy measures that include incentives and restrictions adopted by an increasing number of developing countries and that target specific priority sectors for domestic and foreign direct investment reflect the need to broaden the sector-base of investment. Examples of this sector specific investment promotion approach found by UNCTAD are set out in Box 1. UNCTAD's recent survey of Investment Promotion Agencies across the world also indicates that an increasing number of countries are implementing sector-specific measures to promote investment (figure 4).

Box 1. Examples of Sector-Specific investment promotion policies

China in April 2010 issued the "Further Views on the Utilization of Foreign Capital". Foreign funds are encouraged to flow into high-end manufacturing, hi-tech and eco-friendly sectors (new energy, energy efficiency, outsourcing, and environmental protection industries) and to the central and western areas of the nation with a particular focus on environmentally sound and labour-intensive businesses. The new guidelines also support foreign-funded companies through more favourable policies, including an array of tax incentives. Vice versa, the guidelines restrict investment into some environmentally unsound project types and in sectors suffering from over-capacity.

FDI has also become a significant part of **India's** national development strategies. Sector-specific guidelines have been issued for various sectors, including tourism, banking, and housing, in order to increase the flow of FDI in the country. FDI is allowed freely in most sectors, with a few exceptions. For instance, in the banking sector FDI is allowed up to 20% (and in the case of investment being made by non-residential Indians it is up to 40%). Agriculture and Retail are other sectors where restrictions remain.

In **Chile** several economic activities have been identified as important sectors in which foreign investment is encouraged. Those sectors are off-shoring, food industries, mining, biotechnology, renewable energy and emerging industries such as aquaculture and wineries.

In **Malaysia** the Economic Transform Programme (ETP) provides strong focus on a few key growth engines by prioritising investments in the 12 National Key Economic Areas (NKEAs): Oil, gas and energy, palm oil, financial services, tourism, business services, improving electronics and electrical, wholesale and retail, education, healthcare, communications content and infrastructure, agriculture; and, Greater Kuala Lumpur/Klang Valley.

In **Mexico** the strategic sectors for ProMéxico (Investment Promotion Agency) are aerospace, automotive assembly, auto parts, electronics, software development, biotechnology, renewable energy and real estate and retirement homes.

Source: UNCTAD.

Figure 4. Fiscal or financial incentives in selected industries as highlighted by IPAs

Source: UNCTAD's annual IPA survey.

Note: Out of 234 countries and economies, IPAs from 116 countries provided information on sector specific fiscal and financial incentives, including agencies from 26 developed countries, 83 developing countries and 7 transition economies.
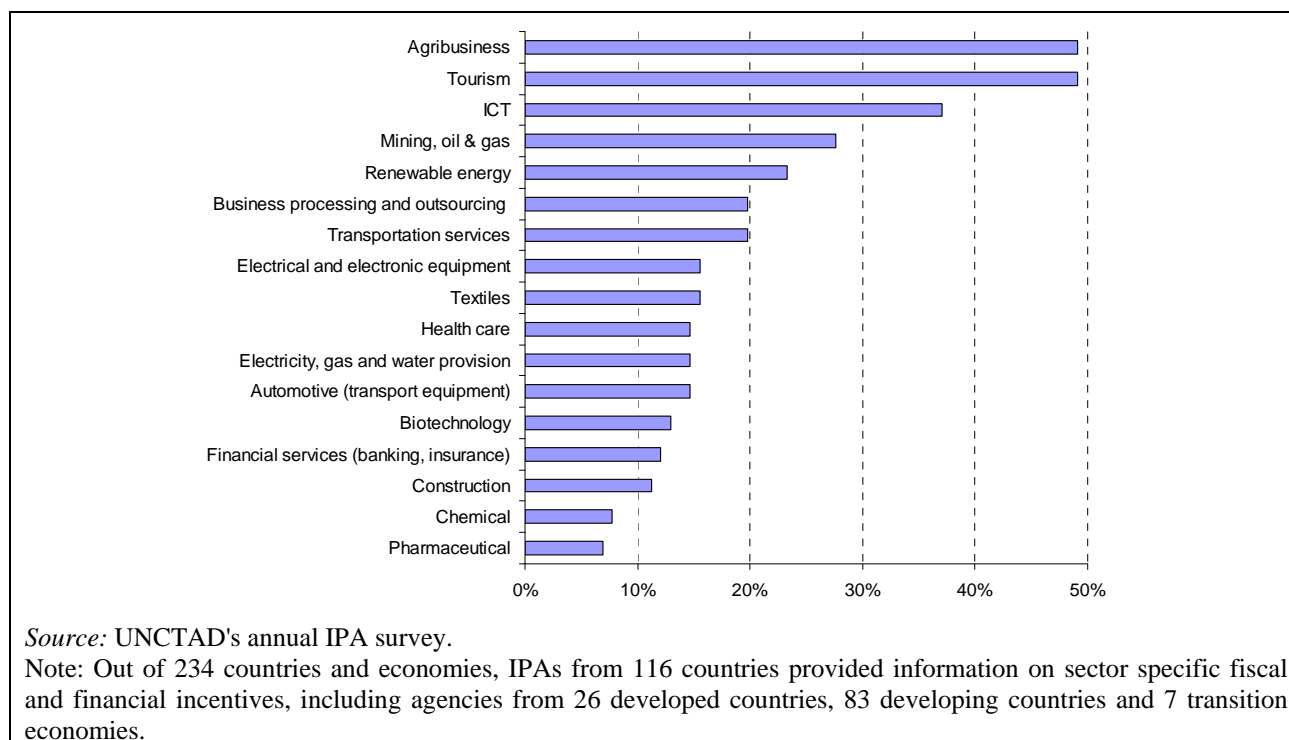
Some sectors such as agribusiness and tourism stand out as common targets for investment promotion. Figure 4 highlights the most commonly chosen sectors of value chains as identified by Investment Promotion Agencies. The global survey of investment promotion agencies also shows different regional preferences as regards the targeted industries. For instance, countries in Africa and Latin America and the Caribbean show a relatively focused approach and in particular target tourism, agribusiness and extractive industries. Countries in Asia, on the other hand, have a much broader approach. The sectors that they target include agribusiness and tourism, but also ICT, textiles, electronic equipment and the automotive sector. Developed countries also have a more focused approach, mainly focusing on renewable energy, ICT and biotechnology.

These examples of sector specific investment priorities reflect the relevance of tools and instruments that help policymakers identify the right targets for investment promotion, as well as government and market failures that need to be addressed to maximize the development return of investment.

9

2. The impact on development and job creation

As the Monterrey Consensus emphasised, investment is a powerful catalyst for innovation, economic growth and poverty reduction. Much more investment will be needed if developing countries are to reach the Millennium Development Goals (MDGs).

It is widely accepted that expansion of private investment, both domestic and foreign, is a main impetus for economic growth. For example, a number of countries that have had high growth rates through the past two decades have also had consistently higher private investment than countries that did not experience such sustained economic expansion Greater levels of private investment tend to accompany greater levels of GDP growth and development. As domestic private investment remains the principle source of global capital formation (figure 1), its importance to the growth and development strategy of developing countries is paramount.

Figure 5. Private investment as a share of GDP (per cent)
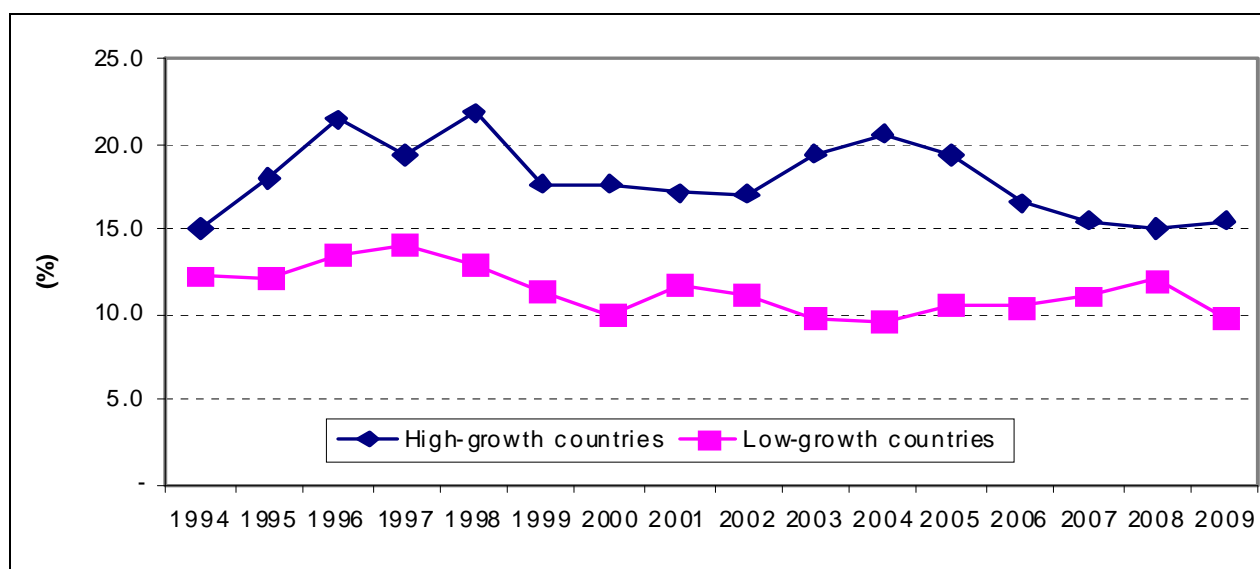
Source: UNCTAD calculations and estimates based on data from the IMF/WEO, OECD and UNCTAD FDI database.
Note: Low-growth countries have an average of growth rate of less than 2% per annum, and high-growth countries those with average growth rate of more than 8% per annum.

The role of investment in determining GDP growth is critical and unambiguous. Higher investment leads to higher GDP growth. And each additional percentage point of GDP growth will generate additional employment. Therefore raising the quantum of investment, will raise the quantum of employment. This increase in the quantum of employment will be through both a direct impact on employment and via secondary, indirect multiplier effects. The increase in the quantum of employment will also reduce underemployment, and improve wages.

Therefore the correlation between the quantum of investment and the quantum of employment generated, can be taken as virtually axiomatic. Indeed testing this for 48 developing countries, for which such data was available, over three five year periods from 1980 to 2007, shows that in a majority of these country episodes, investment growth, GDP growth, and

employment growth moved together – were convergent, rather than moving apart which would be divergence (Annex II).

However, a policy challenge emerges when we move from examining the quantum of investment and employment, to examining growth rates in investment, GDP and employment. The growth rates of investment and GDP, need not be matched by growth rates of employment.

As countries' GDP and levels of investment progress, the additional beneficial impact of further investment on job creation declines with increasing capital and technology intensity of new investment projects. This is confirmed by the ILO analysis on Investment, GDP and Employment included in Annex II, which examines the relationship between investment, GDP and employment for 42 developing countries. *An important objective of the work in this report is thus to ensure that as GDP and investment increase, sustainable job growth does too.* Focusing scarce investment resources on the most value added sectors and on those with the highest impact on sustainable job creation is one avenue to do so.

As countries adopt sector specific investment – both foreign and domestic - promotion strategies and policies, it is of the utmost importance to ensure that they are directed toward sectors and value chains that will favorably impact the most vulnerable. This is especially relevant for low income countries, especially in light that, according to the World Bank, the crisis will have caused approximately 64 million more people in the developing world to fall into extreme poverty[2] by the end of 2010, relative to the precrisis trend.

3. Conclusion

In summary, private sector investment is a major source of growth. Foreign investment is a major component of private investment and accounts for a significant share of capital formation, *especially in LICs*. In those same LICs, investment is skewed towards extractive industries, and broadening the sectoral investment base is a major priority. Sector-specific policies to achieve that objective are proliferating. Such policies become all the more important under investment-recovery scenarios with more limited job creation. An important aim of such sector-specific policies is to achieve better integration of developing countries and LICs into global value chains. This means either focusing investment promotion efforts on specific value chains or, more often, focusing on specific activities with such value chains (value chain segments) in which a country may have a competitive advantage.

Thus developing country governments can "maximize economic value added and job creation" by prioritizing and focusing scarce resources on those value chains and value chain segments with the highest potential for generating inclusive economic growth, also with a view to economic diversification. The purpose of the indicators will be to inform this process.

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[2] Defined as living on less than $1.25 a day

II. MEASURING AND MAXIMIZING ECONOMIC VALUE-ADDED AND JOB CREATION FROM PRIVATE SECTOR INVESTMENT

1. Context and purpose of the indicator framework

Generating private sector investment for development requires an economic environment and policy setting in which private sector operators can thrive and realize a fair return on their investments. A conducive policy framework for investment in the overall economy is a prerequisite for attracting private sector investment.

Within such a framework, and in the context of broader development strategies, governments can improve the development outcome of investment by establishing priorities and focusing scarce resources on specific sectors of the economy, specific value chains, or elements of value chains, while taking into account economic diversification. The indicator approach helps governments establish such priorities. In addition, the indicator approach aims to assist developing-country policymakers to attract and negotiate the most value-adding investments, by providing a basis of information on expected development contributions of investments that can be used, for example, to inform policymaking on targeted investment attraction, tax incentives, or other support measures for investors.

To achieve these objectives, indicator measures and data in and by themselves are not enough. They must be embedded in an overall approach that, within the boundaries of a general development strategy, defines policy recommendations and an action plan to attract and negotiate the most value-adding investment. Such an overarching approach is summarized in figure 6.

Figure 6. Developing Sector-Specific Investment Priorities: a policymaker's approach

| Set the context: Development strategies and investment priorities | Apply the indicators: Focusing sector development priorities | Develop sector-specific policies: Maximize investment impact | Define the Action Plan: Attract and negotiate the most value added investment |

The indicators then become a lens through which to understand and identify high-development-impact investment. The framework is a tool for policy makers to pursue targeted sector strategies that contribute to strong, sustainable and balanced growth and to identify gaps or (market- and policy-) failures which need to be addressed to maximize the positive impact of investments.

The assessment of broader development strategies and the role of investment in such strategies (step 1 of the figure above) is a standard component of investment policy reviews and investment and business environment assessments as carried out by the agencies involved in the IAWG. Such assessments not only look at the general investment framework but also at institutional capacities, strengths and weaknesses of the macro-economic framework, and areas such as infrastructure development, education and access to finance for local enterprise. As mentioned above, these aspects are all crucial prerequisites for attracting private sector investment, before any sector-specific or targeted investment attraction policy can yield its beneficial effects. The indicator framework therefore reaps its greatest benefit in parallel or as part of such broader investment policy reviews.

The traditional use of value-chain analysis in a policymaking context is to identify government and market failures holding back the development of a sector/industry in a given country that can be addressed by policymakers. The implied use of value chain analysis in this report is different, it is to identify gaps in a developing economy's coverage of the value chain, and in the actual vs potential benefits to the economy, to steer policymaking with regard to attracting private sector investment. Nevertheless, in the 3rd step of the approach outlined above, some policy recommendations may follow that aim to address market failures or gaps in existing value chains where job creation and value added may be optimized. Recommendations may concern the regulatory framework, infrastructure, lack of access to finance, etc., as well as an indication of sources of technical and other assistance that may be required. However, the final objective of the indicator framework is to provide countries with a roadmap towards attracting investment in value chains or value chain segments that yield the highest value added and the most jobs, and to provide a tool to negotiate and attract that investment (step 4). The broad policy recommendations in this regard will centre on four broad lines:

1. **Upgrade**: the results may show that engaging in a higher value added component of a value chain would contribute to a greater development impact of investment. Actions may include extending protection of intellectual property rights or building skills in a certain area.
2. **Extend**: an existing value chain may not be providing full potential job creation and value added impact because of its breadth. The framework can help identify where adding adjacent activities in the value chain may maximize value added and job creation impact. Actions may include facilitating import/export regime or new incentives for investment in the new segments of the chain.
3. **Optimize**: results may indicate that certain links of the value chain are not optimal, and that greater local value added is achievable. Actions may include adjustments to fiscal and tax regimes or to labor market frameworks.
4. **Target**: indicators may result in the identification of a new value chain or sector that the country has the required endowments for but that has not been developed, or adequately developed. Actions may include changes in industrial policies or creation or adjustment of investment incentive regimes or policies.

Within these broad policy lines, the specific measures and instruments that policymakers may apply are similar to those generally included as recommendations in investment policy reviews and assessments of investment and business environment as carried out by the IAWG participating agencies. They may be summarized (non-exhaustively) as in table 1.

Table 1: Policy instruments for targeted or sector-specific investment attraction and negotiation

	Policy instruments
Providing "hard" and "soft" infrastructure in support of identified "winning" value chains or value chain segments	*"Hard" infrastructure*: •Providing land, power, water, and telecommunication. •Building rail roads, ports or airports to lower transportation cost. •Health facilities. •Providing test bed facilities for R&D (e.g. wireless communication, software development). *"Soft" infrastructure*: •Guarantee of property rights (incl. intellectual property). •Education and training on industrial skills and language. •Standard setting, including sanitary and phyto-sanitary standards. •Financial markets building. *What is actually needed depends on (1) the type of business activity to be developed (e.g. contract manufacturing, services like call centres, agricultural production),(2) the technology and skills required for it, and (3) the form of TNC involvement …*
Additional "incentives" to target specific activities	*Depending on the concrete activity, incentives could be provided for domestic firms or foreign investors:* •Establishing special economic zones or industrial parks to promote specific activities in specific regions. •Setting up incubation programmes to assist the entry of domestic firms into specific industries or activities. •Support for cluster building to promote cooperation between domestic firms which are in the same industry or performing similar activities (e.g. auto-parts manufacturers, floriculturists, embedded software developers). •Match-making services between domestic and foreign firms. •Financial, fiscal support or government guarantees for specific activities or technologies – risk financing (e.g. development of renewable energy or green technologies, building global or regional headquarters, introducing state-of-the-art technologies). •Public R&D integrated in private sector activities and targeted to their needs.

Source: UNCTAD.

Besides being a valuable tool for developing governments, and especially low income countries, the indicator framework can be used by different development partners:

- By international organizations: in the context of their investment policy reviews and other advisory and capacity building activities;
- By bilateral donors: in the context of their efforts to support developing countries maximize the benefits from private investment;

- By home countries: in their efforts to promote more and better private investment in developing countries; and, potentially
- By private sector companies and organizations: in their efforts to identify investment opportunities in priority sectors for governments and other above actors, and in their pursuit to enhance their contributions to sustainable development.
- By the NGO and civil society community to promote understanding of the economic and development impact reasoning behind policy decisions so they can better identify areas to support development impact of private investment.

2. The indicator framework

In the G-20 Multi-Year Action Plan on Development, the G-20 asked agencies "*to review and, consistent with best practice of responsible investment, develop key quantifiable economic and financial indicators for measuring and maximizing economic value-added and job creation arising from private sector investment in value chains.*"

This report proposes a focused set of key indicators (Table 2) that are the most direct expression of the core development contributions of private investments, including direct contributions to GDP growth through additional value added, capital formation and export generation; entrepreneurial development and development of the formal sector and tax base; and job creation. This indicators also address labour, social, environmental and development sustainability aspects (the latter includes aspects such as crowding in/out effects, technology and know-how transfer).

The indicator framework proposed in this report is not a one size-fits-all construct. It is meant to serve as a tool that countries may adopt and adapt in accordance with their national economic development priorities and strategies. It is not to be used as a basis for any form of conditionality.

Whereas the economic indicators of value added and job creation are fully quantifiable, applicable and comparable across industries and value chains, the sustainable development indicators are at least partially qualitative and not fully comparable between different value chains or value chain activities. The sustainable development indicators facilitate evaluation of an investment from the perspectives of efficient use of resources, such as water and energy, and international competitiveness. They should thus be taken into consideration dependent on the industry, the value chain segment or activity, and country-specific priorities. Nevertheless they can provide valuable insights, for example where priority or desirability is to be evaluated between equivalent investment projects.

The choice of indicators is based on relevance particularly for low-income countries. They were chosen because they reflect direct impact on economic value added and employment of a given investment, and recognize potential difficulties associated with data collection, even in more advanced economies. Indeed, even if data will be imperfect in many cases, this approach should nonetheless lead to a better empirical understanding and basis upon which policy is formulated. The data gathering process and application of the framework will undoubtedly differ from country to country and sector to sector, and different approaches and procedures for getting

to the indicators will be mapped out as specific studies are developed (see chapter 3 of this report).

The indicators can measure the economic value added, job creation and sustainable development impact of investment in two closely related ways:

- Assessing the contribution of existing investment to development (as such, the indicators can also be used to monitor and evaluate investments);
- Estimating the potential contribution to development of future investments in particular areas, to inform the process of attracting and negotiating the most value-adding investments

The indicators are not intended as a one-size-fits-all framework. Different indicators will have greater relevance for different countries depending upon the development context and the objectives being pursued. For example, at very early stages of development, pure GDP contribution and job creation may be more relevant; at more advanced stages, quality of employment and technology contributions may gain relevance. There may be many other potential indicators, some of which will be more relevant in certain contexts. Many of the development, social and environmental implications and impacts of private investment cannot be measured easily through simple quantitative indicators; this limitation to the indicator approach needs to be taken into consideration and mechanical application of the indicators for policy formulation should be avoided.

Table 2. The indicator framework

Area	Indicators		Detail	Type	Applicability
Economic Value Added	1.	Total value added	• Gross output (GDP contribution) of the new/additional economic activity resulting from the investment (direct and induced)	Measurable and quantifiable	Cross-industry
	2.	Value of capital formation	• Contribution to GFCF; this is a direct GDP contribution, therefore the value of the (prospective) investment itself is an indicator in its own right		
	3.	Total and net export generation	• Total export generation; net export generation (net of imports) is captured by the value added indicator but may still be a useful additional indicator		
	4.	Number of formal business entities	• Number of businesses in the value chain or value chain element supported by the investment; this is a proxy for entrepreneurial development and expansion of the formal (tax-paying) economy; may include measurement of average business size		
	5.	Total fiscal revenues	• Total fiscal take from the economic activity resulting from the investment, through all forms of taxation		
Job creation	6.	Employment (number)	• Total number of jobs generated by the investment, both direct and induced (value chain view), dependent and self-employed		
	7.	Wages	• Total household income generated, direct and induced		
	8.	Typologies of employee skill levels	• Number of jobs generated, by ILO job-type, as a proxy for job quality and technology-levels (including technology transfer)		
Sustainable development	9.	Labour impact indicators	• Employment of women (and comparable pay) and of disadvantaged groups • Skills upgrading, training provided • Health and safety effects, occupational injuries	Qualitative or partially qualitative	Industry-specific
	10.	Social impact indicators	• Number of families lifted out of poverty, wages above subsistence level • Expansion of goods and services offered, access to and affordability of basic goods and services		
	11.	Environmental impact indicators	• GHG emissions, carbon off-set/credits, revenues from carbon credits • Energy and water consumption and efficiency, use of hazardous materials • Enterprise development in eco-sectors (e.g. eco-tourism, renewable energy,…)		
	12.	Development impact indicators	• Development of local resources • Technology transfer (proxied above by job skill levels and capital intensity) • Potential crowding in/out effects or risks		

17

3. Putting the indicators into action - a User Guide

The indicator framework will identify sector or value-chain specific policy recommendations and actions to assist developing countries in achieving the highest value added private investment.

In the first instance, the measurement of the contribution of existing investment to development and job creation can serve to highlight ways in which a government's policy framework for investment is having an impact at the micro level. This sort of analysis can be used to compare and benchmark the performance of the sectors being analysed with the same sectors in other countries as well as over time.

Following this initial diagnostic audit, a natural extension of the analysis would involve a consideration of what the development implications would be of private investment that would broaden (i.e. upgrade, extend, optimize, target) the existing value chain 'footprint' in a given economy. Whereas the first step involves measuring the contribution of existing investment and business activity to development and jobs, this second stage involves the development of scenarios to estimate the contribution of future investments to development. These scenarios can help policy-makers by highlighting areas in which new investments could make a greater positive contribution to development.

The approach begins with a country's general development and investment strategy to identify sector specific action priorities based on the highest value added and sustainable job creation impact. The process will include the analysis of market (including, where applicable, risks, price volatilities, diversification of sectors and markets, etc.), value chain and policy gaps and failures and will present specific policy options to address them in favour of maximizing investment impact. Based on these quantifiable indictors, an action plan to attract and negotiate the most value-adding investment is defined. This approach is outlined in figure 7, and detailed below.

The road to a "Sector Specific Investment Promotion Policy" based on quantifiable indicators to achieve the highest value added and job creation impact of private investment is made up of several steps and activities, detailed below.

1. **Identify value chain or sector**: The first step is to narrow the scope of the assessment through the indicator framework. On the basis of the broader development strategies and existing investment targets, as identified through, for example, an investment policy review, the specific value chains and value chain segments subject of the analysis must be identified. Questions such as what is the sector's current contribution to GDP, its domestic and international growth potential, and existing capabilities and factor endowments will be relevant, as are elements such as its current and potential contribution to exports (and therefore generation of foreign exchange), jobs, and poverty reduction. The importance and weight given to these questions in value chain selection will depend on the specific country context and objectives.

Many countries have identified specific sectors through value chain analysis, competitiveness studies or other methods. Countries may wish to choose these sectors to verify their contribution to economic value added and job creation. The identification of the value chain may also be done through interviews with domestic and foreign private sector representatives, as well as with government officials, to identify sectors where country competitiveness is perceived.

Once the value chain has been selected, it must be mapped in detail. Understanding domestic and international trends and issues in the specific value chain and of the specific country is central at this mapping stage. This may include identifying the activities performed in each stage or link of the chain, inputs, outputs, value added, spatial relationship of the activities (logistics, infrastructure) and structure of economic agents that form part of the value chain.

Figure 7. Steps in developing a Sector-Specific Investment Promotion Policy
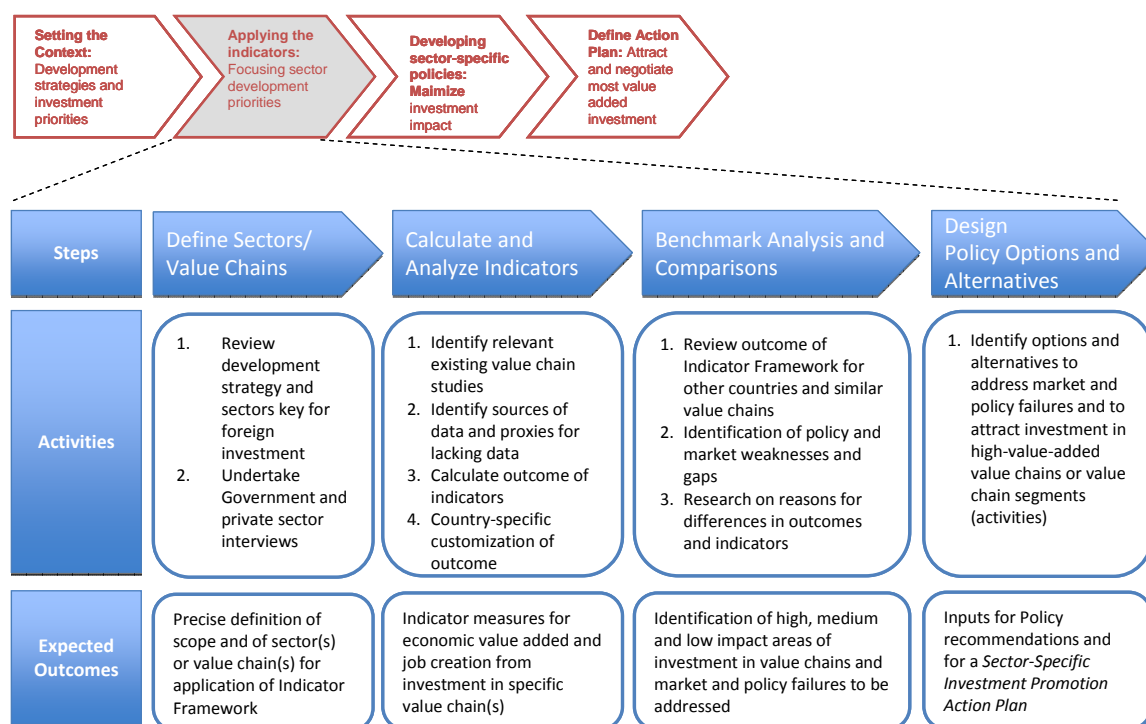
2. **Calculate and analyze data and indicators**: Once a sector or value chain has been indentified, the next step is to collect the data to feed the indicator framework matrix which identifies the indicators set out in table 2 for each link of the value chain. Some data may be available from public domain or government or international sources, and other data may need field interviews and surveys with domestic industry, trade associations, government agencies or other sources. In some cases the exact information required by the matrix may not be available, and governments may have to determine proxies for the specific variable.

3. **Identify benchmarks and comparisons**: Once the data matrix for the specific sector or value chain has been completed, these results should be compared with results for similar sectors within the same economy or for similar sectors in other economies, be they developed or developing economies. Comparisons with value chains and countries that have been successful in maximizing value added and job creation will identify government and market failures, gaps in value chain breadth, and possible areas for policy improvements.

4. **Design policy options and alternatives:** The data matrix and the benchmarking will result in gaps in performance and gaps in coverage of the value chains and value chain segments under examination. These should lead to a set of options for policymakers, both to address market and policy failures holding back the growth a specific sectors or value chains and to attract investment to target sectors and activities. These options for policies and practices form the basis for policy recommendations and for a "Sector-Specific Investment Promotion Action Plan".

Data and information availability will vary between different countries and sectors, including with regard to the reference benchmarking exercise. Therefore, developing countries may require specific technical cooperation and assistance in different steps of the application of the indicator framework, where the experience and knowledge of international organizations may be relevant.

The indicator measurements generated in this approach should also serve as a baseline, which can be referred to in future to measure improvements and policy impact. In order to ensure a set starting point that can allow progress to be measured, the original data matrix should remain the reference point throughout the implementation period of the action plan and revised action plans.

As implied in step 2 and 3 of the approach above, measuring the development impact of investment in and by itself is not sufficient to inform policymaking and to establish priorities. The resulting indicators must have a reference framework, an information base with three key elements:

- Background information on the value chains under examination
- Prerequisites for attracting investment in the value chains or value chain elements under examination (e.g. natural endowments, local skill-base, regulatory prerequisites,…)
- Experience of like investments in other countries or sectors and comparative data on the development and job-creation impacts.

The reference framework should allow policymakers to assess the relative performance of sectors and to form the basis for estimates of the potential impact of future investments to expand the value-chain footprint of those sectors, with a view to attracting and generating desirable and quality investment. It should also allow them to identify barriers to attracting such investment, as well as the steps that governments might consider, from general policy reforms and interventions to improve the environment for doing business to steps relevant specifically for the value chain under examination.

Such a reference framework will need to be constructed for each specific country and industry case as the indicator framework is brought into use. The testing of the indicators, as proposed for the second stage of the IAWG's work on this item, will provide concrete examples on how this can be done.

It is clearly neither feasible nor desirable to construct a standard set of data on numerous value chains, valid across all developing countries, that would yield a relevant, useful and applicable reference framework for any given situation "at the click of a button". However, some general rules for the construction of reference frameworks, potential data sources, and different approaches can be defined.

Support for policymakers in the construction of the necessary reference frameworks is available through:

1. Example methodologies for the assessment of specific sectors and value chains, including the analysis of their global value chain context. Three case examples on value chains of particular relevance for low-income countries are presented in Annex I. They purposely follow different approaches in data collection and in the way the reference frameworks are constructed.
    a. A "single-country comparison approach" to building a reference framework for the services sector (Tourism): Annex I-A
    b. A "multi-country approach" providing a reference framework for the manufacturing sector (Garments): Annex I-B
    c. A "regional comparison approach" for the agro-industry (Sugar): Annex I-C
2. A repository of value-chain studies conducted by the agencies that comprise the IAWG that can form the basis for the construction of further reference frameworks. The repository will be contained in the Annex to the report. Identified studies listed in Annex III.

III. NEXT STEPS FOR THE INTERNATIONAL DEVELOPMENT COMMUNITY

1. Next steps for the indicator framework

The first phase of the work of the IAWG, concluded with this Interim Report, set the groundwork for the indicator framework. This report provides the following:

- ‑ a set of indicators to measure value added and job creation from investment
- ‑ a project methodology for the application of the indicator framework
- ‑ sample analyses for the application of the indicator framework
- ‑ a repository of value chain studies
- ‑ likely areas for sector-specific investment policy recommendations

The next steps (after approval of the indicators by the High-Level Development Working Group, and before the final report to be completed in the summer of 2012) involve the testing by the individual IOs involved in the IAWG of the indicator framework through at least three pilots in low-income countries. The choice of countries for piloting of the indicator framework by the individual will be driven by: (a) countries in the process of reviewing their investment policy framework or business climate, (b) countries providing the broadest possible regional coverage, (c) coverage of different sectors in order to maximize usefulness of the pilot for refinement of the indicator framework, and (d) low-income countries where possible.

In addition to providing concrete and useful policy advice to the countries involved in the testing of the indicator framework, this exercise will fulfil the following objectives necessary to complete the tool for the final report:

- ‑ refine the set of indicators
- ‑ develop concrete guidelines for data collection methods and for statistical methods
- ‑ expand and refine the set of expected recommendations (or "policy tool-kit")

2. Possible outline of recommendations for the final report

The piloting experience will also enable the IAWG to embed the indicator framework in a broader set of conclusions on sector-specific investment policy making, focused on integrating developing countries in global value chains. Such conclusion are likely to take the form of policy recommendations for developing countries, for investor-countries, and for the international development community, as briefly set out in the following paragraphs.

Policy implications for developing countries

The tools provided in this report aim to help developing country policymakers establish priorities and focus scarce resources on specific industries, value chains and segments of value chains, coherent with their countries' factor endowments and potential comparative advantages. In doing so, developing country policy makers must take into account three important considerations:

- • Mechanisms to attract investment in specific sectors will only bring the full benefits expected if encapsulated in an overall conducive business environment and policy

framework for investment capable of unlocking both domestic investment and capital markets and foreign investment;

- The priorities for generating and attracting private sector investments and the focus on specific value chains or value chain elements must be coherent with a country's overall development strategy and approach to poverty alleviation;
- The policies designed to generate and attract investment to specific sectors, favouring some investors over others, must be coherent with the country's international commitments and obligations under international investment agreements

Policy implications for outward investor countries

The tools developed in this document clearly focus on investment policy making in developing countries. However, considering the fact that such a large share of investment in developing countries comes in the form of FDI, home country initiatives – initiatives by countries of origin of international private sector investors – are also important. A key challenge for G20 members, which account for more than two-thirds of global FDI outflows, as well as for other economies with potential for outward investment, will be to strengthen existing mechanisms (e.g. incentives, risk insurance and guarantees) and to develop novel mechanisms that help generate investment for development. Policies need to be strengthened so as to effectively create linkages between TNCs and companies in host countries, connecting low-income countries' companies to global value chains, and thereby strengthening productive capacities and export competitiveness. The work on action item 3 of the Private Investment and Job Creation Pillar, the Innovation Challenge to showcase entrepreneurship in developing countries, could emphasize the importance of such linkages. More in general, initiatives that promote sharing of relevant experiences, best practices and collective learning can play an important role in this area.

Outward investor countries can do more to promote responsible investment in low-income countries and to maximize its development benefits. Further work is needed to explore innovative ways and means to:

- Strengthen existing outward investment promotion and facilitation policies and mechanisms (such as information provision, incentives, risk insurance and guarantees), especially with a view to promoting outward investment by SMEs;
- Identify and design novel mechanisms to promote and facilitate outward investment to LICs, particularly to those areas and industries where it can generate a maximum of development benefits.

Concrete and pragmatic recommendations should be developed, including for governments and outward investment promotion agencies in G20 countries (and other countries with outward investment potential). A collaborative approach towards implementing such recommendations, including follow-up processes aimed at facilitating the sharing of experiences, best practices and collective learning would help ensure their operationalization and a real-world impact of G20 initiatives. Initiatives could include a meeting between G20 Outward Foreign Investment Agencies (and other relevant agencies) and LIC Investment Promotion Agencies to consider establishing a partnership to enhance collaboration between home and host country agencies, with a view to implementing the above recommendations.

Policy implications for the international community

At the international level, in the G20 as well as the wider international community, three key aspects should be taken into account and further analysed to later deduce policy implications from the use of the indicator framework:

First, having developed with these indicators a policy tool to assist developing countries to attract and negotiate value-adding investment to their economies, more work can be done to strengthen the tool and its application. This implies capacity building work to increase the absorptive capacity of low-income countries and to promote the use of the indicator framework and associated policy tools. This could take the form of, e.g.:

- technical assistance (e.g. to support private sector and market development in general, and in particular supporting the process of building competitiveness, enterprise development and enhance productive capacity in targeted sectors or value chains);
- investment policy reviews;
- exchanges of best policy practices;
- fostering of linkages between foreign investors and domestic enterprises;
- advisory services on streamlining of investment facilitation;
- advisory services on improvement of governance in investment promotion;
- advisory work on IIAs to ensure coherence with national policy objectives;

Second, in light of the danger of proliferating targeted development and investment attraction policies causing 'harmful competition' for investment, continued research and policy analysis, especially the monitoring of protectionist policies (both regarding inward and outward FDI, and pre- and post-establishment), remains a priority.

Third, the international community should further investigate ways to maintain and improve the stability of the international investment regime, the system of IIAs and relevant other agreements and treaties governing investment liberalization, promotion and protection, to ensure that it supports the goal of promoting sustainable development in developing and especially low-income countries.

ANNEX I-A: CASE EXAMPLE OF INDICATOR FRAMEWORK
(SINGLE COUNTRY – SERVICES SECTOR)

A reference framework of the tourism sector was used as a trial for the application of the indicator framework. Data for the tourism value chain impacts is available from the Tourism Satellite Accounts (TSA). To show how a reference framework can be constructed using data from a single economy (to be subsequently adapted for the country under examination), the indicator framework trial was constructed for the country where the most complete and up-to-date information was available in the TSA: New Zealand's 2006 TSA data (full up-to-date data was not available for a developing country in the TSA).

The exercise mapped the tourism value chain as follows: (1) *transport services* and *booking agencies*, (2) *accommodation services*, (3) *HORECA (Hotel/Restaurant/Catering) and food services* and (4) *induced value added*. Due to the higher impact of the last three categories in developing countries the analysis is concentrated on that segment of the value chain.

Value Chain Structure
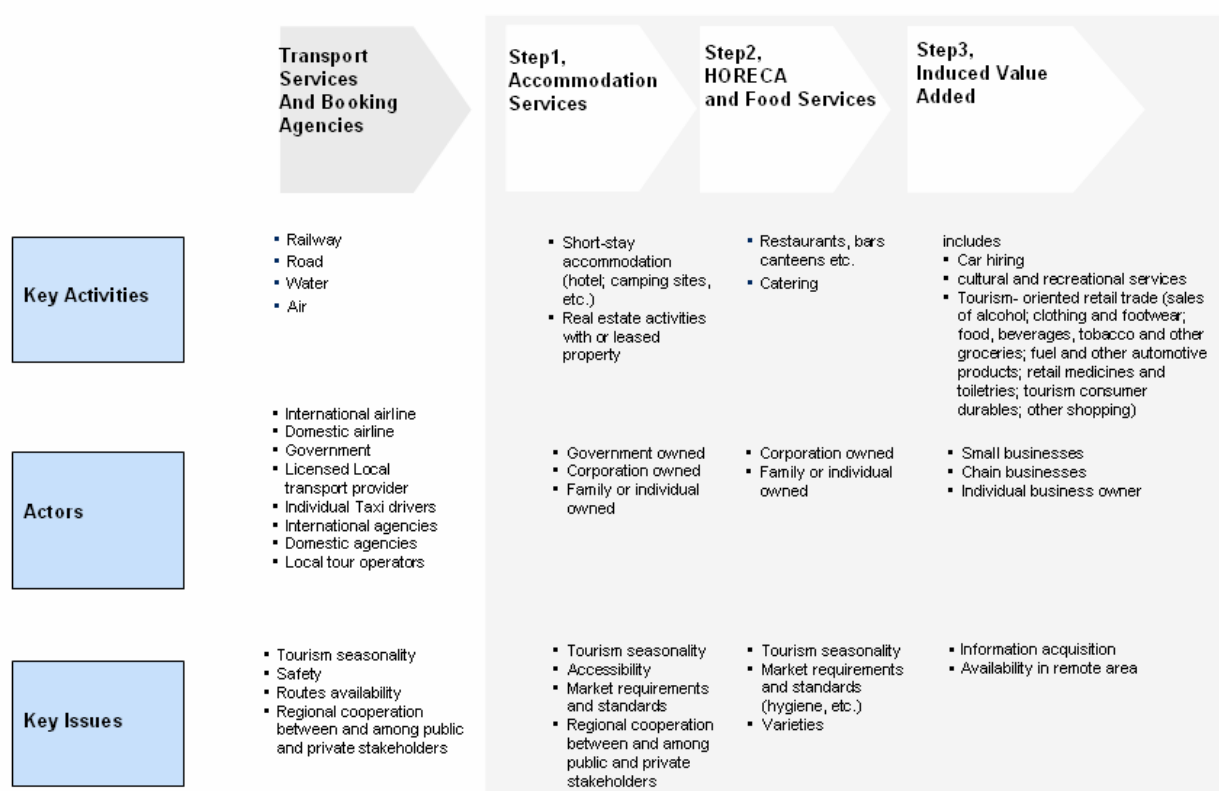
Once the parts and actors of the value chain were identified, the data was then fed into the indicator framework. The following matrix contains the indicators for the tourism value chain in New Zealand:

New Zealand
Year Ended March 2006

Value chain: Tourism Indicators	Accommodation Services	HORECA and Food Services	Induced Value Added*
1. Direct Tourism Value Added ($ million)	732	682	681
Percentage contribution to total VA	*35%*	*33%*	*33%*
2. Gross Fixed Capital Formation ($ million)	349	314	
Percentage contribution to GFCF	*53%*	*47%*	
3. Total Export Generation ($ million)	1'069	1'401	1'449
Percentage contribution to total export generation	*27%*	*36%*	*37%*
4. Total Fiscal Revenues ($ million)	41	54	
Percentage contribution to fiscal revenues	*43%*	*57%*	
5. Number of persons directly employed (full-time equivalent)	13'600	20'000	17'630
Percentage contribution to employment	*27%*	*39%*	*34%*
6. Wages and Salaries ($ thousand)	590	1'177	
Percentage contribution to wages and salaries	*42%*	*58%*	
7. Typologies of Employee Skill Levels			

- Sources of data:
  - Domestic Travel and International Visitor Surveys by Ministry of Tourism
  - Annual Enterprise Surveys by Statistics New Zealand
  - Accommodation and Retail Trade Surveys by Statistics New Zealand
  - National Accounts by Statistics New Zealand

*Within the *'induced value added'* category, three industries with tourism-specific expenditures are aggregated: Car rental; cultural and recreational services and tourism-oriented retail trade.

Table Footnotes:
- Direct VA, exports and employment figures for Induced Value Added category reflect the weighted average three industries, namely machinery and equipment hiring and leasing; cultural and recreational services; retail trade
- Total gross fixed capital formation involves residential building, non-residential building, other construction, land improvement, transport equipment; plant, machinery and equipment; intangible assets
- Export generation corresponds to the tourism expenditure due to international demand
- In the category of Induced VA, 'machinery and equipment hiring and leasing' is not included due to data restrictions in the calculation of export generation figures
- Contribution of wages and salaries are based on per employee figures

The table reflects the following trends which can be used to form policy recommendations targeting sector development:

- With respect to the economic value added indicators, each category contributes one-third of the total value added generated through the value chain, i.e. attracting investment in Hotels and Resorts will yield three times the value added through the other components of the value chain.
- Goods and services produced in the Accommodation category account for one-forth of the total exports, whereas in HORECA and Food Services and Induced Value Added categories they evenly make-up three quarters of total exports.
- Investment in Accommodation Services and Food Services both contribute the half of the gross fixed capital formation accumulated through the chain.

- In addition, Food Services yield slightly more fiscal revenues than Accommodation Services, forming more than half of the total tax revenues sourced from the production and imports.
- With respect to the investment impact on labour markets, the HORECA (hotel, restaurant, café) and Food services category creates the highest employment, representing well over a third of total employment in the tourism sector.
- The HORECA and Food Service category contributes more than half to total wages paid compared to the Accommodation Services category.

Capital-Intensity
Capital Formation per $1 of Value Added

0.48	0.46
Step1, Accommodation Services	Step2, HORECA and Food Services
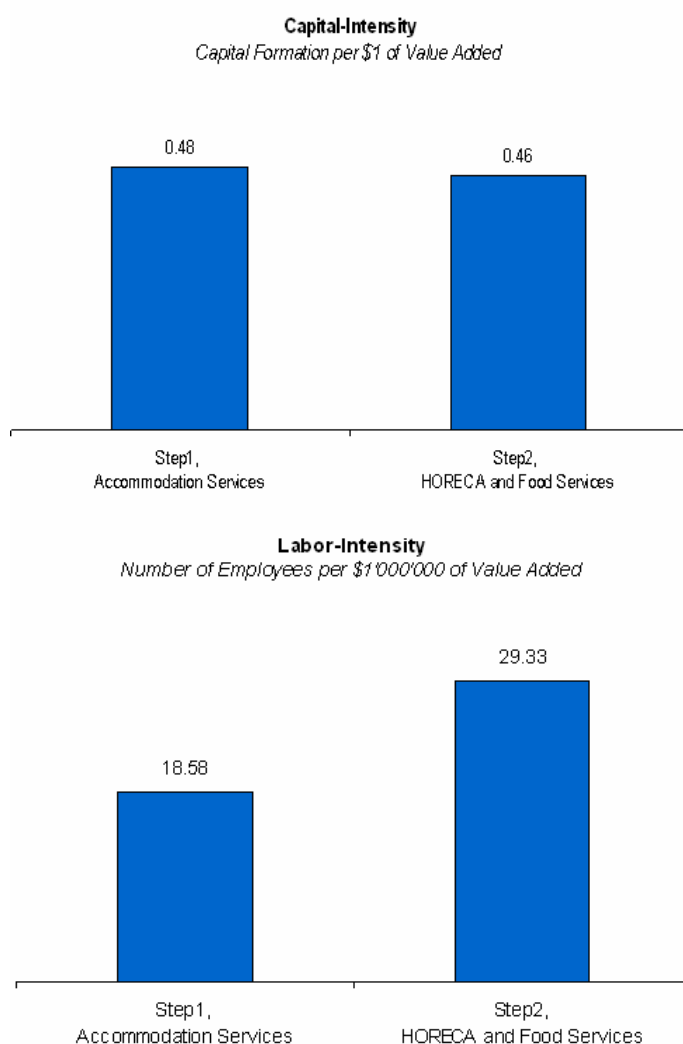
Further examining the production process in tourism sector, one can note that the Accommodation Services and HORECA and Food Services categories both have the same level of capital-intensity while HORECA and Food Services category is slightly more labour-intensive due to the nature of the goods and services provided in this industry. Assuming that capital, labour and technology are the three complementary production factors in the tourism sector, the relative technology-intensities can be derived as in the following: since Accommodation Services category requires the same amount of capital but less labour, it should be more technology-intensive relative to the HORECA and Food Services category.

Labor-Intensity
Number of Employees per $1'000'000 of Value Added

18.58	29.33
Step1, Accommodation Services	Step2, HORECA and Food Services

A low income country can use this information and that of other countries and sectors for benchmarking the results of the application of the indicator framework in their economy, and the results can reveal important policy lessons and best practices.

The case studies do not develop the qualitative indicators foreseen by the indicator framework since they will vary with the set of individual circumstances in each value chain and country, and need to be developed on a case-by-case basis for each framework study.

ANNEX I-B: CASE EXAMPLE OF INDICATOR FRAMEWORK
(MULT-COUNTRY– MANUFACTURING SECTOR)

A reference framework of the garments value chain was used as a sector example for the application of the indicator framework. To show how a multi-country reference framework can be constructed, the exercise uses information contained in the UNIDO Database, which provides the necessary relevant country specific statistics for a sample of low income and lower-middle income countries between 2000 and 2009.

The value chain for garments sector is identified as follows: (1) *raw material supply*, (2) *preparation and spinning of textile fibres, weaving of textiles*, (3) *finishing of textiles* and (4) *apparel*. The exercise focused on the last three categories due to the higher economic value added and employment impacts in developing countries.
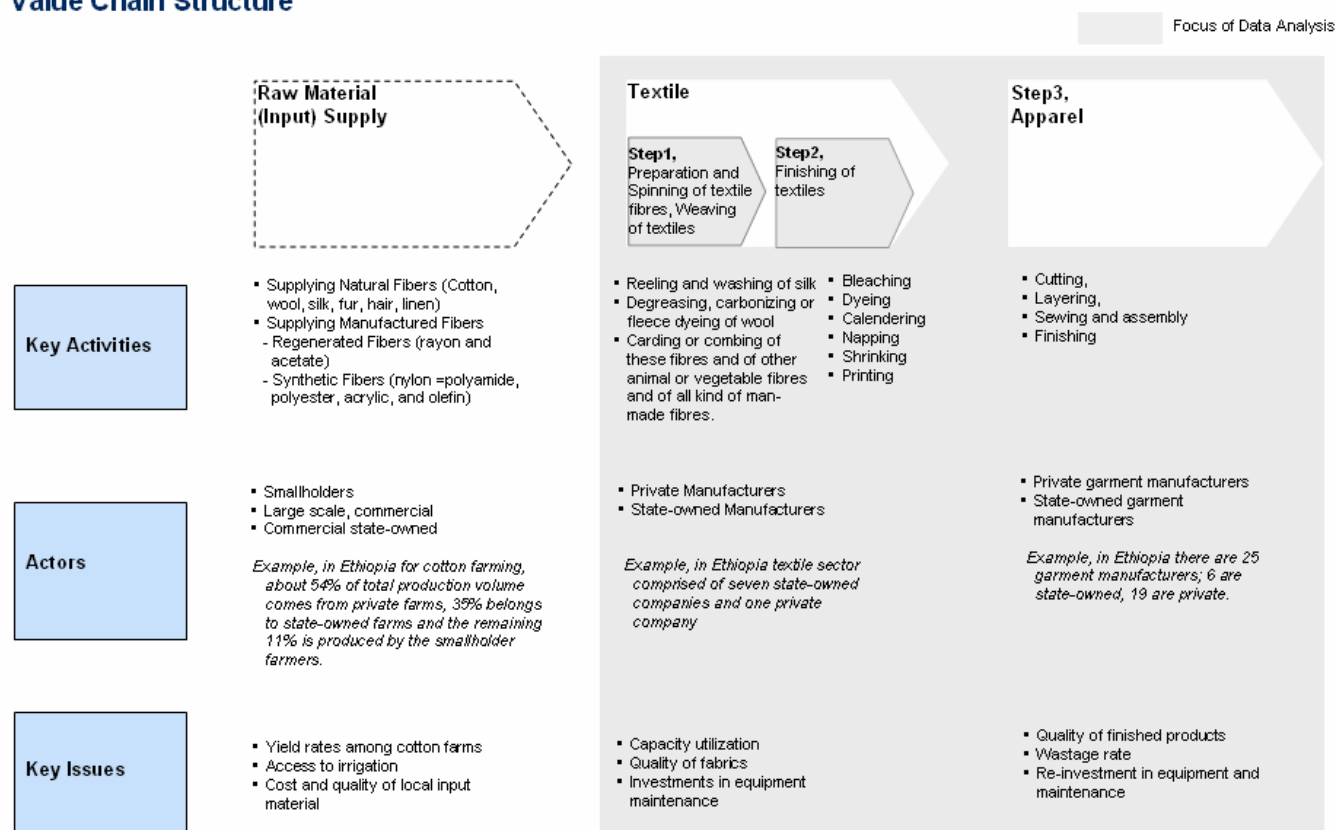
Subsequent to the identification of the actors and focus areas in the value chain, the available data (Note: statistics on the typologies of employee skill levels were not available at present, and the date will be incorporated at a later date) data was introduced into the indicator framework data matrix for the sample countries with the following results:

	Step1; Textile fibre preparation, textile weaving	Step2; Finishing of textiles	Step3; Wearing apparel except fur apparel
percentage contribution to total Value Added	42%	10%	48%
percentage contribution to Gross Ficex Capital Formation	50%	14%	36%
percentage contribution to total export generation	22%		78%
percentage contribution to formal business entities	27%	9%	64%
percentage contribution to fiscal revenues	47%		53%
percentage contribution to employment	35%	12%	53%
percentage contribution to wages and salaries	35%	35%	30%

The percentage contributions were calculated for each country's specific value chain, and then the weighted average was incorporated into the final data matrix.

This reference framework can be used to compare the results of a specific country, to identify differences in impact in the different links of the value chain, and review the possible failings or gaps and identify action to maximize the value added and job creation impact of investment in the links and chain. The following matrix presents the indicators for Morocco in 2007:

Table Footnotes:

- For export generation and fiscal revenues indicators, the information is summarized in broad categories; i.e. textile and apparel industries.
- In order to review the indicators calculated as the average of sample countries, please see the attached powerpoint presentation on the Indicator Framework Sample Reference Cases.

The table can be interpreted to form policy recommendations in order to increase the value chain footprint of the garments sector in Morocco as follows:

- The apparel industry contributes the highest value added in the chain, namely more than three quarters of the total value added generated in the production process.
- Goods and services produced in the apparel industry constitute the bulk of total exports, accounting for 91% of the total exports in the garments sector.
- Textile fibre preparation and textile weaving adds more than half of the total gross fixed capital formation accumulated in the value chain.
- The apparel industry yields almost three quarters of the total fiscal revenues.
- With respect to the investment impact on labour markets, the apparel industry has the highest number of business establishments while employing more than three quarters of workers in the value chain.
- The textile industry accounts for two sub-sectors and contributes three quarters of the total wages paid.
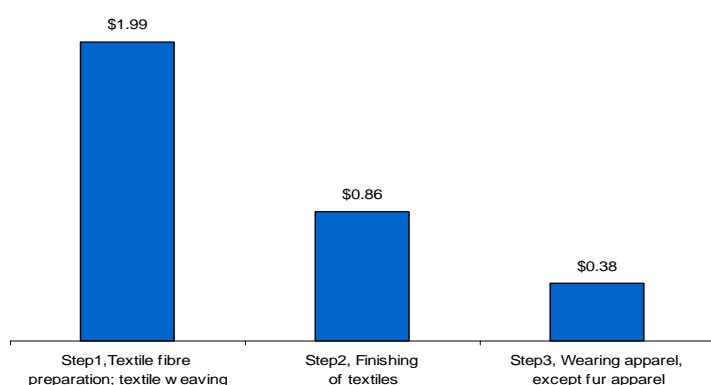
Capital intensity
Capital Formation per 1$ of Value Added
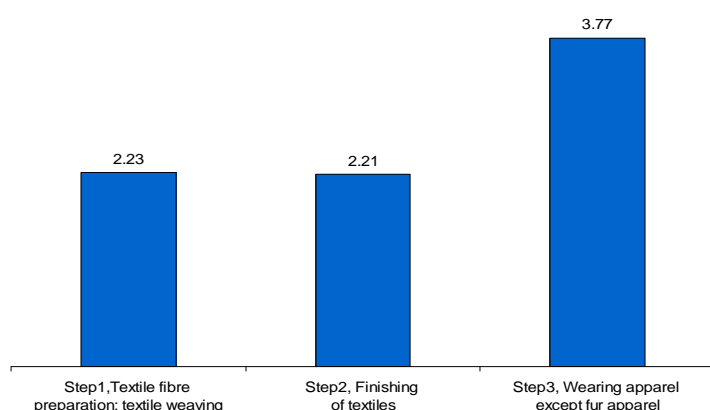
A closer look on the production process reveals that the most capital-intensive industry is textile fibre preparation and textile weaving industry due to activities such as carding or combing of fibres, while the apparel industry is the most-labour intensive industry in the value chain due to activities such as cutting, layering and sewing. Assuming that capital, labour and technology are the three main production factors in the garments sector, the relative technology intensities for the three industries would be as follows: since the apparel industry requires more labour and less capital, it should be the least technology intensive industry; while the textile fibre preparation and textile weaving industry requires more capital and less labour, it should be the most technology intensive industry in the value chain.

A low income country can use this information and that of other countries and sectors for benchmarking the results of the application of the indicator framework in their economy, and the results can reveal important policy lessons and best practices.

Labour Intensity
Number of Employees per $10,000 of Value Added

The case studies do not develop the qualitative indicators foreseen by the indicator framework since they will vary with the set of individual circumstances in each value chain and country, and need to be developed on a case-by-case basis for each framework study.

ANNEX I-C: CASE EXAMPLE OF INDICATOR FRAMEWORK NO. 3
(REGIONAL – AGRO-INDUSTRY)

A reference frame work of the sugar value chain was used as a trial for the application of the indicator framework. To show how a regional reference framework can be constructed, the exercise chooses US and Mexico as a sample region, where the North America Free Trade Agreement (NAFTA) has been in force since 1994, although trade in sugar remains regulated. Data for the sugar industry[3] in the U.S. is available through the U.S. Census Bureau, and information on Mexico's sugar industry for the indicator framework was found in various sources, including LMC international, USDA Sugar and Sweeteners Outlook 2011 and USDA Gain Report: Mexican Sweeteners Production Expected to Increase 2010.

The sugar industry value chain is identified as follows: (1) sugar cane supply, (2) raw sugar, (3) refined sugar. The exercise mainly focused on the last two steps due to the higher economic value added and quantifiable employment impacts.

I. Value Chain Structure

Focus of Data Analysis

	Sugar Cane (Input) Supply	Raw Sugar (Cane Sugar)	Step3, Refined Sugar
Key Activities	• Supply raw material (sugar cane, sugar beet)	• extract the juice • Boiling the juice and crystallize it afterwards • Spinning the crystals	• Wash and filter raw sugar • Crystallizing, drying and packaging
Actors	• Small growers • Large growers • Seasonal workers • Grower council	• Milling companies • Sugar miller association	
Key Issues	• preservation of fresh cane • Land ownership • Access to irrigation	• Purity of Raw sugar	• Purity of refined sugar

Sources:

UNCTAD/DIAE	0

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[3] Note: statistics on the typologies of employee skill levels for both countries, Fiscal revenues for Mexico, and export generation for US were not readily available or verifiable.

Following the identification of the actors and activities involved in the sugar value chain, data was introduced into the indicator framework data matrix for the sample countries, and the percentage contributions were calculated for each country's specific value chain, and then the weighted average was incorporated into the final data matrix[4]:

	Step 2: Raw sugar	Step 3: Refined Sugar
Percentage contribution to total value added	60.4%	39.6%
Percentage contribution to Gross Fixed Capital Formation	70.3%	29.7%
Percentage contribution to total export generation		
Percentage contribution to formal business entities	62.1%	37.9%
Percentage contribution to fiscal revenues		
Percentage contribution to employment	66.7%	33.3%
Percentage contribution to wages and salaries	52.3%	47.7%

Nevertheless, given the differences between the sugar sector in both countries, a specific review of each country's indicator framework matrix was also undertaken:

Labour Intensity
Number of Employees per $ 10,000 of Value Added

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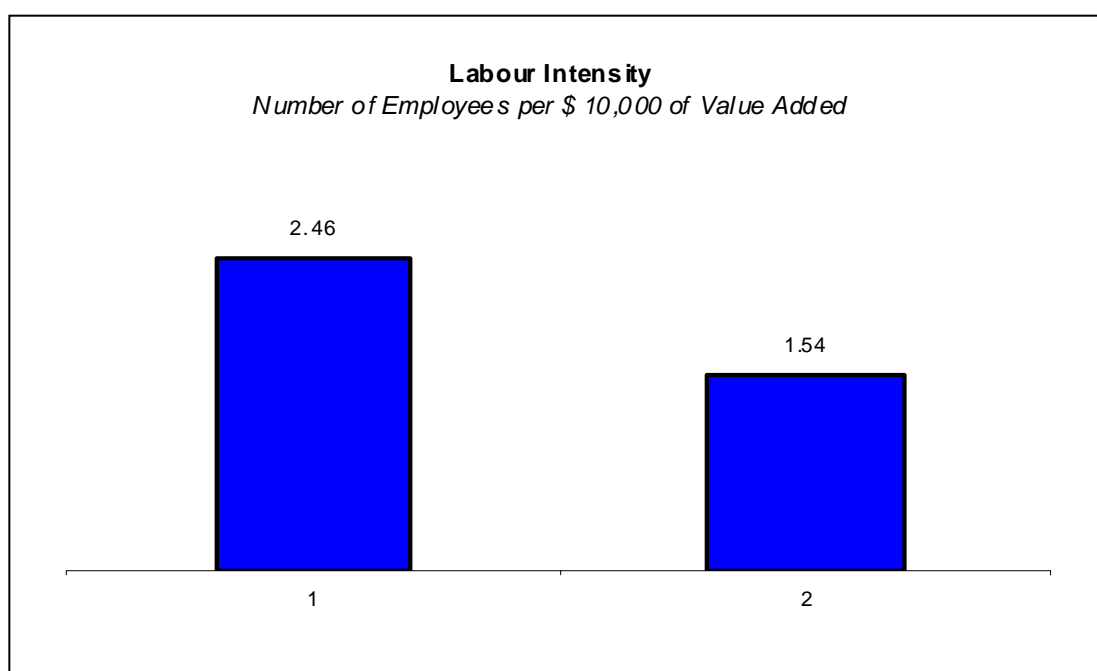
[4] Comparability of data was not always possible, and assumptions were applied in calculations.

Capital Intensity
Capital Formation per 1$ of Value added
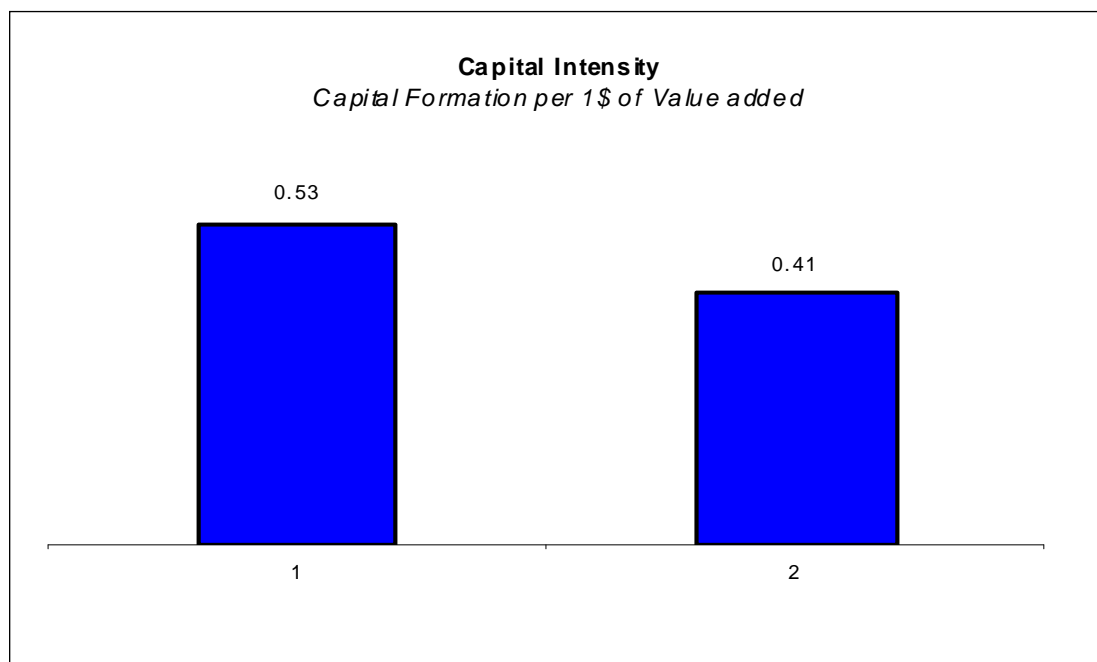
The differences in impact in the different steps of the value chain can be identitied through the comprison between countries, in order to review the possible failing s or gaps and to maximize the value added and job creation.

Capital Intensity
Capital Formation per 1$ of Value added

Labour Intensity
Number of Employees per $ 10,000 of Value Added
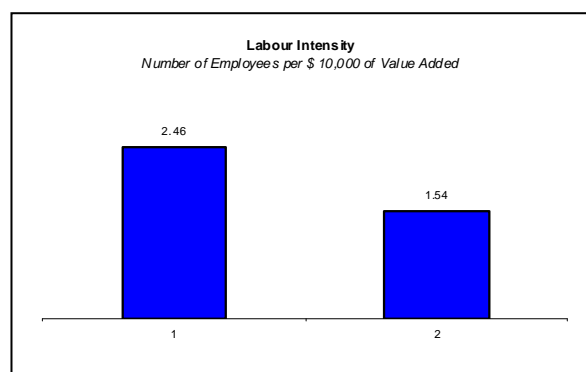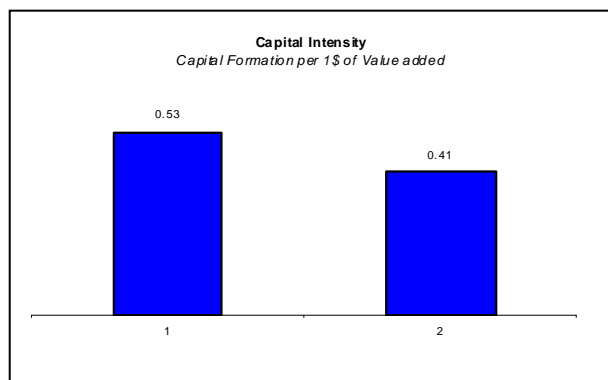
The indicartor framework can be interpreted to form policy recommendations for the developing countries with similar characteristics:

- With the respect to the economic value added indicators, the raw sugar step contributes the most value added in the chain; over 20 per cent higher than refined sugar step on average.
- The raw sugar link constitutes more than 70 percent of the total gross fixed capital formation accumulated in the value chain.
- Raw sugar comprises nearly two-third of the business entities in the value chain.
- In terms of employment contribution, the raw sugar link generates over two times more jobs than refined sugar. However, both contribute similar amounts to total wage paid.

ANNEX II: INVESTMENT, GDP, AND EMPLOYMENT
ILO, GENEVA

The impact of investment on growth and employment

The role of investment in determining GDP growth is critical and unambiguous. Higher investment leads to higher GDP growth. And each additional percentage point of GDP growth will generate additional employment. Therefore raising the quantum of investment, will raise the quantum of employment. This increase in the quantum of employment will be through both a direct impact on employment and via secondary, indirect multiplier effects. The increase in the quantum of employment will also reduce underemployment, and improve wages.

Therefore the correlation between the quantum of investment and the quantum of employment generated, can be taken as virtually axiomatic. Indeed testing this for 48 developing countries, for which such data was available, over three five year periods from 1980 to 2007, shows that in a majority of these country episodes, investment growth, GDP growth, and employment growth moved together – were convergent, rather than moving apart which would be divergence[5].

However, a policy challenge emerges when we move from examining the quantum of investment and employment, to examining growth rates in investment, GDP and employment. The growth rates of investment and GDP, need not be matched by growth rates of employment.

This is brought out by examining the long run macro relationship between investment growth, GDP growth, and employmentemployment growth, for these 42 developing countries.

The method of analyzing this relationsip is to recognize that investment determines output and employment. Investment employs capital which embodies technology, and labor, to produce output. So there are two relationships here. One is between output and employment, Another is between investment and employment. And technology intervenes to determine the intensity of both these relationships. Capital intensive technology will tend to weaken both relationships.

A second point to note is that a country may not have a consistent relationship between output and employment, or between investment and employment, over its long history. So for each country, a long run period 1990-2007 can be divided into three even episodes, 1990 to 1995, 1996 to 2001, and 2002 to 2007. The valid question to ask then becomes, which country episodes show better relationships between GDP growth and employment growth, or between investment growth and employment growth, and why.

The why can be attributed to two explanatory factors. One explanatory factor is a productivity effect[6]. GDP growth can be biased towards productivity enhancement, or employment enhancement, or it can be more balanced between the two. The productivity versus employment effects are in turn explained by the second explanatory factor which is the capital labor ratio. Increasing capital labor ratios are needed to enhance productivity, competitiveness and incomes. But too marked an increase in the capital labor ratio, embodying capital intensive technology, can lower the share of the employment effect.

Observing these relationships over time, between output growth and employment growth and between investment growth and employment growth throws up challenging results (Figures 5-7, with more detailed Annex tables).

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[5] ILO study 2011.
[6] Output decomposes into productivity multiplied by employment.

(i) In these countries, as average GDP growth increased, average employment growth went down, so the employment elasticity with respect to GDP went down. The countries with the highest GDP growth rates of 10% pa on average had the lowest employment growth rates of 1% pa on average, and so had the lowest employment elasticities of under 0.3. Countries with medium GDP growth rates of 6% pa on average had medium employment growth rates of 1.5% pa on average, and therefore medium employment elasticities. Countries with the lowest GDP growth rates of 3% pa on average had the highest employment growth rates of 2.5% pa on average, and hence the highest employment elasticities. And this trend held for each of the three periods.

(ii) Investment growth was positively correlated to GDP growth, but inversely correlated to employment growth. So countries with the highest investment and GDP growth rates had the lowest employment growth rates. This trend held for periods of good growth.

(iii) The negative relationship between on the one hand GDP growth and investment growth, and on the other hand employment growth, was explained by the two explanatory factors, the productivity effect, and the capital labor ratio. GDP growth on average was positively correlated to the increasing share of productivity in GDP growth, for all three periods. So, higher GDP growth on average was obtained by increasing the share of productivity growth in it, and decreasing the share of employment in it.

(iv) The increasing share of productivity correlated to higher GDP growth and investment growth was in turn explained by increasing capital labor ratios. As GDP growth and investment growth increased, the productivity effect increased, spurred on by increasing capital labor ratios.

(v) The results for private investment and private employment were similar to the results obtained at the aggregate level. Private investment growth on average was inversely correlated to private employment growth on average

However a number of caveats need to temper this result. First, no other control variables are being used here, to allow for no doubt large differentials in GDP between these countries, structure of the economy such as reliance on extractives and sectoral and industrial mix, and qualitative variables, especially on the nature of jobs, wages, and other indicators of slack in the labour market like underemployment. Second, aggregate employment growth comprises employment growth across different occupations, and as investment growth, productivity growth, and the capital labour ration increase, employment growth in high productivity occupations and sectors can be expected to increase by more than employment growth for lower productivity occupations and sectors. Third, we have not been able to isolate policy regimes in this initial analysis. Clearly some policy regimes aimed at pro poor growth may be more effective in generating higher employment growth. Clearly much more work in these direction is needed beyond this initial foray.

Policy on Investment Growth and Employment

To reiterate, the quantum of investment is correlated to the quantum of employment. So generating employment has to be based on generating more investment. However in the quest for higher growth, employment growth can lag behind investment growth and GDP growth. So while higher investment is a necessary condition for higher employment, the employment content of this growth can always be raised. The above analysis of sector and industry specific job content of investment and value chains demonstrates this.
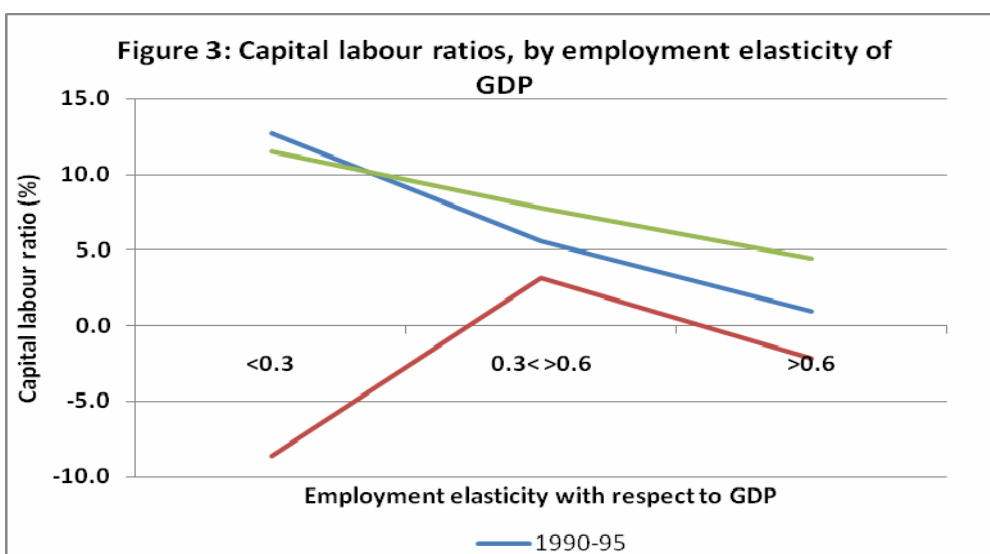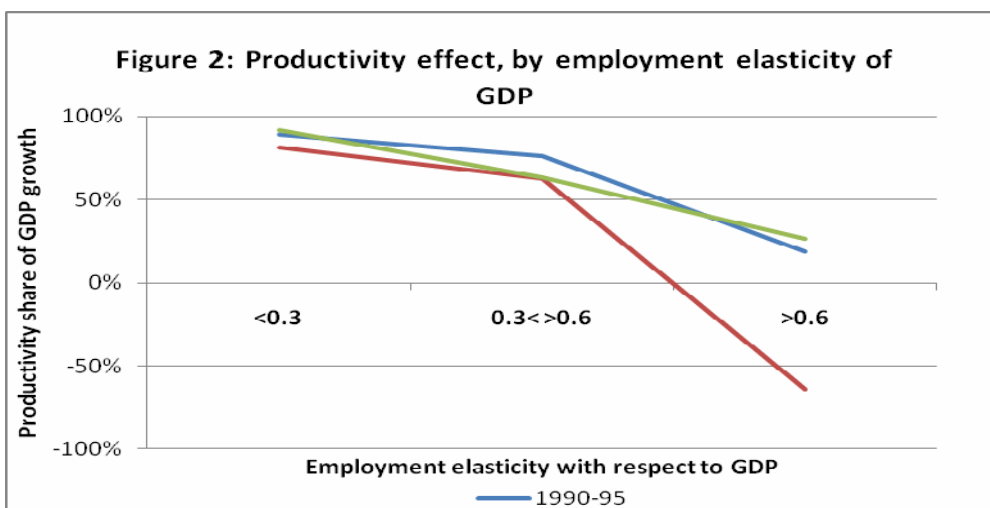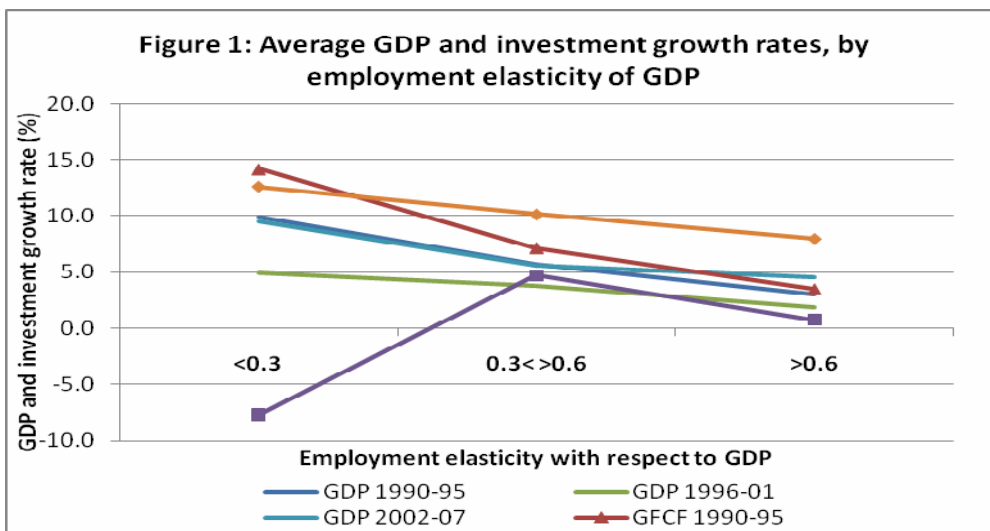
Figure 1: Average GDP and investment growth rates, by employment elasticity of GDP

Figure 2: Productivity effect, by employment elasticity of GDP

Figure 3: Capital labour ratios, by employment elasticity of GDP

Table 1: Total employment and investment

(individual country employment to GDP elasticity)	Average annual growth rates			% of GDP growth		EMP Elasticity		K/L ratio
	GDP	GFCF	EMP	Prod	EMP	GDP	GFCF	Pop.
	1990-95			1990-95		1990-95		1990-95
>0.6	3.03	3.47	2.49	0.19	0.81	0.758	0.474	0.95
0.3< >0.6	5.67	7.15	1.48	0.76	0.24	0.300	0.239	5.59
<0.3	9.87	14.18	1.26	0.89	0.11	0.137	0.095	12.76

(individual country employment to GDP elasticity)	Average annual growth rates			% of GDP growth		EMP Elasticity		K/L ratio
	GDP	GFCF	EMP	Prod	EMP	GDP	GFCF	Pop.
	1996-01			1996-01		1996-01		1996-01
>0.6	1.88	0.77	3.01	-0.64	1.64	1.617	-0.079	-2.18
0.3< >0.6	3.76	4.70	1.47	0.63	0.37	0.455	0.337	3.19
<0.3	4.95	-7.71	0.99	0.82	0.18	0.191	-0.050	-8.61

(individual country employment to GDP elasticity)	Average annual growth rates			% of GDP growth		EMP Elasticity		K/L ratio
	GDP	GFCF	EMP	Prod	EMP	GDP	GFCF	Pop.
	2002-07			2002-07		2002-07		2002-07
>0.6	4.52	8.01	3.41	0.26	0.74	0.781	0.416	4.44
0.3< >0.6	5.56	10.15	2.17	0.64	0.36	0.379	0.204	7.82
<0.3	9.56	12.62	0.95	0.92	0.08	0.103	0.080	11.55

Groupings based on aggregating countries with data available in at least 4 years of each period, according to their country level employment elasticity to GDP

Source: IMF World Economic Outlook and ILO Laborsta

Table 2. Private employment and private investment

(individual country employment to GDP elasticity)	Average annual growth rates			EMP Elasticity		K/L ratio
	GDP	GFCF	EMP	GDP	GFCF	Pop.
	1990-95			1990-95		1990-95
>0.6	n/a	n/a	n/a	n/a	n/a	n/a
0.3< >0.6	n/a	n/a	n/a	n/a	n/a	n/a
<0.3	n/a	n/a	n/a	n/a	n/a	n/a

(individual country employment to GDP elasticity)	Average annual growth rates			EMP Elasticity		K/L ratio
	GDP	GFCF	EMP	GDP	GFCF	Pop.
	1996-01			1996-01		1996-01
>0.6	3.22	-0.91	13.93	3.326	-0.841	0.45
0.3< >0.6	1.09	-16.53	1.06	0.534	-0.008	-8.41
<0.3	3.73	-3.18	0.07	0.018	0.030	-0.65

(individual country employment to GDP elasticity)	Average annual growth rates			EMP Elasticity		K/L ratio
	GDP	GFCF	EMP	GDP	GFCF	Pop.
	2002-07			2002-07		2002-07
>0.6	3.79	11.77	4.01	0.838	0.254	7.26
0.3< >0.6	7.17	17.52	2.32	0.334	0.146	18.10
<0.3	6.51	25.87	1.01	0.166	0.047	13.10

Groupings based on aggregating countries with data available for at least 4 years in each period, according to their country level private employment elasticity to GDP

Source: IMF World Economic Outlook and ILO laborsta

Annex Table A1: Total investment and total employment

	Average annual growth rates			Share of GDP growth		EMP Elasticity		Capital labour ratio
	GDP	GFCF	EMP	Prod	EMP	GDP	GFCF	Average growth rate
	1990-95			1990-95		1990-95		1990-95
Honduras	3.54	8.12	8.29	-1.58	2.58	2.068	0.785	-0.16
Trinidad and Tobago	1.39	14.99	2.90	-1.15	2.15	1.344	0.123	11.76
Nicaragua	1.78	4.76	1.82	-0.02	1.02	1.055	0.307	2.89
Philippines	2.17	2.23	2.66	-0.24	1.24	0.982	0.376	-0.42
Venezuela, RB	3.45	6.38	3.66	-0.07	1.07	0.869	0.153	2.62
Brazil	3.07	3.14	2.32	0.26	0.74	0.625	0.230	0.80
Egypt, Arab Rep.	3.40	-2.60	1.33	0.62	0.38	0.560	-0.143	-3.88
Costa Rica	5.53	5.29	2.81	0.52	0.48	0.545	0.374	2.41
Pakistan	4.63	4.12	1.06	0.79	0.21	0.338	0.342	3.03
Chile	8.69	13.88	2.42	0.75	0.25	0.324	0.190	11.19
Belarus	-8.17	-13.76	-3.06	0.59	0.41	0.320	0.189	-11.04
Korea, Rep.	7.81	9.54	2.45	0.72	0.28	0.318	0.266	6.92
Turkey	3.21	4.36	2.12	0.35	0.65	0.306	0.054	2.19
Malaysia	9.47	17.94	2.72	0.75	0.25	0.304	0.166	14.82
Sri Lanka	5.40	7.89	1.20	0.80	0.20	0.276	0.174	6.61
Hong Kong SAR, China	5.22	8.61	1.39	0.75	0.25	0.261	0.172	7.12
Macau, China	6.00	11.39	2.01	0.69	0.31	0.237	0.090	9.20
Indonesia	7.87	10.08	1.10	0.88	0.12	0.190	0.147	8.89
Thailand	8.62	10.22	1.49	0.85	0.15	0.173	0.148	8.60
China	12.26	15.19	1.27	0.92	0.08	0.109	0.086	13.75
Azerbaijan	-15.98	-8.31	-0.49	0.96	0.04	0.031	-0.002	-7.85

Convergent
Cyclical
Divergent

Elasticity

>0.6
0.3< & >0.6
<0.3

Annex Table A1 continued: Total investment and total employment

	Average annual growth rates			Share of GDP growth		EMP Elasticity		Capital labour ratio
	GDP	GFCF	EMP	Prod	EMP	GDP	GFCF	Average growth rate
	1996-01			1996-01		1996-01		1996-01
South Africa	2.48	1.85	8.06	-2.64	3.64	3.821	2.100	-5.75
Peru	2.02	-2.51	4.45	-1.31	2.31	1.874	-0.323	-6.66
Barbados	2.00	5.93	2.48	-0.25	1.25	1.419		3.36
Venezuela, RB	1.47	15.86	4.37	-2.16	3.16	1.283	0.184	11.00
Brazil	1.84	0.97	2.30	-0.26	1.26	1.282	0.040	-1.30
Nicaragua	4.35	7.08	5.67	-0.34	1.34	1.259	0.481	1.34
Honduras	2.86	4.05	2.89	-0.01	1.01	0.944	0.451	1.13
Pakistan	2.69	-0.60	2.90	-0.08	1.08	0.833	-0.906	-3.40
Costa Rica	4.97	7.10	6.28	-0.30	1.30	0.825	0.516	0.77
Argentina	0.57	-2.95	2.02	-2.65	3.65	0.820	0.056	-4.86
Belize	6.75	11.69	5.72	0.17	0.83	0.773	0.372	5.64
Bahamas, The	4.30	12.00	3.39	0.23	0.77	0.764	0.234	8.33
Dominican Republic	5.82	10.00	3.53	0.42	0.58	0.665	0.351	6.25
Sri Lanka	3.93	3.19	2.40	0.41	0.59	0.662	0.379	0.77
El Salvador	3.06	4.64	2.04	0.35	0.65	0.632	0.411	2.55
Malaysia	2.92	-6.35	2.18	0.26	0.74	0.623	-0.076	-8.35
Trinidad and Tobago	5.00	3.07	2.97	0.43	0.57	0.565	-0.014	0.10
Macedonia, FYR	1.78	-3.72	2.18	-0.24	1.24	0.538	-0.688	-5.78
Mexico	4.37	8.60	2.38	0.48	0.52	0.509	0.256	6.07
Panama	4.17	-1.19	2.56	0.41	0.59	0.509	0.070	-3.65
Russian Federation	3.39	2.25	0.69	0.81	0.19	0.468	0.296	1.55
Hong Kong SAR, China	1.90	-0.63	1.14	0.41	0.59	0.424	-0.006	-1.75
Vietnam	6.47	8.94	1.96	0.72	0.28	0.345	0.252	6.84
Cuba	3.62	1.56	1.34	0.65	0.35	0.327	0.152	0.22
Uzbekistan	4.36	5.36	1.33	0.71	0.29	0.301	0.229	3.98
Philippines	3.12	0.19	1.22	0.62	0.38	0.282	-0.017	-1.02
Korea, Rep.	3.78	-1.69	0.68	0.83	0.17	0.267	0.218	-2.35
Thailand	-0.27	-14.51	0.89	4.38	-3.38	0.245	-0.004	-15.26
Macau, China	0.22	-9.38	1.13	-4.27	5.27	0.205	-0.058	-10.39
Mauritius	5.17	4.72	1.04	0.81	0.19	0.202	0.156	3.65
Chile	3.36	0.90	0.67	0.81	0.19	0.172	0.039	0.22
China	8.28	-9.89	1.16	0.88	0.12	0.143	-0.035	-10.92
Turkey	1.38	-5.32	0.31	0.78	0.22	0.143	-0.022	-5.61
Belarus	6.71	5.16	0.24	0.97	0.03	0.054	0.055	4.91
Azerbaijan	8.82	19.01	0.15	0.99	0.01	0.016	0.008	18.82
Indonesia	-0.06	-5.85	1.16	20.27	-19.27	-0.084	-0.063	-6.94
Albania	5.05	10.40	-0.97	1.17	-0.17	-0.137	-0.034	11.48
Uruguay	0.32	-3.00	-1.74	6.27	-5.27	-0.424	0.126	-1.29
Ukraine	1.89	5.43	-3.70	2.75	-1.75	-0.640	-0.728	9.48
Cameroon	4.65	10.80	5.36	-0.17	1.17			5.17

	Elasticity
Convergent	>0.6
Cyclical	0.3< & >0.6
Divergent	<0.3

Annex Table A1 continued: Total investment and total employment

	Average annual growth rates			Share of GDP growth		EMP Elasticity		Capital labour ratio
	GDP	GFCF	EMP	Prod	EMP	GDP	GFCF	Average growth rate
	2002-07			2002-07		2002-07		2002-07
Uruguay	6.43	12.93	7.38	-0.17	1.17	1.166	0.506	5.17
Bahamas, The	1.61	8.71	2.35	-0.48	1.48	0.894	0.193	6.22
Bolivia	4.13	2.97	4.08	0.01	0.99	0.831	0.344	-1.07
Egypt, Arab Rep.	5.13	9.28	4.00	0.24	0.76	0.796	0.362	5.08
Paraguay	4.38	7.42	3.75	0.15	0.85	0.793	0.483	3.54
Brazil	4.00	6.16	2.83	0.31	0.69	0.742	0.406	3.24
South Africa	4.77	12.07	3.22	0.35	0.65	0.718	0.299	8.58
Pakistan	6.34	8.61	4.15	0.37	0.63	0.686	0.434	4.28
Chile	4.94	10.55	3.12	0.39	0.61	0.654	0.286	7.20
Honduras	5.94	12.54	3.82	0.38	0.62	0.651	0.318	8.40
Costa Rica	6.61	7.76	3.95	0.43	0.57	0.619	0.522	3.66
Mexico	3.37	6.48	2.00	0.42	0.58	0.593	0.301	4.40
Peru	6.47	13.51	3.95	0.42	0.58	0.519	0.258	9.19
Argentina	8.83	25.07	4.89	0.49	0.51	0.514	0.200	19.24
El Salvador	3.20	2.83	1.74	0.47	0.53	0.492	0.414	1.08
Macau, China	17.79	41.89	7.95	0.63	0.37	0.492	0.214	31.44
Panama	7.88	18.73	3.79	0.56	0.44	0.488	0.230	14.40
Dominican Republic	5.80	3.92	2.72	0.56	0.44	0.466	0.253	1.17
Philippines	5.73	2.50	2.23	0.64	0.36	0.395	0.429	0.27
Tajikistan	8.45	12.49	2.97	0.68	0.32	0.386	0.205	9.24
Venezuela, RB	7.42	15.68	3.27	0.59	0.41	0.356	0.128	12.03
Syrian Arab Republic	4.24	13.52	0.51	0.89	0.11	0.337	0.071	12.94
Macedonia, FYR	4.17	6.02	1.01	0.77	0.23	0.334	0.229	4.96
Indonesia	5.47	7.49	1.75	0.70	0.30	0.319	0.213	5.65
Malaysia	6.05	5.63	2.00	0.69	0.31	0.305	0.317	3.55
Thailand	5.63	8.12	1.62	0.74	0.26	0.297	0.189	6.40
Hong Kong SAR, China	6.38	3.59	1.60	0.77	0.23	0.272	0.455	1.96
Tunisia	5.51	2.51	1.58	0.73	0.27	0.256	0.370	0.92
Kazakhstan	9.64	20.86	2.61	0.76	0.24	0.254	0.112	17.78
Croatia	4.72	10.14	1.20	0.76	0.24	0.244	0.120	8.83
Morocco	4.89	9.47	1.17	0.78	0.22	0.234	0.127	8.20
Vietnam	8.05	13.10	1.92	0.79	0.21	0.232	0.153	10.97
Colombia	5.51	13.64	1.51	0.75	0.25	0.202	0.084	11.95
Russian Federation	7.50	15.16	1.15	0.87	0.13	0.163	0.086	13.85
Cuba	7.97	11.95	1.32	0.85	0.15	0.152	0.076	10.49
Ukraine	7.84	16.48	0.80	0.91	0.09	0.113	0.057	15.56
Mauritius	4.01	7.40	0.48	0.89	0.11	0.109	0.075	6.88
Azerbaijan	21.11	16.26	1.50	0.95	0.05	0.080	0.065	14.55
China	11.65	13.01	0.87	0.94	0.06	0.078	0.072	12.04
Armenia	13.05	25.36	-0.09	1.01	-0.01	-0.010	-0.006	25.47
Turkey	6.90	14.97	-0.58	1.07	-0.07	-0.103	-0.059	15.64
Moldova	5.86	17.45	-3.69	1.52	-0.52	-0.565	-0.201	21.95
Saudi Arabia	4.71	14.41	5.60	-0.21	1.21			8.34

	Elasticity	
Convergent	>0.6	
Cyclical	0.3< & >0.6	
Divergent	<0.3	

Annex Table A2: Private investment and private employment

	Average annual growth rates			Private EMP Elasticity		Capital (Private) / labour (Private) ratio
	GDP	Private GFCF	Private EMP	GDP	Private GFCF	Average growth rate
	1990-95			1990-95		1990-95
Philippines	2.17	6.39	2.75	0.999	0.231	3.54
Bahamas, The	-0.10	1.37	2.47	.	.	-1.07
Benin	4.24	7.47	0.50	.	.	6.93
Botswana	4.05	-4.99	0.22	.	.	-5.20
Brazil	3.07	10.08	1.26	.	.	8.71
Colombia	4.13	23.33	5.58	.	.	16.81
Ecuador	2.67	21.88	5.61	.	.	15.40
Egypt, Arab Rep.	3.40	-15.41	1.74	.	.	-16.85
India	5.08	3.75	1.85	.	.	1.86
Kenya	1.59	5.12	1.45	.	.	3.62
Malawi	2.98	-14.04	9.92	.	.	-21.80
Mauritius	4.89	7.23	2.27	.	.	4.85
Mexico	1.53	1.83	1.35	.	.	0.47
Seychelles	2.84	10.58	2.57	.	.	7.81
Thailand	8.62	13.11	0.79	.	.	12.22
Trinidad and Tobago	1.39	16.66	4.23	.	.	11.92

Convergent
Cyclical
Divergent

Elasticity

>0.6
0.3< & >0.6
<0.3

Annex Table A2 continued: Private investment and private employment

	Average annual growth rates			Private EMP Elasticity		Capital (Private) / labour (Private) ratio
	GDP	**Private GFCF**	**Private EMP**	**GDP**	**Private GFCF**	**Average growth rate**
	1996-01			**1996-01**		**1996-01**
Colombia	1.13	-13.74	24.32	11.078	-0.343	-30.62
Egypt, Arab Rep.	4.90	12.40	9.53	1.734	0.498	2.62
Panama	4.17	-3.48	3.96	1.401	0.354	-7.16
Syrian Arab Republic	2.45	0.01	2.58	1.041	0.100	-2.50
Bahamas, The	4.30	7.91	4.36	1.003	0.438	3.40
Croatia	2.82	3.21	2.24	0.884	0.175	0.95
Costa Rica	4.97	7.27	6.41	0.865	0.527	0.80
Azerbaijan	8.82	8.33	6.50	0.784	0.162	1.72
Botswana	5.93	10.88	2.74	0.633	0.291	7.92
Jordan	3.84	-3.32	1.48	0.541	-0.205	-4.73
Philippines	3.12	-7.82	1.80	0.432	-0.064	-9.45
Moldova	-0.12	-8.34	-0.47	0.408	0.054	-7.91
Armenia	5.86	4.46	1.63	0.339	0.298	2.78
Thailand	-0.27	-20.65	0.46	0.315	0.012	-21.01
Mauritius	5.17	1.63	1.56	0.298	0.528	0.07
Turkey	1.38	-14.24	0.17	0.124	-0.003	-14.39
India	5.37	3.11	0.33	0.031	0.072	2.77
Uruguay	0.32	-4.58	-1.15	-0.168	0.131	-3.47
Chile	3.36	-6.40	-0.24	-0.174	0.100	-6.17
Albania	5.05	11.24	-3.56	-0.387	-0.089	15.35
Macau, China	0.22	8.18	0.93	-0.499	0.185	7.19

Convergent	
Cyclical	
Divergent	

Elasticity

>0.6
0.3< & >0.6
<0.3

Annex Table A2 continued: Private investment and private employment

	Average annual growth rates			Private EMP Elasticity		Capital (Private) / labour (Private) ratio
	GDP	Private GFCF	Private EMP	GDP	Private GFCF	Average growth rate
	2002-07			2002-07		2002-07
Seychelles	3.14	-3.33	4.87	1.202	0.144	-7.82
Chile	4.94	18.75	4.96	1.027	0.265	13.14
Panama	7.88	24.93	8.07	1.003	0.371	15.60
Mexico	3.37	9.76	3.79	0.813	0.240	5.75
Bahamas, The	1.61	10.33	2.37	0.795	0.160	7.78
Costa Rica	6.61	14.53	5.07	0.794	0.335	9.00
Jordan	7.44	29.08	6.20	0.764	0.197	21.55
Croatia	4.72	23.16	3.06	0.652	0.151	19.50
Botswana	4.75	18.51	2.09	0.423	0.108	16.08
Morocco	4.89	18.74	2.23	0.404	0.122	16.15
Philippines	5.73	9.56	2.17	0.365	0.181	7.24
Macau, China	17.79	29.73	6.28	0.361	0.237	22.06
Russian Federation	7.50	39.27	2.34	0.338	0.075	36.08
Vietnam	8.05	20.83	2.36	0.306	0.127	18.04
Trinidad and Tobago	9.17	9.13	2.62	0.297	0.255	6.34
Mauritius	4.01	15.30	1.09	0.271	0.079	14.05
Thailand	5.63	19.09	1.41	0.249	0.074	17.44
Antigua and Barbuda	7.68	7.70	1.87	0.242	0.174	5.73
Colombia	5.51	25.92	1.48	0.223	0.047	24.08
Sri Lanka	6.42	17.08	1.49	0.176	0.067	15.36
Ukraine	7.84	37.94	1.02	0.151	0.035	36.55
Malaysia	6.05	22.33	0.95	0.139	0.036	21.18
Armenia	13.05	51.22	1.60	0.124	0.034	48.84
Turkey	6.90	32.39	0.12	0.122	0.033	32.23
Azerbaijan	21.11	22.14	0.18	0.025	0.031	21.92
Syrian Arab Republic	4.24	20.45	-0.51	-0.228	-0.063	21.07

	Elasticity	
Convergent	>0.6	
Cyclical	0.3< & >0.6	
Divergent	<0.3	

ANNEX III: REPOSITORY OF VALUE CHAIN STUDIES IDENTIFIED

No.	Value Chain Study	Organization	Type of Study (Generic/Sector Specific)
1	An operational guide to local value chain development (2007)	ILO	Generic
2	Making strong links - A practical guide to mainstreaming gender analysis in value chain development (2009)	ILO	Generic
3	Upgrading in global value chains (2004)	ILO	Generic
4	Value chain development for decent work (2009)	ILO	Generic
5	Value chain analysis for policymakers and practitioners (2005)	ILO	Generic
6	Enhancing the role of SMEs in Global Value Chains (2008)	OECD	Generic
7	Insights from global value chain analysis (2007)	OECD	Generic
8	Linkages with Local Enterprises and Supply Chain Management (2002)	OECD	Generic
9	Staying competitive - moving up the value chain (2007)	OECD	Generic
10	Staying competitive - studies on Global value chain (2008)	OECD	Generic
11	Tracking performance - indicators of sustainable manufacturing (2007)	OECD	Generic
12	Meeting the Challenge of Private Sector Development: Evidence from the Mekong Sub-Region (2006)	OECD	Generic
13	Guidelines for a methodology to support value chains for BioTrade products (2009)	UNCTAD	Generic
14	Global value chains for growing national productive capacity (2006)	UNCTAD	Generic
15	Integrating developing country SMEs into global value chains (2010)	UNCTAD	Generic
16	LDC report 2007 (2007)	UNCTAD	Generic
17	Inserting Local Industries into Global Value Chains and Global Production Networks : Opportunities and Challenges for Upgrading with a focus on Asia (2004)	UNIDO	Generic
18	Agro- Food Value Chain Interventions in Asia, A review and analysis of case studies (2010)	UNIDO	Generic
19	Ethiopian Bamboo Value Chain Enhancement (2009)	UNIDO	Generic
20	Biofuels Value Chain in Africa (2009) (presentation)	UNIDO	Generic
21	Building Linkages for Competitive and Responsible Entrepreneurship (2007)	UNIDO	Generic
22	Global value chains in a post-crisis world (2010)	World Bank	Generic
23	Trade crisis and recovery: restructuring of global value chains (2010)	World Bank	Generic
24	Moving towards competitiveness: a value chain approach (2007)	World Bank	Generic
25	Analysis of dairy value chain in Zambia (2007)	ILO	Specific
26	Analysis of jathropha value chain (2007)	ILO	Specific
27	Developing the coir sector in the North-Western Province of Sri Lanka (2007)	ILO	Specific
28	Developing the Dairy Sector in North-Western and North-Central Provinces of Sri Lanka (2008)	ILO	Specific
29	Developing the floriculture sector in North-Western and	ILO	Specific

	North-Central Provinces of Sri Lanka (2008)		
30	Sector Specific Sources of Competitiveness in the Western Balkans - Automotive components (2009)	OECD	Specific
31	Globalization in Fisheries and Aquaculture - Globalization in the fish processing sector (2010)	OECD	Specific
32	Globalization in Fisheries and Aquaculture - Globalization in the fisheries retail sector (2010)	OECD	Specific
33	Remaking the movie - digital content film video industries (2008)	OECD	Specific
34	Value chain and economics of newspaper industry (2010)	OECD	Specific
35	Trade and Structural Adjustment: Embracing Globalization (2005)	OECD	Specific
36	Cocoa study - industry structures and competition (2008)	UNCTAD	Specific
37	Information economy report: ICTs, enterprises and poverty alleviation (2010)	UNCTAD	Specific
38	Sector assessment - bolivia - natural ingredients	UNCTAD	Specific
39	Sector assessment - colombia - natural ingredients	UNCTAD	Specific
40	Sector assessment - colombia - tropical flowers and foliage (2006)	UNCTAD	Specific
41	Sector assessment - ecuador - natural ingredients (2004)	UNCTAD	Specific
42	Sector assessment - peru - natural ingredients (2004)	UNCTAD	Specific
43	Sector assessment - uganda - ecotourism (2006)	UNCTAD	Specific
44	Sector assessment - uganda - natural ingredients (2004)	UNCTAD	Specific
45	Study of value chain finance for coffee and cocoa in Cameroon (2010)	UNCTAD	Specific
46	Policies for Small-Scale Sugar Cane Growing in Swaziland (2000)	UNCTAD	Specific
47	Commodity development strategies in the integrated framework (2009)	UNDP	Specific
48	Malawi agriculture - Integrated Framework (2002)	UNDP	Specific
49	Supermarket buying power commodity chains smallholders (2005)	UNDP	Specific
50	National Platform of Responsible Production and Trade of Pineapple in Costa Rica (start in 2011)	UNDP	Specific
51	Sustainable Tourism for Rural Development in Serbia (start in 2011, UN inter-agency, MDGF funded)	UNDP	Specific
52	Burundi: Essential Oils Industry; Dried Fruits and Vegetables Competitiveness Enhancement	UNDP	Specific
53	Observatory of Value Chain Competitiveness supporting many value chains including automotive parts in Mexico	UNDP	Specific
54	EIF/Cambodia, Rice value chain study (2010)	UNDP	Specific
55	Harnessing Sustainable Linkages for SMEs in Turkey's Textile Sector (UN inter-agency, MDGF funded 2010-2011est.)	UNDP	Specific
56	Nepal Micro Enterprise Development Programme (MEDEP, since 1998) six commodities value chain studies in bamboo, aloe, ginger, orange, chuyri/herbal soap, incense (2010).	UNDP	Specific
57	South Darfur Honey Pro Poor Value Chain Project (2010-2012)	UNDP	Specific
58	Sudan hibiscus value chain development program(2010-2012)	UNDP	Specific
59	Sudan sheep value chain analysis (2010)	UNDP	Specific
60	Maize, Simsim (oil seed), Pineapple and Beef Value Chain Analysis in Uganda (2010)	UNDP	Specific

61	Selecting High Potential Export Promoting and Import Substituting Value Chains for Malawi: Ground nuts, pigeon peas and soybean (2010)	UNDP	Specific
62	Cocoa value chain initiative in Ghana (since 2008)	UNDP	Specific
63	Facilitate high productivity and improve marketing of coffee farmers in Rwanda (2008-2009)	UNDP	Specific
64	Solomon Islands Sector assessments-cocoa, coconuts, oil palm, coffee, exotic and indigenous corps, rice and livestock sector assessments (2009)	UNDP	Specific
65	Pro-poor Horticulture Value Chains in Upper Egypt (start in 2009 – 2012 est. UN inter-agency, MDGF funded)	UNDP	Specific
66	The Integration of indigenous Andean producers into new national and international value chains in Bolivia (start in 2009 – 2012 est. UN inter-agency, MDGF funded)	UNDP	Specific
67	Developing competitiveness for the Brunca Region in the Tourism and agro-industry sectors in Costa Rica (start in 2009 – 2012 est.)	UNDP	Specific
68	Inclusive creative industries: an innovative tool for alleviating poverty in Peru (start in 2009 – 2012 est., UN inter-agency, MDGF funded)	UNDP	Specific
69	Strengthening the banana value chain in the Dominican Republic (start in 2009 – 2012 est., UN inter-agency, MDGF funded)	UNDP	Specific
70	Madagascar, Artemisia value chain development (since 2006)	UNDP	Specific
71	Market diversification for wine producers in Moldova (started 2006)	UNDP	Specific
72	Dairy, Pakistan (2006-2009)	UNDP	Specific
73	Aceh, Indonesia: Coffee & cocoa value chain study (2006-2010)	UNDP	Specific
74	Dairy Value Chains in Armenia (2006)	UNDP	Specific
75	Sub-sector value chain analysis (potato, cashew nuts) through the National Area Based Development Programme (NABDP) in Afghanistan (2002-2009)	UNDP	Specific
76	Agro-Value Chain Analysis and Development, UNIDO Approach (2009)	UNIDO	Specific
77	The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries (2003)	UNIDO	Specific
78	The Global Automotive Industry Value Chain: What Prospects for Upgrading by Developing Countries (2003)	UNIDO	Specific
79	The Global Wood Furniture Value Chain: What Prospects for Upgrading by Developing Countries (2003)	UNIDO	Specific
80	Unleashing Agricultural Development in Nigeria through Value Chain Financing (2010)	UNIDO	Specific
81	Global Value Chains in the Agrifood Sector (2006)	UNIDO	Specific
82	The Impact of World Recession on the Textile and Garments Industries in Asia (2009)	UNIDO	Specific
83	Africa's agriculture - a guide value chain concepts and applications (2010)	World Bank	Specific
84	Cameroon - agricultural value chain competitiveness study (2008)	World Bank	Specific
85	Commercial value chains in zambian agriculture (2009)	World Bank	Specific
86	Crisis and protection in the automotive industry - a value chain perspective (2009)	World Bank	Specific
87	Effects of crisis on automotive industry in developing	World Bank	Specific

	countries - a VC perspective (2010)		
88	Ethiopia - developing competitive value chains (2006)	World Bank	Specific
89	Extractives industries value chain (2010)	World Bank	Specific
90	Gender analysis of aquaculture value chain - Viet Nam Nigeria (2009)	World Bank	Specific
91	Global Apparel Value Chain, Trade and The Crisis (2010)	World Bank	Specific
92	Global value chains in the electronics industry (2010)	World Bank	Specific
93	Growing Mali's mango exports - linking farmers to markets (2010)	World Bank	Specific
94	Offshore services value chain - Developing Countries and the Crisis (2010)	World Bank	Specific
95	Quantitative value chain analysis - An Application to Malawi (2010)	World Bank	Specific
96	Shrimp fresh asparagus and frozen soybeans in Thailan (2004)	World Bank	Specific
97	The Gabon Timber and Thai Cassava Value Chains (2010)	World Bank	Specific
98	Tourism sector in mozambique - a VC analysis 2 (2006)	World Bank	Specific
99	Tourism sector in mozambique - a VC analysis 1 (2006)	World Bank	Specific
100	India: Agricultural Marketing And Value-Chain Development (2008)	World Bank	Specific
101	Nigeria: Policy Note On Industry Value Chain And Growth (2008)	World Bank	Specific
102	Philippines: Infrastructure And Supply Chain Logistics For Enhancing Agribusiness (2010)	World Bank	Specific
103	Using Value Chain Approaches in Agribusiness and Agriculture in Sub-Saharan Africa (?)	World Bank	Specific