Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa

Framework Paper

July 2008

JBIC Institute
Japan Bank for International Cooperation
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The main arguments on the Aid Effectiveness have transformed over time “capital shortage in 1960s-70s”, “policy failure in 1980s”, “institution failure in 1990s”, and “infrastructure failure in 2000s”. The studies behind those arguments treated ODA as “cause” and economic growth and/or poverty reduction as “effect”, and simply regressed “effect” on “cause” or investigate “what kinds of causes” can bring “good effects”. The studies did not examine the inside of cause-and-effect linkage and left the process as the “black-box”.

This study tries to focus on the “black-box” or the “process” to reconsider the aid effectiveness by analyzing institutions ensuring the sustainability of infrastructure services; what kinds of institutional changes occurred and how donors and recipients interacted to contribute those institution changes in the process of infrastructure projects.

We hope this study would give innovative perspective to the future studies on aid effectiveness, and provide good insights into dialogues among all the stakeholders during the project implementation.

We would like to express our sincere gratitude for the kind cooperation and support rendered by all the researchers and persons involved.

July 2008

Hiroto Arakawa
Executive Director
JBIC Institute
Acknowledgement

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Mr. Taro Katsurai  Development Research Group
Structure of the Research Paper

This research paper, JBICI Research Paper No. 36, is a compilation of eleven papers listed below, prepared as the output of the research project.

- Framework paper: No. 36-1
- Case Studies of Indonesia, Philippines, Thailand and Vietnam: No. 36-2
- Case Studies of Ghana, Kenya, Senegal and Tanzania and Thematic paper: No. 36-3
- Synthesis paper: No. 36-4

In the process of writing papers, meetings and workshops were held to exchange opinions and comments with the members of the research project (Chronology of the Research Project). As for the country case studies, the respective researchers conducted fieldworks targeting the projects as listed (List of the Target Projects for Country Case Studies).

Chronology of the Research Project

<table>
<thead>
<tr>
<th>Date</th>
<th>Tasks and Events</th>
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<tr>
<td>2006</td>
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<tr>
<td>September 20</td>
<td>Brainstorming Session in Tokyo</td>
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<tr>
<td>December 17 &amp; 18</td>
<td>1st Preparatory Meeting in London</td>
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<tr>
<td>2007</td>
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<td>January 19</td>
<td>2nd Preparatory Meeting in Tokyo</td>
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<tr>
<td>February</td>
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<tr>
<td>March – May</td>
<td>1st Fieldwork: Country Case Studies</td>
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<tr>
<td>June 1 &amp; 2</td>
<td>Mid-term Workshop in Nairobi</td>
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<tr>
<td>June – Oct.</td>
<td>2nd Fieldwork: Country Case Studies</td>
</tr>
<tr>
<td>December 15-17</td>
<td>Final Project Workshop in Tokyo</td>
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<td>2008</td>
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<td>Submission of Papers: Framework, Thematic and Country Case Studies</td>
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<td>May 15</td>
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</tr>
<tr>
<td>May</td>
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<tr>
<td>July</td>
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# List of the Target Projects for Country Case Studies

## Research Paper No. 36-2

**Indonesia**

<table>
<thead>
<tr>
<th>M1</th>
<th>Brantas River Basin Development Project</th>
<th>JBIC, JICA</th>
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<tr>
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<td>Jakarta Water Supply Development</td>
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**Philippines**

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<tr>
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<th>Batangas Port Development</th>
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<td>R1</td>
<td>Pasig River Rehabilitation Project</td>
<td>ADB</td>
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<tr>
<td>M2</td>
<td>Circumferential Road No.3 Construction Project</td>
<td>JBIC</td>
</tr>
<tr>
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**Thailand**

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<tr>
<td>R1</td>
<td>Private sector investment in infrastructure in the 1990s</td>
<td>N.A.</td>
</tr>
<tr>
<td>M2</td>
<td>Small Scale Irrigation Program</td>
<td>JBIC</td>
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<td>R2</td>
<td>New Village Development Program</td>
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**Vietnam**

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<td>R1</td>
<td>National Highway No.10 Improvement Project</td>
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</tr>
<tr>
<td>M2</td>
<td>Rural Infrastructure Sector Project</td>
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## Research Paper No. 36-3

**Ghana**

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<th>JBIC</th>
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<tr>
<td>M2</td>
<td>National Electrification Project</td>
<td>WB</td>
</tr>
<tr>
<td>R2</td>
<td>Self Help Electrification Project</td>
<td>Gov. of Ghana, JICA</td>
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**Kenya**

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<thead>
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<th>M1</th>
<th>Bura Irrigation and Settlement Scheme</th>
<th>WB, European Development Bank etc.</th>
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<tr>
<td>R1</td>
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<td>JBIC</td>
</tr>
<tr>
<td>M2</td>
<td>Nairobi Water Supply Project</td>
<td>JBIC, WB, African Development Bank (ADB), European Investment Bank</td>
</tr>
<tr>
<td>R2</td>
<td>Nyeri Town Water Supply System</td>
<td>Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Kreditanstalt für Wiederaufbau (KfW)</td>
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**Senegal**

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<th>WB</th>
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<tbody>
<tr>
<td>M2</td>
<td>Debi Irrigation Project</td>
<td>JICA</td>
</tr>
<tr>
<td>R2</td>
<td>Ndombo-Thiago / Thiagar Irrigation Project</td>
<td>French Cooperation, WB</td>
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**Tanzania**

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<th>China</th>
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<tbody>
<tr>
<td>M2</td>
<td>Lower Moshi Agricultural Development Project</td>
<td>JBIC</td>
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<tr>
<td>R2</td>
<td>Kapunga Rice Irrigation Project</td>
<td>AfDB</td>
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</tbody>
</table>

M: Main Project  R: Reference Project
Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa

Framework Paper

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<tr>
<td>CPIA</td>
<td>Country Policy and Institutional Assessment</td>
</tr>
<tr>
<td>HIPC</td>
<td>Highly Indebted Poor Countries</td>
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<td>ICA</td>
<td>Infrastructure Consortium for Africa</td>
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<tr>
<td>LAC</td>
<td>Latin America and the Caribbean</td>
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<tr>
<td>LDCs</td>
<td>Less Developed Countries</td>
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<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
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<tr>
<td>NEPAD-IPPF</td>
<td>NEPAD Infrastructure Project Preparation Facility</td>
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<tr>
<td>ODA</td>
<td>Official Development Assistance</td>
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<tr>
<td>PPE</td>
<td>Pro-Poor Expenditure</td>
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<tr>
<td>PPP</td>
<td>public-private partnership</td>
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<tr>
<td>PPPs</td>
<td>Private-Public Partnerships</td>
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<tr>
<td>PRSP</td>
<td>Poverty Reduction Strategy Papers</td>
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<tr>
<td>SAPs</td>
<td>Structural Adjustment Programmes</td>
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<td>SSA</td>
<td>Sub-Saharan Africa</td>
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1. INTRODUCTION

This research project is set to take on the challenge that keeps haunting development partners: how can aid more effectively support economic development and poverty reduction. A comparative analysis of the East Asia and Sub-Saharan African regions could offer an important insight into this question, as the contribution of aid to economic development appears to diverge significantly between the two regions, in particular in assisting the development of the institutional capacity to sustain economic development. Hence, drawing on analysis of comparative development experiences in Sub-Saharan Africa and East Asia from an institutional perspective, the study addresses this critical question in the context of aid-supported infrastructure investments.¹

Our study goes beyond the question on how infrastructure contributes to growth and poverty reduction at an aggregate level, to address specifically the role of aid and international donors in contributing towards institutional development for delivering sustainable infrastructure services. Since the inception of Official Development Assistance (ODA), the financing of infrastructure has been an important element of most aid packages, although the emphasis in terms of sector, size, location and development purpose has undergone frequent changes. The experiences with this form of aid have been equally varied and ranges from triggering processes of dynamic growth and poverty reduction to creating infamous “white elephants”. The immediate question to an observer is: how much is aid to be credited or blamed? We may not able to provide a simple answer to this intriguing question, but a key research issue posed in this study is what donors, and their partners, can learn from past infrastructure projects. In particular, in view of recent declarations of scaling up infrastructure investments in Sub-Saharan Africa (SSA), the study tries to contribute to the debate what can be done differently from the past, so that renewed efforts in infrastructure development could really facilitate economic development and poverty reduction in the region.

The objective of this Framework Paper is threefold. Firstly, it relates the project to a number of debates in the academic literature and development policy circles that inform, in combination, the focus, research questions and design. Secondly, it presents some key aggregate data which could reveal main differences in the pattern and delivery modalities of foreign aid and infrastructure endowments between the

¹ Infrastructure is defined in this study to include transport, water and sanitation, power, telecommunications and irrigation.
two regions, so that country case studies could be placed in a region-wide comparative perspective. Finally, it introduces a set of research questions addressed specifically in the project and presents research design commonly used in our eight country studies drawn from the two regions.

Accordingly, the rest of the framework paper is organised in three sections. Section 2 introduces relevant background debates to this study. The background debates and comparative statistics are presented around the following four thematic topics:

- Comparative analysis of economic development in the East Asia and Sub-Saharan regions. Here we highlight the need to extend analysis beyond ‘policy explanations’ to ‘institutional perspectives’ (Section 2.1);
- The debate explaining Africa’s ‘Growth Tragedy’. We evaluate how the role of aid and infrastructure is discussed in explaining economic development experiences in SSA (Section 2.2);
- The recent renewed emphasis in the literature on the role of infrastructure development in economic growth and poverty reduction and the debate on financing modalities for infrastructure development (Section 2.3);
- The debate on aid effectiveness, distinguishing aid effectiveness contingent on policy prescription through conditionality and that of contingent on recipient capacity and ownerships. We emphasise here the need to go beyond aggregate analysis of various postulated aid-induced macroeconomic relationships to gain a deeper understanding into conditions and mechanisms under which aid could assist institutional development for infrastructure service delivery for economic development and poverty reduction (Section 2.4).

Section 3 presents some key features regarding aid flows and infrastructure development challenges facing Sub-Saharan Africa in a comparative perspective. These include aggregate statistics on the trend, pattern and delivery modality of aid flows (Section 3.1), aid flows specific for infrastructure development (Section 3.2), and infrastructure endowments and challenges in Sub-Saharan Africa. In the light of this debate, we examine some key statistics on comparative infrastructure endowments in SSA and East Asia and the trends in aid flows to infrastructure development in the two regions (Section 2.3).

In Section 4, we formulate research questions and present our common analytical framework for studying aid-financed economic infrastructure projects. Infrastructure projects present an interesting challenge in understanding the effectiveness of aid for institutional development, since they typically invoke many of the classical aid concerns, such as tying of aid, international standards on environmental and social
safeguards, public participation, procurements rules, transparency and corruption, transfer of knowledge, appropriate technology, capacity development and access by the poor. Two critical questions can arise in this context: (1) how the sustainability of infrastructure investments can be secured, and (2) how recipient and donor institutions interact to promote ownership and partnership? In short, how can donors most effectively be partners to national governments and agencies to develop sustainable infrastructure services?

In order to answer to these questions, we adopt an institutional perspective as a guiding analytical principle for eight country case studies and the subsequent synthesis of these case studies. Section 4.1 presents two key research questions: the sustainability of infrastructure based services and the role of aid in affecting policy, ownership and capacity. Section 4.2 presents detailed research design which would guide institutional analysis of project case studies as well as the synthesis of case studies.
2. THE BACKGROUND DEBATES AND COMPARATIVE STATISTICS

2.1 Comparative Analyses of East Asia and Sub-Saharan Africa

A point of departure for our study is the striking difference in development trajectories of East Asia compared to Sub-Saharan Africa since the beginning of the 1960s. From 1965 to 1989 GNP per capita grew at average 5.2% per year in East and Southeast Asia, while SSA managed only 0.3% average annual growth rate on this period (Stein 1995:31). The GDP per capita for East Asia & Pacific stood at $760 in 1992, only about 40% higher than the figure for SSA – $530. Twelve years later, however, the difference is striking with an average GDP per capita of East Asia & Pacific three times that of Sub-Saharan Africa – $5,872 and $1,946 respectively. Similarly, in 1977, life expectancy at birth in Africa was 47 years while it was 63 years in Asia; in 2004, they were 46 years and 70 years, respectively. What contributed to the difference in development trajectories?

In comparative economic growth literature one frequently encounters a juxtaposition of the dismal growth performance of the Sub-Saharan Africa economies against the strong growth record of the East Asian economies. In particular, before the Asian crisis of 1997/98, the East Asian development experiences were popularly presented to policy makers in Africa as an attractive example to draw lessons from. During the course of three decades towards the close of the 1980s, many of the East Asian economies managed not only to register “admirable” growth rates but also to accomplish relatively equitable income distribution with dynamically evolving changes in socio-economic structures. The sharp contrast in economic performance of the two regions prompted the examination of factors and conditions that gave rise to the diverse outcomes, in particular because both regions had been subject to the same turbulent global environment.

In their early attempts, mainstream economists attributed the divergence in economic performances between the two regions since 1960s almost exclusively to policy differences, especially the difference in policies for international trade and investment. Indeed, there has been a clear disparity in the degree of integration into the global economy between the two regions. Aggressively following an outward-oriented development strategy, most East Asian economies not only accelerated the process of integration into the world economy but also upgraded their linkages in the years of their rapid economic growth. In contrast, the majority of SSA countries failed to take advantage of the opportunities provided by globalization. In the 1970s and 1980s, instead of becoming more integrated into the world economy, they were largely
marginalized and experienced slow growth and stagnation. With growing recognition of their disadvantageous positions, most SSA countries have increasingly searched for ways to accelerate their participation in the world economy over the past two decades.

Among several studies, the East Asian Miracle study (World Bank 1993) is perhaps one of the most publicized attempts in the 90s to examine key policy conditions for “success” of economic management in eight East Asian countries and draw lessons from the Asian experiences for other developing countries. In this context, it is important to note that the Asian Miracle debate was stimulated by and couched in the growing criticisms from social scientists as well as political activists of the structural adjustment policies of the World Bank and the IMF during the 1980s. Central to this debate is the role of the state in fostering economic growth. On the one side of the debate is the neo-classical economic view, which underpinned the policies of the two Bretton Woods Institutions at the time, arguing that: (a) markets and their rationally competing business actors are best left to themselves for the economy to grow; (b) undistorted markets are what underlie successful economic development; and hence (c) the role of the state should be limited to preventing market distortion. The counter position, which gained momentum during the 1990s and was given various labels – new institutional economics, structuralist approach or new political economy, view state intervention by ‘developmental states’ as an essential part of development strategy. It was argued that economic growth in East Asia can only be explained if the effect of various state-led policy interventions and public investments to promote export-led growth are taken into account.

Classifying economic policies into fundamentals and selective interventions, the World Bank ‘Miracle Study’ acknowledged the prevalence of systematic government intervention (via multiple channels) to address market failures in these economies, in particular in Northeast Asia. However, it rejected the replicability and appropriateness of interventionist policies for other developing countries, and instead recommended other countries to focus on economic fundamentals and thereby create a market-friendly environment rather than on getting interventions to work. This main policy conclusion was seen by critics as resulting from the failure, on part of the World Bank team of the ‘Miracle Study’, to understand the interdependence between fundamentals and selective interventions. As critics note, macroeconomic fundamentals are in reality anchored in a policy formation and implementation context, and hence in “micro-institutions that exhibit pervasive state interventions” (Amsden 1994:627).

Further, policy measures themselves, as noted by Kwon (1994), are not the sole factor determining the success or failure of policies. Indeed, given frequent institutional failures in policy implementation, the selection of sound measures may
not necessarily ensure the success of policies. Equally, the difference in the growth performances between East Asian economies and other regions cannot be explained only in terms of a fundamentally different set of policy choices such as export orientation or market liberalization (Woo-Cummings 1996). The effectiveness and outcome of policies depend on multiple factors originating from internal domestic conditions and external environments, specific to countries and regions. Without deeper appreciation of these complex macro-micro interfaces, the ‘Miracle Study’ failed to assess seriously how elements of the East Asian model can be adapted to suit conditions in other countries.²

Such misunderstandings had led to an equally one-sided interpretation of the East Asian crisis of 1997/8, which erupted in the wake of the gradual embrace of globalisation by African countries. The crisis, which started as a financial crisis arising primarily as financial excess, not a crisis of fundamentals, clearly exposed the severe difficulties in managing national economies in highly regionally integrated and globalising environments. The lessons from the Asian crisis, if drawn correctly, could have helped SSA countries to draw a strategy towards financial globalisation. Yet, as the crisis fast unfolded into a deeper general economic crisis of the whole region through the contagion effects, some commentators started forcefully arguing that the Asian Crisis was specific to the East Asian model due to “crony capitalism”, riddled by insider dealings, corruption and non-transparent corporate governance. The region’s economic policies, which were previously regarded as a key ingredient in creating the miracle, were suddenly written off as a “curse” for engendering the disaster. Such naïve assessments of the complex process of economic development cannot provide a satisfactory answer to the equally important question of why most East Asian economies have subsequently managed to engineer a rather quick turn-around from the crisis, compared with the historical experiences of other regions, and resumed their quest for a dynamic growth path since then.

In a previous study of comparative development experiences of the two regions (Nissanke and Aryeetey 2003), we challenged the simplistic interpretation of the East Asian economic performances often found in the mainstream literature. These unsatisfactory interpretations of the causes of either the miracle or the crisis only obscure a much needed realistic understanding of the conditions and factors that could explain the very different growth and development experiences of SSA and

² The ‘Miracle Study’ has also been criticized for its selective and incomplete references and presentation of empirical evidence and its tendentious and biased interpretation (Amsden 1994; Kwon 1994; Lall 1994). Rodrik (1994) criticized the study for failing to register the relative equality of income, wealth and schooling as an important initial condition, rather than a consequence, of economic development in East Asia.
East Asia over the last four decades. We argued that for drawing effective lessons from comparative studies, similarities and differences in locally prevailing conditions should be analysed in sufficient depth. These conditions encompass the economic, socio-political and cultural environments as well as societal interests and historical constraints, which can be summarized by what institutional economics succinctly refers to as institutional structures and environments. They differ enormously by country and by region. Equally disparate is the external environment facing a particular economy, i.e., the forms and extent of participation in the regional and global economy.

Thus, in Nissanke and Aryeetey (2003), we presented a framework of *comparative institutional analysis* as an alternative approach to examining the development processes that underlie each region’s experiences. Using this framework we analysed several key features of East Asian economies in terms of: institutional environments and organisational governance structures; markets, evolution of markets and market failures; the roles of government, the nature of the state and state failures; and governance structures and mechanisms. Against this analytical and comparative perspective, we attempted to delineate the main characteristics of key economic and civic institutions in Sub-Saharan Africa (governments, financial institutions and private agents, private firms, and households), and the forms and nature of their interactions.

### 2.2 Aid and Infrastructure in the Debate on ‘Africa’s Growth Tragedy’

#### 2.2.1 The debate on Africa’s growth tragedy

In the early development policy debate applied to sub-Saharan Africa, two contrasting views prevailed. While one emphasised the historically evolved unequal relations with the West as the main cause of the region’s poor development performance, the other attributed its cause mainly to the large-scale prevalence of government policy failure.

Indeed, the weak foundation of many African economies is vividly illustrated by their modes of international linkages. These economies are still uncomfortably dependent on a very limited number of primary commodities exports and remain vulnerable to vicissitudes of externally determined price and volume movements. Yet, Africa’s competitiveness in world markets of traditional commodities has declined over time, while exports of manufactured goods, which could generate dynamic externalities in technology- and skill-upgrading and deeper economy-wide linkages, represent only about 5% of total exports. These structural features have made African
economies extremely vulnerable to external shocks. A narrow tax base for raising revenue means that the internal fiscal balance and external trade balance are closely linked and both are exposed to the high volatility of commodity prices and the long-term tendency of their term’s trade to decline.  

A critical question arises why Africa has failed to change its disadvantaged form of international linkages with the rest of the world. On the onset of the external debt crisis in SSA and the heated debate surrounding the structural adjustment programmes and the nature of the policy conditionality attached to the structural adjustment loans, the predominant diagnose at the time was that at the root of African problems were the dirigiste economic policies. In particular, inward-looking trade policies and overvalued exchange rates were seen as a prime factor for Africa’s weak external condition. Liberalisation and deregulation measures were supposed to address the structural weakness of the African economies. Thus, since the early 1980s to the mid-1990s, the gravity of opinion had over time shifted generally towards a diagnosis that failure of the African state is the chief culprit (Adam and O’Connell 1999). Reflecting this sentiment, Elbadawi and Ndulu (1995) concluded that “SSA has been more severely impacted by adverse external shocks but it has also failed to deliver a growth enhancing policy environment — be it at the economic level or in terms of stable and effective governance structure”.

However, faced with the continued “slowness” of expected supply responses of private agents to new liberalized and deregulated policy environments of the donor-sponsored structural adjustment programmes, the literature debating on the causes of ‘Africa’s growth tragedy’ has to extend the list of explanations for Africa’s slow growth beyond the ‘policy failure’ hypothesis. In response, there have emerged a large number of studies that have sought to explain the differences in economic performances across developing countries through theoretical modelling and cross-country regression analyses in a framework of endogenous growth theory. These have further extended the list of factors giving rise to weaker growth performances of the African economies to an array of variables such as natural and institutional endowments, the quality of institutions and governance and geography (Acemoglu et al 2001 and 2004; Sacks and Warner 1995, 1997 and 2001; and Rodrik et al. 2002 among others).

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3 See Maizels (1992) for the extent of the terms of trade deterioration for the region in the 1980s.
4 See Collier and Gunning (1999a &b) for explaining the poor performance of African economies, including their continued weak and fragile balance-of-payments positions predominantly in terms of the ‘policy failure’.
Referring to these studies and based on their analyses carried out within the AERC Growth project, O’Connell and Ndulu (2000) and Ndulu (2006) provide further explanations for the slow growth of the SSA economies in terms of sovereign fragmentation, ethnolinguistic fractionalisation and more generally geographical disadvantages. These conditions are seen to result in uncharacteristically high costs of development in the region and could explain in a large part the lower rates of economic growth, investment and very low productivity of investment in SSA compared with other developing countries. They observe that both the growth rates and investment efficiency in SSA is about half of the average obtained in other developing regions.

2.2.2 Infrastructure deficiency as a critical impediment to Africa’s growth and poverty reduction

Now, these disadvantages in natural endowments and geographical locations can be overcome only by concerted efforts in infrastructure buildings. Ndulu (2006) cites several empirical studies that unequivocally shows under-investment in infrastructure can limit economic and productivity growth. Without extensive transport infrastructures to surmount geographical disadvantages such as low population density, distances among settlements, or limited coastlines, for example, the high transport cost intensity of commodity trade limit the level and scope of production and trade, and prohibit from exploiting economies of scale and achieving high productivity and efficiency (Lima and Venables 1999; and Sacks and Warner 1995, 1997 and 2001). Thus, the high cost and low efficiency in investment in SSA could be significantly attributed to inadequacy in infrastructure.

Further, poor infrastructure is now widely acknowledged as a key contributing factor to less competitive and disadvantaged positions facing firms operating in SSA by adding disproportionately high cost of doing business. Milner et al (2000) estimate that in Uganda transport costs add the equivalent of an 80 per cent tax on clothing exports. Output losses due to power outrages are high in many SSA countries, nearly 10 % in Kenya and 6 % in Uganda. In Uganda, firms have to spend, on average, about a quarter to one third of their investment funds in own power generators (Ndulu et al 2005). Equally, poor infrastructure is increasingly recognised as a critical impediment to poverty reduction by escalating the cost of delivery of public services to the poor in SSA. For example, building rural roads would increase primary school enrolment rates, while access to clean water or improvement in sanitation would reduce child and infant mortality rates, as discussed in detail below in Section 2.3.

Esfahani and Ramirez (2003) remark that for most African economies distance from their primary markets and the high transport intensity of their products are major
impediments for production and trade. Limao and Venables (1999) similarly argue that the transport and other costs of doing business internationally are important determinants of a country’s ability to participate fully in the world economy, since remoteness and poor transport and communications infrastructure isolate countries, inhibiting their participation in global production networks. Using a gravity model, they show how transport costs depend on both countries’ geography, and on their levels of infrastructure (measured by an index combining road, rail and telecommunications density). They suggest that most of Africa’s poor trade performance can be accounted for largely by poor infrastructure.

It is, therefore, really both surprising and disturbing that it has taken so long to reinstate the critical importance of infrastructure investment for African development. This reflects largely the unhealthy situation evolved since the early 1980s, wherein the priority of the development agenda for Africa is predominantly set by the donor community, in particular by the international finance institutions. Indeed, the donor community, led by the World Bank and IMF, has dominated the policy debate for SSA since the initiation of the Structural Adjustment Programmes, and they had long leaned heavily towards policy-based explanations for Africa’s poor economic performance. They have to climb a rather steep learning curve over time to realize that the simple adoption of liberalisation and deregulation measures would not be sufficient to address Africa’s development challenge. Along this learning curve, the aid relationship between the donor community and African countries evolved, as Adam and O’Connell (1999) note, from the “capital shortage” diagnosis in the 1960s and 1970s, to the “policy failures” diagnosis in the 1980s, and finally to the “institutional failures” diagnosis in the 1990s. Now, finally, the ‘infrastructure’ failure has got a due attention in the 2000s.

Belated official re-acknowledgement of Africa’s disadvantages in infrastructure development has entailed a heavy cost in terms of forgone economic growth and poverty reduction. This is because both economic and social infrastructures are known to be ‘public goods’, where public financing through governments and external agencies are supposed to have an active role in their provisions at least at the early stage of economic development. On one hand, with the advent of the debt crisis in the 1980s, fiscal retrenchment has been consistently pursued as part of the stabilisation–cum-adjustment policies in SSA. Many governments in the region have been left with little capacity and resources to undertake public infrastructure investment on a sustained basis. Typically, it is large-scale infrastructure projects that get first axed in fiscal expenditure allocations at the times of crises. On the other hand, as shown in Section 3.2, the donor community reduced aid to economic infrastructure projects in relative to overall aid as well as to social infrastructures in SSA.
As Ndulu (2006) notes, three reasons can be given for accounting for the sharp reduction in the share of resources allocated to economic infrastructures by African governments and the donor community in favour of raising spending in social sectors in the 1990s. The first reason is the perceived failure of many donor- and government-funded infrastructure projects in the past, dubbed often as ‘white elephants’. Some of these projects were manifestly ‘wrong’ from the inception, as they were motivated almost exclusively by political considerations, rather than carefully justified in economic terms. The others failed because of inadequate provision for recurrent and maintenance costs, unrealistic pricing or prevalence of regulatory forbearance or gross mismanagement. The second reason is the relentless drive for public divesture, privatization and deregulation across infrastructure sectors, including provisions of water, telecommunications, transport and power. The third reason is the powerful advocacy for shifting public spending towards social sectors such as health and education partly as result of the deliberations of the Copenhagen Social Summit in 1995.

2.2.3 The resurgence for infrastructure investment drive

After the unfortunate neglect over more than two decades, the vital role of economic infrastructure for development and poverty reduction is now widely acknowledged in the recent debate among the development policy circle as well as in academic literature on economic development. Indeed, almost exactly 10 years on after the Copenhagen Social Summit, the Commission Africa Report (2005) proclaimed: “Poor infrastructure is a critical barrier to accelerating growth and poverty reduction.... Infrastructure is a key component of the investment climate”. Thus, there was a thorough review of “the balance between spending on economic infrastructure and social services, not so much as trade-offs in decisions, but as complementary measures for achieving the MDGs “ (Ndulu 2006:228).

The renaissance bestowed to infrastructure is evident in the subsequent policy documents adopted at the annual meetings of the African Development Bank, in May 2006. Their Policy Framework Paper starts from the basic premises that “Africa presents major infrastructural deficiencies and sub-Saharan Africa in particular is lagging behind other regions in terms of infrastructure quality and delivery of infrastructure services” (AfDB 2006:2 italic added).

Given this enormous infrastructure deficiencies, the Commission for Africa argues: “Africa needs an additional US$ 20 billion a year investment in infrastructure. To support this, developed countries should provide an extra US$10 billion a year up to 2010 and, subject to review, a further increase to US$20 billion a year in the
following five years. This should support African regional, national, urban and rural infrastructure priorities – ranging from rural roads and slum upgrading to ICT and the infrastructure needed to support greater integration of Africa’s regions and to enable Africa to break into world markets”. Thus, in its call for an immediate doubling of ODA to Africa to $ 50 billion a year, the Commission for Africa recons about a half of ODA to be spend in infrastructure building between 2010 -2015 as part of working towards the MDGs.

Such a steep increase in ODA in infrastructure development inevitably raises a question over the *absorptive and implementation capacity* on the grounds in SSA as well as the need for a policy framework and institutional arrangements for disbursing aid of this enormous proportion. As discussed in Section 3, Sub-Saharan Africa has become a developing region, most dependent on foreign aid. As Sundberg and Gelb (2006) note, nearly $650 billion in aid (in 2004 prices) has been provided to SSA by OECD DAC countries. Given the unsatisfactory progress to economic development found in SSA today after more than four decades of aid delivery of this magnitude, a critical question is inevitably asked: whether and how we could improve effectiveness of foreign aid in achieving economic development and poverty reduction in the continent. Indeed, the recent aid effectiveness debate was initiated in the mid 1990s by the worrisome ‘weak links’ in the aid- growth macroeconomic relationships found most notably in Sub-Saharan Africa, as discussed in Section 2.4 below.

Comparative microeconomic studies of infrastructure projects in the two regions are relevant because the success of East Asia’s ‘shared’ growth could be seen, in non-small measures, as resulting from concerted efforts in infrastructure development sustained over several decades. We noted elsewhere (Nissanke 2006; and Nissanke and Thorbecke 2008) that the pro-poorness of growth in East Asia, observed till the mid-1990s, is not purely a manifestation of market-driven growth effects. The ‘shared’ growth in East Asia was built on the pro-poor pattern of public expenditure in favour of rural poor at the early stages. There were concerted efforts on the part of many governments in East Asia to facilitate building primary assets of the poor through such measures as equitable distribution of primary productive assets resulting from radical land reforms; extensive public provision of free and universal primary education; promotion of small-scale enterprises and development of rural infrastructure – roads, irrigation, schools, agricultural support outposts, health stations, and irrigation systems. In turn, these wealth-sharing mechanisms provided legitimacy for governments to pursue pro-growth and pro-business economic policy.

In another early study which explores relevant lessons from East Asian economic development for Africa, the central role of infrastructure comes out in all the case
studies – Japan, Korea, Taiwan, Hong Kong, Singapore and Malaysia (Stein 1995). Stein argues for the need for financing infrastructure investment as public goods and strengthening the state capacity to deliver infrastructure services on a sustainable basis, which are identified as prerequisites for spurring and sustaining private initiatives and investment.

It is, therefore both timely and important to undertake a systematic comparative study how aid has impacted on local institution development for infrastructure investment and delivery of infrastructure service in the two regions.

2.3. Debate on Infrastructure and Economic Development and Financing Modality

2.3.1 The interrelationships between infrastructure, growth and poverty reduction

In recent years, there have emerged a number of empirical literatures that examines the contribution of infrastructure to economic growth and poverty reduction. Based on cross-country regressions, World Development Report 2004 presents an estimate showing that on average, a 1% increase in infrastructure stock is associated with a 1% increase in GDP. Applying cross-country regressions over the period of 1965-95 to a structural model of infrastructure and growth that accounts for the simultaneity between infrastructure and GDP, Esfahani and Ramirez (2003) find that the contribution of infrastructure services to economic growth is substantial and that, in general, it exceeds the cost of provision of those services. However, they also show that realizing the potential of this effect for economic growth depends on institutional capabilities and organisational arrangements in infrastructure sectors.

Calderon and Serven (2004) provide an empirical evaluation of the impact of infrastructure development on economic growth and income distribution using a large panel data set of over 100 countries for the period of 1960-2000. Their results show that: (i) growth is positively affected by the stock of infrastructure assets, and (ii) income inequality declines with higher infrastructure quantity and quality. These two results combined suggest that infrastructure development can be highly effective to combat poverty. Furthermore, their illustrative simulations for Latin American countries suggest that these impacts are economically significant, and highlight the growth acceleration and inequality reduction that would result from increased

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6 Their empirical results are based on a number of GMM estimations of equations for GDP growth and inequality measures regressed on infrastructure quantity and quality indicators in addition to standard controls. To measure infrastructure quantity and quality, disaggregated and synthetic index are used for the accessibility and efficiency of services across the telecommunication sector, the power sector and the transportation sector.
availability and quality of infrastructure.

The link between infrastructure and poverty reduction is most often indirect, and depends on the degree of “trickle down” and distributional effects of economic growth. Directly, infrastructure investments contribute towards poverty reduction through targeted services and employment opportunities. This perspective was marginal in the World Development Report of 1994, whereas ten years later the World Development Report made *Making Services Work for Poor People* the central topic (World Bank 2004). The report focuses on services critical to the poor as clients and consumers – education, health services, drinking water and sanitation and electricity – and concludes that services fail to benefit the poor in four ways. First, governments spend very little of their education and health budgets on the poor, and public spending is typically enjoyed by the non-poor. Second, even when government reallocates in favour of the poor or areas where the majority are poor, there are problems getting the money to the frontline providers. Third, there are few incentives to service providers to work for the poor. Finally, there is a lack of demand. Poor people decide not to use or pay for services because of low quality, costs, distance or cultural factors. There is no simple policy response to these problems, and responses must be adjusted to varying country conditions. The general message of the Report, however, is twofold – empowerment of the poor as clients in influencing policy makers and disciplining providers, and strengthened incentives for providers to serve the poor.

A number of empirical studies have been carried out to examine the effect of infrastructure services on the poor. A literature survey by Brenneman and Kerf (2002) finds strong evidence of positive impacts of infrastructure on education and on health outcomes. Datt and Ravallion (1998) find that significant variations in changes in poverty levels between 1960 and 1990 across Indian states can be explained by infrastructure variables. That is, the states starting with better infrastructure and human resources saw significantly higher long-term rates of poverty reduction. Deninger and Okidi (2003) obtain similar results in exploring factors underlying growth and poverty reduction in Uganda during the 1990s. The results suggest that improving access to basic education and health care depends on complementary investments in electricity and other infrastructure. Fan et al. (2002) document the critical role of infrastructure development, particularly roads and telecommunications, in reducing rural poverty in China between 1978 and 1997. They show that poverty fell because of the growth in rural non-farm employment that followed expansion of economic infrastructure. Further, an empirical estimate by Leipziger et al. (2003) suggests that differences in access to safe water explain about 25 percent of the difference in infant mortality between the poorest and richest quintiles, and 37 percent of the difference in child mortality. Similarly, the difference in access to
sanitation between the poorest and richest quintiles accounts for 20 percent and 10 percent, respectively, of the difference in the prevalence of malnutrition.

### 2.3.2 Financing modalities for infrastructure development

Indeed, there has long been a universal agreement that infrastructure stock per capita is closely correlated with GDP per capita (World Bank 1994). Hence, as a country’s economy grows the amount of infrastructure increases. This is, however, a two-way process in that growth itself creates demands for infrastructure and, the other way round, investments in infrastructure are viewed as essential to foster growth – i.e. to remove bottlenecks. The policy discourse on infrastructure reflects this ambiguity; is infrastructure the horse or the wagon? It is both, but when should investments be dictated by demands and often market-based supply mechanisms, and when should it be supply driven with the state strategically investing in infrastructure based on an understanding of non-realized potentials?

If we take a look at the World Bank - the largest single financier of public infrastructure in developing countries, we see a shift in emphasis between these two positions over time. Between 1950 and 1959, 61% of World Bank lending went to infrastructure, reflecting its approach to post-war reconstruction in Europe. In the 1960s and 1970s there was a striking expansion in infrastructure in low income countries, most dramatically in the roads sector. Expansion continued throughout the 1980s, but then it flattened out (World Bank 1994:25). For most of this early period investments were by and large governmental and parastatal, with ODA as a major source of finance, and projects were mostly supply driven.

The rise of development paradigm emphasizing on the virtues of liberalisation, deregulation and privatisation during the 1980s had a profound impact on policies for infrastructure financing. The World Development Report 1994 *Infrastructure for development* is a testimony to the shift towards demand based thinking in infrastructure development. The report identifies the need for changing the incentives in the provision of infrastructure services by strengthening the demand side. The report’s main recommendations are summarized in the following captions: “manage infrastructure like a business”; “introduce competition” and “give users and other stakeholders a strong voice and real responsibility” (World Bank 1994:2). These policy measures, while obviously also ideologically driven, responded to some real problems that were summarized as inefficient operations, inadequate maintenance, fiscal drain, unresponsiveness to user demands, neglect of the poor and neglect of the environment.

Reflecting the shift in dominant paradigm and these practical concerns, the World
Bank advocated greater private sector involvement and full-cost recovery in utility provision. Both proved difficult to achieve, not least in Africa. The net result was a major decline in infrastructure projects. Infrastructure lending, which had constituted about half of Bank lending in 1987 and earlier, fell to an all time low of 30% in 2003. This trend had been reinforced by the negative image of the Bank created by civil society opposition to many Bank financed projects and a general shift in the donor community towards governance and social sectors.

Given the enormous challenges facing investment, operation and maintenance in the infrastructure sector, divesture and privatisation of public utilities and telecommunication sectors were pushed and pressed forward as a solution across developing and transition countries in the 1990s. As discussed above, the predominant view prevailed at the time in the policy circle was that once these sectors are deregulated through privatization measures, private investors would take over and turn around the coverage and quality of infrastructure services everywhere. Yet, this optimism proved to be unfounded, in particular in relation to Sub-Saharan Africa, as discussed in Section 3.3.

In reality, private investment in economic infrastructure has plummeted from a high of $128 billion in 1997 to only $48 billion in 2003 globally across developing and transition economies (Briceno-Garmendia et al 2004). These conditions, in particular little private investment taken place in SSA and in water/sanitation services may be at least partly, a reflection of the well-known fact that there is a big wedge between private returns and social returns in providing utility services in poor arrears. The initial sunk costs of infrastructure investment in poor, inaccessible areas are very high, yet the cost recovery through pricing and user charges is known to be impossible without commitments of substantial public financial resources. As noted by Briceno-Garmendia et al (2004), access to infrastructure can have little effect, if services are not affordable. Appropriate pricing of services often has been one of the most difficult issues to be addressed in infrastructure reforms.

Given the higher social returns than private return to infrastructure investment as well as high risks involved in large projects with long-gestation periods, it is not surprising that the public sector remains the largest contributor to the financing of infrastructure. On average, middle income countries spend roughly between around 2% of GDP on infrastructure, while low income countries - around 4%. According to Briceno-Garmendia et al (2004), these are up to 3% lower than their estimated investment needs. During the 1990s, the public sector across developing countries drastically reduced its contribution to infrastructure development due to the unfounded optimism that private finance would be made available; fiscal austerity
required; and decentralization resulting in mismatches between resources and needs. Unfortunately, the sharp decline in public sector financing has been compounded by an equally drastic reduction in ODA for financing economic infrastructures during the 1990s.

As noted above, the correction to this reduction has been initiated in the 2000s, as infrastructure deficiencies have been finally identified as a critical gap for economic development in SSA among the donor community. Thus, at the beginning of the new millennium infrastructure was again put back on the agenda at the World Bank, and with it a resuscitation of supply based thinking. The surge of in-house and Bank-sponsored research outputs on the effects of infrastructures on economic growth and poverty reduction reviewed above reflects the re-evaluation of its position towards infrastructure investments and financing. On the policy front, the Bank had learned that “(p)private participation is not a panacea – governments remain central to the delivery of infrastructure services, either as providers or enablers. No other actor can compensate for government weakness in strategy, regulation, or risk management” (World Bank 2006b:4).

In summarising the main lessons from the last two decades, the Bank identified six overarching issues. Contrary to the lessons identified in 1994, the new lessons all call for stronger strategic involvement of the state: (1) projects should be better tailored to local circumstances, not relying on standard engineering solutions; (2) investments need to be poverty-focused involving pro-poor regulations and participatory approaches; (3) the political economy of private participation must be better understood and regulatory approaches must be adapted to country circumstances; (4) environmental and social issues have to be integrated in all phases of the project cycle; (5) corruption must be fought more forcefully; and (6) the Bank and borrowing governments must improve communication with national and international stakeholders (World Bank 2006a).

In Section 3 of this paper, we shall examine some key comparative data on infrastructure endowments and challenges as well as trends in infrastructure financing in Sub-Saharan Africa.
2.4. The Debates on Aid Effectiveness and Aid Modality

2.4.1 Aid effectiveness contingent on policy prescription: the conditionality debate

In the early 1980s, there was a radical change in aid delivery structure from project aid toward policy-based programme aid. Structural Adjustment Programmes (SAPs) had become a favoured conduit for both multilateral and bilateral aid, with a string of strict ‘policy’ conditionality instituted. Policy conditionality was justified on the grounds that donors should actively influence the policy and conduct of recipient countries through ‘aid’ leverage. *Ex-ante* conditionality, whereby foreign aid and budget supports were delivered conditional upon the promises of implementation of stabilization-cum-structural reforms, had become a dominant feature in the donor-recipient relationships. As Kanbur (2005) notes, ‘conditionality’ itself is nothing more than the rules and procedures according to which a donor transfers resources to a recipient. What is debated, however, is the nature of conditionality, in particular that of ‘policy’ conditionality, which has been practiced to date in one form or another.

By the mid 1990s, however, despite adding an array of political and economic conditionality, the donor community had to face the uneasy reality: *ex-ante* policy conditionality was not effective to “tie the hand of recipient governments to donors’ reform agenda” (e.g. Killick 1996 and 1997; Collier 1998; and Collier and Dollar 2004). This sparked off a new round of the aid effectiveness debate against the background of declining public support for foreign aid in donor countries (World Bank 1998). The poor record of compliance and enforcement of policy conditionality was recognised in various evaluation reports on World Bank’s adjustment loans (World Bank 2005). In particular, the recent aid effectiveness debate has been conducted specifically in relation to the impact of aid on economic development in SSA, as shown in Section 3 below.

The efficacy of policy conditionality has been a central question in the aid effectiveness debate over the last decade or so. In the debate, *ex-ante* policy conditionality has been examined largely from a narrow perspective of the moral hazard problem, i.e. the problem arising from granting foreign aid without a firm commitment to reform programmes on the part of recipient countries. Assessed from this perspective, it has been argued that policy conditionality was faulted on incorrect rationales given to adjustment lending, since an effective mechanism to deal with the

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7 For more detailed discussion see Nissanke (2008) and Nissanke and Ferrarini (2007), on which this sub-section is partly drawn.
moral hazard problem was absent.

Collier (1998) argues, for example, that none of the three rationales for programme lending, namely the use of aid as an incentive for reform, financing the ‘cost of adjustment’, and ‘defensive lending’ to service external debt, are soundly based. Similarly, Easterly (2003) explains the failure of ex ante conditionality in terms of incentive systems affecting donor behaviour. He suggests that despite continuous breach of policy conditionality by recipient governments, donor agencies have kept “moving money” and “pushing loans” under constant pressure for improving their own performance indicator, assessed in terms of aid disbursements.

With recognition of the difficulty in overcoming the moral hazard problem \textit{ex-ante}, it had been proposed to overhaul the aid allocation rule, so that aid is allocated on an \textit{ex-post} policy performance basis. Thus, while ex-ante conditionality is ‘incentives-based’ aid allocation on promises for policy change, ex-post conditionality is claimed to be ‘selectivity-based’ on retrospective assessments of performance. That is, in place of using conditionality to induce policy change, it is suggested that aid should be used to target financial flows on those governments that have already established good policy environments (World Bank 1998). Creating star performers by engineering aid allocation, Collier (1998) further argues, would induce non-reforming governments to change their policies through the pressures of emulation, and would result in enhanced overall aid effectiveness. It has been argued that through the ex-post selectivity approach, donors can affect growth and poverty reduction through their allocation of aid and debt relief.

Indeed, the aid effectiveness debate has been conducted in parallel in search for lasting debt relief measures to deal with the severe debt overhang condition found in Highly Indebted Poor Countries (HIPC). The donor community launched the HIPC Initiative in 1996 and three years later enhanced its scope and depth, as a real and durable exit option from the protracted debt crisis for HIPC.\footnote{See Nissanke and Ferrarini (2001&2004) for our critical evaluation of the HIPC Initiative.} Under the HIPC Initiative, the process conditionality is instituted as part of formulating Poverty Reduction Strategy Papers (PRSP), which is supposed to be a recipient-driven process.\footnote{Mosley, Hudson and Verschoor (2004) propose a new conditionality to tie aid specifically to poverty reduction in the form of the Pro-Poor Expenditure (PPE) index in the PRSP process.} The debt sustainability analysis has been routinely integrated into the PRSP process and the HIPC debt relief negotiations. Finally, the Comprehensive Development Framework, introduced in 1999 in place of Structural Adjustment Programmes, emphasises the importance of ownership and partnership in the aid
relationships. It has been heralded that new aid architecture has been built, where a selectivity based aid allocation is used ex-post policy conditionality and the debt sustainability analysis is integrated into the ‘performance-based’ aid allocation process.

Thus, the new aid architecture as emerged today from the aid effectiveness debate has adopted the ‘selectivity’ rule as a guiding principle for aid allocation. However, it is well known that the analytical and empirical basis for the ‘selectivity’ approach rests almost entirely on cross-country regression results of the growth-aid relationship at the aggregate level such as the study by Burnside and Dollar (1997). They draw a very strong policy conclusion from the ‘significant’ positive coefficient on the policy-aid interaction term in their cross-country regressions. They claim that while aid generally does not have any significant effect on the rate of economic growth or investment, the growth-enhancing effect of aid can be found only in a ‘good policy’ environment. These empirical studies have been severely challenged on a number of technical grounds (see Easterly, Levin and Roodman 2004; Dalgaard and Hansen 2001; and Hansen and Tarp 2001a&b among others).

In recognition that the policy-performance indicators used in the original Burnside-Dollar study are too limited, the World Bank subsequently presented a more comprehensive matrix – ‘Country Policy and Institutional Assessment (CPIA)’ – for assessing and ranking countries according to their institutional and policy environment for long-term growth and poverty reduction. Using the CPIA as a screening device, further studies by Collier and Dollar (2001, 2002 and 2004) reiterate the earlier claims by Burnside and Dollar that the aid and policy can interact in such a positive manner for economic growth that “aid enhances the growth effect of policy and good policy increases the growth effect of aid (Collier and Dollar 2001:1788)”.

Acknowledging that aid is used by donors for other objectives than accelerating economic growth, Collier and Dollar (2001 and 2002) extend their analysis to arrive at a ‘poverty-efficient’ allocation of aid as a bench mark for assessing the performance of the actual allocation in terms of achieving the poverty reduction objective. On the basis of similar cross-country regressions, they advocate that aid should be given to countries with ‘good’ policy while allowing for the differences in the incidence of poverty to arrive at a ‘poverty-efficient’ allocation as close as possible within the ‘aid-policy’ configuration. The technical basis of their cross-country regression

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11 A poverty-efficient allocation of aid is defined as one in which the marginal cost of poverty reduction is equalised across recipient countries. Collier and Dollar (2004) discuss aid-allocation rules for achieving other donor objectives such as a ‘security –efficient’ allocation.
results on aid-growth-policy trajectory remains rather fragile and unconvincing as the basic thrust of their econometric exercises is the same as the original Burnside-Dollar study. Further, the use of the CPIA index can be objected on several technical grounds, including its endogeneity to the growth process.\textsuperscript{12} Despite these criticisms, the ‘selectivity’ rule had a strong appeal for the donor community as an effective instrument to overcome the moral hazard problems in dealing with recipient governments.

In particular, their ‘poverty-efficient’ aid allocation proposal has indeed become influential in the policy debate on the feasibility of achieving the Millennium Development Goals (MDGs), where the poverty reduction is singled out as the most important objective of giving aid and publicised as such in order to mobilise public support for securing aid budgets in donor countries.\textsuperscript{13} On the basis of their simulation analysis, it is claimed that the MDG target in poverty reduction is more likely met by a combination of more efficient aid allocation, policy reform and more generous aid. Their estimates proclaim, for example, that the proposed ‘poverty-efficient’ aid allocation would reduce the number of poor people by an extra 18 million per year compared with the poverty reduction achievable under the allocation practiced hitherto.

Despite the direct strong impacts these empirical studies had on policy making and actual aid allocation of IDA at the World Bank as well as by other major donors, their analytical weakness have been exposed subsequently (e.g. Rajan and Subramanian 2005). Bourguignon and Sundberg (2006) attribute this weakness to the treatment of the complex causality chain linking external aid to final outcomes as the black box in these cross-country regressions, as well as to the heterogeneity of aid motives, the limitations of the tools of analysis. They argue the need for disentangling the causality chain inside the black box as a first step towards gaining a deeper understanding of the impact of aid on economic development (Figure 2.1). Such detailed analyses of the causality chain cannot be executed through reduced-form cross-country regressions at the aggregate level, which have been a popular analytical tool in empirical research on aid effectiveness.\textsuperscript{14}

\textsuperscript{12} Dalgaard, Hansen and Tarp (2004) suggest using instrument such as ‘the fraction of land in tropics’ for the CPIA index for the regression analysis, so that the endogeneity problem of the CPIA index is dealt with. See Nissanke (2007) and Nissanke and Ferrarini (2008) for further critical assessments on the construction of the CPIA index and its appropriateness for use in aid allocation.

\textsuperscript{13} Their proposal was, for example, used as a guide in US aid allocation of the Millennium Challenge Account (Collier and Dollar 2004).

\textsuperscript{14} However, Bourguignon and Sundberg (2006) note that the difficulty in establishing the counterfactual and attribution makes case studies on the impact of aid at the project level equally challenging.
2.4.2 Aid effectiveness contingent on recipient capacity: the ownership debate

As the academic debate on aid effectiveness and conditionality has been evolved and unfolded, the need for forging effective partnerships between the donor community and the government and the civil society of recipient countries has also increasingly been recognized as one of conditions for increasing the aid effectiveness and the ownership of aid programmes by the recipient countries. Thus, aid effectiveness does also rest critically on the nature of the recipient-donor relationships as well as on trained and experienced manpower and efficient aid delivery procedures and mechanisms. In fact, the non-compliance of traditional ex ante conditionality can be explained by the unfortunate aid relationships developed, in which ‘policy’ conditionality was dictated by the donor community. Clearly, the issue of aid effectiveness or aid dependence and debt sustainability cannot be effectively analysed and debated without reference to the unequal aid relationships. Equally, the appropriateness of economic policies and political institutions cannot be judged or assessed in isolation from prevailing country-specific conditions. While the blame for the policy failure has been placed too readily on recipient governments and institutions in terms of poor policy environments and their incapacity, the donor community has to take a fair share of responsibility for the poor relationships evolved over the last few decades. As Bourguignon and Sundberg (2006) notes, the donor community has imposed policy conditionality with imperfect knowledge of the local environment.

In many cases, policy reforms were forced upon recipient countries under the SAPs
as stringent conditions in return for debt relief and foreign aid. Recipient governments often found impossible to implement these policies in their domestic political economy context, as they were certain to generate a sharp configuration of winners and losers. The timeframe for implementation was often unrealistic. These reform packages were sometimes so contentious that donor governments themselves would have found them hard to implement or to sell to their own domestic constituencies. Thus, the donor-recipient relationships had been severely impaired by the two-decade long experiences with policy conditionality, whereby a series of restrictive policy conditionality was imposed as a universally applicable basis for reforms. Yet, the conventional way of debating the effectiveness and enforcement problems of policy conditionality has been inhibiting. For it has hardly departed from the assumption that policy reforms recommended by donors are generally appropriate for dealing with economic problems facing developing economies.

Yet, unless an uncompromised ‘policy space’ is accorded to recipient countries in setting their own development agenda and policy strategy, the real ownership of economic reform programmes cannot be bestowed in the hands of recipient countries. The lack of sense of ownership and partnership could propagate and promote a ‘cheating’ behaviour on the part of the agents-recipients. There should be a room for open discussions and debate on different development models, rather than imposing monolithic models. In this context, Morrissey (2004) emphasises the importance of allowing a process of policy learning and policy experimentation and leaving the policy choices to recipient governments for the sake of establishing ownership as well as encouraging partnership. Donors should play a role of ‘second fiddle’ in this policy making process, providing technical assistance and information services.

There should also be a policy space for institutional innovations. In this context, Rodrik (2004) argues that “effective institutional outcomes do not map into unique institutional designs” and that “there is no unique, non-context specific way of achieving desirable institutional outcomes. Since what works will depend on local constraints and opportunities, we should bear in mind that institutional prescriptions should be contingent on the prevailing characteristics of the local economy and that institutional design has to be context-specific” (Rodrik 2004:9).

What is urgently required is mutual respect so that the two parties could fully and truly engage in learning from each others’ development experiences, taking into account their different historical and cultural backgrounds. Recipient governments are increasingly demanded to be accountable to the donor community. This by itself may not pose a problem, but high pressures from donors on important policy matters could place recipient governments in a conflict with their responsibility towards their own
citizens. Such situations can easily undermine the democratic credentials of recipient governments. It is a high time to depart from unproductive aid relationships and to work towards cultivating a mutual trust and respect, conducive to producing positive global public goods: a sustainable economic development and an enduring political stability in recipient countries.

On reflection, it can be said that the aid effectiveness debate conducted mainly at the aggregate macro-relationships may not shed a real insight how to make foreign aid effective for economic growth and poverty reduction. Remarking that aid is given for many different purposes and in many different forms, Hansen and Tarp (2001) suggest that the unresolved issue in assessing aid effectiveness is not whether aid works, but how and whether we can make the different kinds of aid instruments at hand work better in varying country circumstances. Indeed, we can find many examples where aid had made so much difference to the local communities, including the extreme poor, while it is equally true that there are many cases aid has been simply wasted or diverted outright for other purposes. What is required is to examine closely and in detail under what sort of political and social condition and institutional environments that aid can be most effective in creating a basis for self-sustainable development in a country-specific context.

Furthermore, while aid is treated as a single entity in most cross-country regression studies on the aid-related macroeconomic relationships, aid is delivered in a host of different forms. As shown in Section 3, aid varies enormously in its form of delivery modality and sources. Hence, it is somewhat misleading to conduct a debate at a general level, such as whether aid should be given in grants or loans. Some forms of aid such as food aid should be given more in grants as it is usually provided as an emergency aid. On the other hand, a preferred form of project aid may be loans as projects tend to have a long gestation period with a huge sunk cost, but generating a steady rate of returns or income streams over time. In this context, Cohen et al. (2005) also argue that subsidised contingent loans are superior over outright grants in financing productive investment in countries facing high vulnerability to external shocks such as natural resource price volatility. What is critically required for avoiding repeated debt crises is the readiness on the part of the donor community to draw genuine incentive-compatible, state contingent aid and debt contracts (Nissanke 2008 and Nissanke and Ferrarini 2007). Finally, aid flows are so heterogeneous in many aspects, that aid effectiveness cannot be meaningfully examined at a simple aggregate level without taking into account this considerable heterogeneity of aid flows in their delivery modalities and sources. Hence, the following section will present some historical trends in the pattern and modality of aid flows in Sub-Saharan Africa in comparison with those observed in East Asia.
3. SUB-SAHARAN AFRICA IN A COMPARATIVE PERSPECTIVE: AID FLOWS, INFRASTRUCTURE ENDOWMENTS AND FUTURE CHALLENGES

3.1. Main Features of Aid Flows: Sub-Saharan Africa and East Asia Compared

Sub-Saharan Africa (SSA) has become the developing region most dependent on foreign aid. In 2004, Sub-Saharan Africa received on average $35 per capita in foreign aid of the highest along with the Middle East and North Africa region (Figure 3.1). According to World Bank estimates, average ODA per capita for 1993-2002 for Kenya, Ghana, Tanzania and Senegal was $19.7, $33.5, $32.0, and $58.3 respectively. Average annual (1993-2002) aid per capita for Mozambique and Zambia was $65.6 and $82.6. These numbers can be compared with those for selective East Asian countries: e.g. $0.3 for Malaysia, $2.0 for China, $7.3 for Indonesia, $10.8 for Thailand, $11.4 for the Philippines, and $14.3 for Vietnam.

Measured as percentage of GNI, the aid dependence of SSA increased from the mid 1970 till the mid 1990s on account of its dwindling GNI. The decline of aid flows since 1995 produced a reduction of the region’s aid dependence, but the recent surge in aid...
flows to SSA has again increased the ODA-GNI ratio. In 2004, the average ODA-GNI ratio for the region stood at 5 percent, which is far exceeding those for other developing regions (Figure 3.2). There are considerable variations in the aid dependency ratio among individual countries: average annual aid share in GNI for 1993-2002 was 6.8 percent for Kenya, 10.2 percent for Ghana, 11.6 percent for Senegal, and 15.1 percent Tanzania. The share goes up significantly for Zambia at 23.1 percent and Mozambique at 40.3 percent. The average annual share for the same period for countries in East Asia is markedly lower. 0.3 percent for China, 0.5 percent for Thailand, 1.0 percent for Indonesia, 1.1 percent for the Philippines, and 4.3 percent for Vietnam.

Clearly, the dependency ratios in SSA has increased considerably since 1980s and remains high as today, whereas they have declined significantly in East Asia along with other developing regions including South Asia and Latin America. As a result, SSA has increased its share as a dominant recipient region as shown in Figure 3.3.

Figure 3.2: ODA as % GNI recipient group

Source: World Bank: WDI
Aid is provided in different modalities. It can be received in outright grants or concessional loans. Recipient countries also receive aid from different sources, i.e. multilateral institutions as well as different bilateral donors, and more recently global funds and international NGOs. Several distinctive characteristics can be noted in relation to the composition of aid flows to SSA, compared to other regions in terms of aid modalities and sources. Time series data on composition of aid by different modalities and sources to developing countries, SSA and East Asia are presented in Figures 3.4a-c, 3.5a-c and 3.6a-c below.
Figure 3.4b: ODA flows to SSA by aid modality

Figure 3.4c: ODA flows to EA by modality
Figure 3.5a: Grants-loans ODA flows

Figure 3.5b: Grants-loans to SSA
Figure 3.5c: Grants loans to EA

Figure 3.6a: Bilateral-multilateral ODA flows
Figure 3.6b: Bilateral-multilateral ODA flows to SSA

Figure 3.6c: Bilateral-multilateral ODA flows to EA
These time-series data suggest the following contrasting features of aid flowing to the SSA and East Asia regions:

- The developing world as a whole has been receiving ODA mostly as programme and project aid. However, there is a sharp increase in aid given as debt relief in 2005, reflecting a huge debt relief granted in that year to HIPCs. Aid in the form of technical cooperation is about a half of the size of programme and project aid combined, and stood at about $21 billion. Food aid accounts for another $10 billion. 80-85 percent of ODA is provided in grants to developing countries, while the lion share of aid to developing countries is provided by bilateral donors.

- Countries in SSA received an increasing amount of aid in recent years (until 2005) largely accounted for by a surge in debt relief – adding another $10 billion of aid in 2005 to $12-13 billion in programme and project aid. Aid in the form of technical assistance has remained at a stable level of about $5 billion measured in constant 2005 prices since 1980s, while dependence on food aid has been increasing over recent years. The share of grants in aid flows to SSA has increased significantly, now accounting over 90 percent of total aid to the region. 70 percent of aid to the region is provided by bilateral donors. Britain and France still account for a large share of bilateral aid to the region, followed by US, the Nordic countries, Germany and Japan.

- A smaller number of countries in East Asia receive official aid, as many countries in the region have successfully graduated from an aid dependent status. In contrast to SSA, aid received as programme and project aid has been declining, and food aid and debt relief account for a small share of total aid. As for SSA, the level of aid as technical assistance has remained constant. About 80 percent of aid is provided by bilateral donors with Japan as the main donor throughout the period since 1980s.

3.2. Aid to Infrastructure Development

The accumulated volume of aid provided to infrastructure development is considerable in SSA as well as in other developing regions. However, there are again notable features in the pattern of aid given for infrastructure investment in SSA compared to other regions including East Asia. Historical time-series data of ODA given to infrastructure – social and economic infrastructure combined – are taken from the OECD-DAC data set, and shown for all developing countries as well as for SSA and East Asia in Figure 3.7a-c. Unfortunately, data for economic and social infrastructure are only available since 1990 from the OECD-CRS data set. They are shown in Figure 3.8a-b for SSA and East Asia respectively. Further disaggregation by infrastructure sectors for the two regions is shown in Figure 3.9a-c.
Figure 3.7c: ODA to Economic and Social infrastructure in East Asia

Source: OECD-DAC

Figure 3.8a: Bilateral-multilateral financing infrastructure in SSA
Figure 3.8b: Bilateral-multilateral financing infrastructure in EA

Figure 3.9a: Water, social and economic infrastructure aid

Source: OECD-CRS
Figure 3.9b: Water, social and economic infrastructure in SSA

Figure 3.9c: Water, social and economic infrastructure aid in EA
From these statistical data, the following observations can be made:

- **Globally**, ODA available for financing infrastructure sectors (economic and social infrastructures combined) to developing countries stood at $40 billion in 2005, which accounts for about just over 40 percent of total ODA. The share of aid to infrastructure followed a general upward trend up to the mid 1990s, when it peaked at 60 percent of total aid. Since then it declined till the early 2000, and has since fluctuated between 40-55 percent (Figure 3.7a). Of the $40 billion provided for infrastructure financing across developing countries in 2005, only $10 billion was for economic infrastructure, about $27 billion for social infrastructure and $3-4 billion for water related infrastructure (Figure 3.9a).

- **SSA** received just under $9 billion specifically for infrastructure development (economic and social infrastructures combined) in 2005, which accounts for about 30 percent of total aid. Indeed, SSA received a much lower share of ODA for infrastructure financing compared to other developing regions, such as Latin America and Central and South Asia, which received between 60 to 70 percent of total aid for infrastructure financing. The share of infrastructure financing in total aid to SSA was nearly 60 percent in 1973 and fluctuated a lot, but followed generally a downward trend since the mid 1990s. It never reached the peak achieved in the early 1970s (Figure 3.7b). Of aid for infrastructure financing in SSA, more than 80 percent is for social infrastructure in the 2000s. Both bilateral and multilateral donors provided aid for social infrastructure much more than economic infrastructure (Figures 3.8a and 3.9b).

- In contrast, the share of infrastructure financing in total aid is generally much higher in **East Asia**. It fluctuated between 58-78 percent over the last decade or so. The share of infrastructure financing in the total aid followed generally an upward trend since the early 1970s (Figure 3.7c). Compared to SSA, infrastructure financing in East Asia has also been much more skewed towards economic infrastructure. Aid towards economic infrastructure and water related infrastructure, provided by both bilateral and multilateral sources accounts for two thirds of infrastructure financing (Figure 3.9c). Furthermore, aid to economic infrastructure was mostly provided by bilateral donors than multilateral agencies until very recently.

It can be noted, however, that infrastructure, comprising the four sectors of transportation, communications, water supply and sanitation, and energy and power supply, accounted for roughly 35 percent of the African Development Bank’s cumulative approvals of lending, grant and debt relief operations since 1967, total of which amounting to $52 billion. If AfDB’s commitments in support of social and agricultural infrastructure – school buildings, hospitals and clinics, as well as
irrigation and rural infrastructure – are also taken into account, the share of its resources invested in infrastructure raises to roughly 40 percent (African Development Bank (2006)). The AfDB’s Loan and Grant portfolio for 1967-2004 are shown in Figure 3.10a-b.

Figure 3.10a: AfDB’s cumulative Loan and Grant Portfolio by sector, 1967-2004

Figure 3.10b: AfDB Operation by Sector, 1967-2004
The main differences in the trends of the share of aid for infrastructure financing between the two regions certainly reflects the dominance of Japan as a bilateral donor in East Asia. Since it emerged as a major bilateral donor, Japan has consistently given high priority to infrastructure projects. Even at the times the World Bank decided to withdraw from financing for economic infrastructure, Japan’s aid to economic infrastructure remained at its previous level – about 40 percent. If financing for water supply is included, the percentage is even higher. In addition, physical infrastructure in the social sectors must also be added, which is a major component of Japanese aid to education and health.

3.3. Infrastructure Endowments in SSA

Of the world’s infrastructural stock estimated at $15 trillion, Briceno-Garmendia et al (2004) report that about 60 percent is in high-income countries (which contain 16 percent of the world’s population), 28 percent is in middle-income countries (with 45 percent of population), and 13 percent is in low income countries (with 39 percent of population). By regional comparison across developing countries, countries in SSA have undoubtedly been most disadvantaged in terms of both infrastructure endowments and quality of infrastructure services. Thus, the African Development Bank summarises the current state of infrastructure endowments in Africa as follows:

Only 30% of the African population have access to electricity, compared to 75% for other Less Developed Countries (LDCs); access to water and sanitation is about 65% compared to 80% for other LDCs; access to roads is 34% compared to 50% for other LDCs, while the penetration rate for telecommunication is less than 13% compared to world average of 40%. Deficient infrastructures and inefficient delivery of services – power and energy, shipping and transport, information and communications, water and sanitation – translate into crippling transaction costs that inhibit trade and investment and reduce the competitiveness of African products on the world market (AfDB, 2006:2).

The abysmal situation of Africa compared to other regions is further illustrated in Figures 3.11 – 3.14 using comparative time-series data. Coverage of basic infrastructure is particularly low in rural areas, whilst the quality of infrastructure services remains unacceptably poor in both urban and rural areas. Improving access and quality from the present state will undoubtedly require significant increases in investment in building new infrastructures as well as in operation and maintenance of services. With poor access to telecommunication and electric power, it is not surprising that SSA is significantly behind other regions in ICT, which is potentially a large handicap, since the present deep digital divide could position SSA countries grossly
disadvantaged in years to come where the globalization process today is largely technology and knowledge driven.

Figure 3.11: Electric power consumption (kWh per capita)

Figure 3.12: Sanitation and water facilities access (% population with access)
Figure 3.13: Internet users per 1000 people

Figure 3.14: Personal computers
3.4. Policy Challenges Facing Infrastructure Development in SSA

In the 1990s, with the shift in the developing paradigm and associated changes in policy towards structural adjustment and economic liberalization, there was a huge push towards deregulation and privatization to attract private finance for infrastructure investment and service delivery. The results for SSA were disappointing. Whereas, Sub-Saharan Africa attracted cumulatively $28.1 billion of private investment for the period from 1990 to 2002, East Asia and Latin America and the Caribbean (LAC) received $199.4 billion and $397.4 billion respectively, as shown in Table 1 below. It is worth noting that most of the private investment in SSA took place in the telecommunication sector (66 percent), followed by the electricity-power sector (18 percent). Very little private capital was made available in the transport and water sectors in SSA. It is also known that only a handful of countries in SSA, such as South Africa, attracted private capital for running such infrastructures and utilities.

African Development Bank (2006) reports the geographical distribution of privatization of enterprises in infrastructures in Africa, total of which amounted to US $7.95 billion in 2000 (Figure 3.15). Again, the distribution is skewed towards the Southern Africa region, which accounts for about a half of enterprises privatized in 2000.

Table 1: Cumulative Private Investment Commitments from 1990 to 2002 (2002-US$ billion) (*)

<table>
<thead>
<tr>
<th>Region</th>
<th>Telecom</th>
<th>Electricity</th>
<th>Natural Gas</th>
<th>Airports</th>
<th>Railways</th>
<th>Seaports</th>
<th>Toll-roads</th>
<th>W&amp;S</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia &amp; Pacific</td>
<td>56.2</td>
<td>68.3</td>
<td>6.8</td>
<td>2.8</td>
<td>10.3</td>
<td>11.2</td>
<td>26.8</td>
<td>17.0</td>
<td>199.4</td>
</tr>
<tr>
<td>Europe &amp; Central Asia</td>
<td>68.1</td>
<td>21.1</td>
<td>11.3</td>
<td>1.5</td>
<td>0.3</td>
<td>1.8</td>
<td>2.6</td>
<td>3.5</td>
<td>110.2</td>
</tr>
<tr>
<td>Latin America and the</td>
<td>182.9</td>
<td>100.4</td>
<td>19.5</td>
<td>7.5</td>
<td>18.3</td>
<td>6.0</td>
<td>40.6</td>
<td>21.3</td>
<td>397.4</td>
</tr>
<tr>
<td>Caribbean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. East and North Africa</td>
<td>10.6</td>
<td>8.4</td>
<td>3.9</td>
<td>0.9</td>
<td>0.2</td>
<td>1.2</td>
<td>-</td>
<td>1.3</td>
<td>26.5</td>
</tr>
<tr>
<td>South Asia</td>
<td>19.7</td>
<td>22.6</td>
<td>0.2</td>
<td>0.2</td>
<td>-</td>
<td>2.1</td>
<td>0.8</td>
<td>0.2</td>
<td>45.8</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>18.5</td>
<td>5.0</td>
<td>1.3</td>
<td>0.4</td>
<td>0.3</td>
<td>0.4</td>
<td>2.0</td>
<td>0.2</td>
<td>28.1</td>
</tr>
<tr>
<td>Total</td>
<td>355.9</td>
<td>225.7</td>
<td>43.0</td>
<td>13.2</td>
<td>30.3</td>
<td>22.6</td>
<td>72.8</td>
<td>43.6</td>
<td>807.4</td>
</tr>
</tbody>
</table>

(*) Numbers might not exactly add up, due to rounding

Source: World Bank, PPI Project Database
As noted earlier in Section 2, the recent initiatives in aid to Africa by the donor community envisage a turn-around in the provision of aid for economic infrastructure development, as evidenced in the Commission for Africa Report, signed off by the G8 governments in 2005. Given the small size of nation states in SSA, a number of regional infrastructure development initiatives have also been established as a way forward for creating open regionalism with market integration and improving cross-border infrastructure links. For example, under NEPAD Infrastructure Development Programmes, the NEPAD Infrastructure Project Preparation Facility (NEPAD-IPPF), the Infrastructure Consortium for Africa (ICA) and the Trans-Boundary Water Resource Management have been created. ODA is expected to underwrite risk in public-private partnership (PPP) infrastructure investment and service provision in these large national, cross-national and regional infrastructure programmes.

However, aid to infrastructure should entail not only mobilization of resources but also transfer of intangible assets such as knowledge, technology and management in enhancing the institutional capacity across infrastructure sectors for providing reliable quality services to the population. The issue of creating and developing institutions to ensure the ‘sustainability’ of infrastructure investments and service delivery should be addressed in aid provision from the outset. In this connection, it is important to note that SSA faces infrastructure deficiencies not only in the investment gap, but critically in the policy, organizational capacity gap in operating and maintaining services (African Development Bank (2006)).

Gaining an in-depth understanding of various conditions and constraints that have made foreign aid mobilized so far ineffective in raising the low coverage, poor maintenance and poor quality of infrastructural services is critically important, as the challenges facing the infrastructure sectors in SSA is daunting indeed. The recent
literature emphasizes several emerging issues in infrastructure development for making infrastructure services both equitable and efficient. These include: appropriate pricing of services; targeted subsidy schemes to both rural and urban poor; adequate provision of maintenance and operational costs; and setting up autonomous regulatory bodies for facilitating the Private-Public Partnerships (PPPs) in infrastructure development. In particular, PPPs are seen as a mechanism of leveraging private sector capital and technical and managerial expertise.

Yet, unfortunately, the issues for ‘institutional sustainability’ and the role of foreign aid and donors for contributing towards this objective of critical importance has not been received a due attention in literatures, as the latter tend to focus narrowly on financial engineering and technical efficiency criteria for completion of projects concerned. The experiences accumulated in East Asia are of considerable importance and relevance in building sustainable infrastructures for economic development in SSA, since East Asia is known to have provided the infrastructure underpinnings for economic growth and poverty reduction better than in other regions (Asian Development Bank et al 2005). China’s build up as a major donor to Africa further contributes to the need for studying aid modalities for infrastructure projects.

Non-insignificant resources have been mobilized for Africa’s infrastructure development to date. The issue is then clearly not only how to mobilize resources for new investment, but also how to enhance the institutional capacity for running infrastructure services in SSA. A question is inevitably asked how much foreign aid dispensed so far for infrastructure development has contributed to filling the institutional capacity gap across infrastructure sectors in SSA. Given the existing huge capacity gap and still precarious states in fiscal positions, foreign aid which could provide not only sustained flow of financial resources but also critical technical assistance would play a vital and catalytic role in developing and sustaining infrastructure sectors for the continent’s future, if, if donors could forge genuine development partnerships.
4. HOW TO APPROACH THE RESEARCH QUESTION:
THE SUSTAINABILITY OF INFRASTRUCTURE SERVICES

4.1. Justifying the approach

This section outlines a research design for studying the effectiveness of aid-financed economic infrastructure projects responding to the findings emanating from the contextual debates reviewed above and weaknesses in this literature. One main observation from the review is the dearth of empirical studies of concrete infrastructure projects or programmes. The analysis of the effectiveness of infrastructure investment, and aid more generally, has generally been conducted using macro level economic data overlooking the complex realities on the ground. Studies of concrete project experiences have even become rarer as the dominant aid paradigm increasingly has emphasised the role of aid in leveraging macro-policy reform. Furthermore, studies generally treat aid as a single entity which says very little about how aid in different fashions and forms of cooperation actually works – or not. We also notice that much of the aid effectiveness literature has been position driven reflecting ideological views of the authors rather than presenting thorough empirical documentation. Some of these studies have undoubtedly influenced aid policy of major donors, but they yield very little in the form of useful advice to practitioners on how to deliver aid at the level of implementation.

Therefore, to better inform national level planning and policy making there is a need for studying in-depth experiences with different forms of aid partnerships in different organisational and policy contexts. The four debates presented in Section 2 all point at the need for bringing in an institutional perspective in the analysis, and we decided in this study to develop a comparative case study approach involving a sample of major aid-financed infrastructure projects in eight countries – four in SSA (Ghana, Kenya, Senegal and Tanzania) and four in East Asia (Indonesia, Philippines, Thailand and Vietnam). The case studies respond to the call for seeing inside the ‘black box’ of institutional processes to better understand aid effectiveness.

4.2. The ‘black box’

Aid effectiveness is the outcome of a time-bound causality chain starting with initial inputs and initial conditions leading to changes in development outcomes measured in terms of established indicators (e.g. GDP growth, poverty rate, Gini coefficient, literacy rate, etc.). Most studies of aid effectiveness have focused on the beginning and the end of this causality change – what level and type of aid input seem to create what kind of development outcome, and there are fewer studies of what happens in
between. These intermediate processes have by some been referred to as a kind of ‘black box’ (Bourguignon and Sundberg 2006, Jerve and Skovsted Hansen 2007), arguing that further progress on aid effectiveness requires opening that box. What are the mechanisms and the processes by which aid funded infrastructure projects are turned into successful development outcomes? This causality chain from initial conditions and investment inputs to impacts is further illustrated in Figure 4.1 taking the example of a road project.

**Figure 4.1**

<table>
<thead>
<tr>
<th>Initial Condition</th>
<th>Project</th>
<th>Output</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donor’s behavior</td>
<td>Planning</td>
<td>Road condition ↑</td>
<td>Economic development</td>
</tr>
<tr>
<td>Aid coordination</td>
<td>Implementation</td>
<td>Traffic ↑</td>
<td>Impact to the poor</td>
</tr>
<tr>
<td>Capacity of recipient</td>
<td>Operation</td>
<td>EIRR ↑</td>
<td></td>
</tr>
</tbody>
</table>

Source: JBICI

The simple question is: what made infrastructure projects work, or not work? We will not simply compare or evaluate development outputs and impacts, whether in terms of contributions to growth or poverty reduction, but take those as part of project characteristics. This design revolves around two basic research issues:

- What contributed to the sustainability of infrastructure based services, or lack thereof?
- What role did aid and the donor partners play in determining these outcomes?

By **sustainable infrastructure** we mean **infrastructure services that both meet demands and are financially sustainable and adequately maintained**. The sustainability of infrastructure is not accidental. It is a product of project design as well as favourable institutional and policy conditions, and both planned and unforeseen events play a role. The point is, which is our main hypothesis, that the sustainability of such investments depends to a large measure on **institutional spillover effects**. It depends on intermediary and institutional outcomes of the project – e.g. impacts in terms of human resource development, capacity building and institutional and policy reform. It depends on what takes place in the ‘black box’. We assume that the validity of this argument is stronger the larger the project.
It has been argued that infrastructure aid projects in Asia have contributed to institutional reform, capacity building and human capital development of the recipient countries. For example, reflecting on the infrastructure development projects of Japan in Asia, Arakawa and Wakabayashi (2006) states that “The experiences at the project level have led to capacity building and the establishment of comprehensive country systems at the national level.” The main focus of this study is this presumed contribution of infrastructure aid to institution building, which is often not recognized and therefore less documented. Figure 4.2 illustrates this analytical perspective adding institutional effects to the causality chain presented in Figure 4.1.

Figure 4.2

Aid in this perspective is more than filling a financing gap in government budgets. It represent more than transfers of grants or concessional credit. It represents promoting or endorsing particular macro and sector policies, it represents transfer of knowledge, it represents impacts on institutions involved, and overall it represents lessons learned and ability to translate these into action. Therefore, it matters how the aid is provided and how donors think and act. The analysis of aid effectiveness is incomplete unless we better understand how recipient organisations make use of and are influenced by the aid relationship. If we better understand which factors contributed to the effectiveness of the selected projects in terms of their sustainability and the role of aid beyond financing we can draw informed lessons on how to scale up infrastructure aid in years to come.
4.3. How to analyse sustainability of investments

The concept of *sustainability* has been used in many different ways in development literature. In this study we propose to use the term to cover the combination of two features of a project. Firstly, a project is sustainable if it yields benefits in excess of total costs. This is a calculation that is often difficult to carry out, but ex-post assessments of cost-benefits will provide some explanation of why particular infrastructure services were sustained, or not. Secondly, we have to bring in the issue of operation and maintenance over time. Sustainability implies also that physical facilities and expected services do function for a considerable period after the construction phase. There are cases where potentially sustainable projects, in economic terms, are not maintained, and vice versa, economically unsustainable projects being maintained at unacceptable costs. Sustainability therefore is a combination of net development benefits and actual longevity of the services installed.

- The project case studies will be analysed with these two dimensions of sustainability in mind.

Furthermore, we suggest taking an institutional approach to the study of these dimensions of sustainability. In analysing institutional arrangements it may be useful to establish criteria for *institutional performance* that can lead to sustainability. The following analytical concepts and performance criteria are potentially relevant:

- **Economic efficiency**: the ability to provide services at costs not exceeding the benefits generated.
- **Equality**: the ability to counteract common problems such as free-riding and illegitimate biases towards certain groups ensuring fair distribution of benefits and sharing of costs.
- **Redistribution**: the ability to provide services on the basis of the ability to pay. Pro-poor infrastructure investments entails addressing the challenge of overcoming barriers of the poor, because of economic, social, legal og geographic factors, to access services.
- **Accountability**: the ability of various stakeholders to influence decision-making.
- **Adaptability**: the ability of organisations to learn from experiences and adjust to changing circumstances.

Where capital is invested in physical facilities the cause of failure, or success, in maintaining such assets and effectively deliver services cannot be attribute to an easily identifiable cause. However, Ostrom et al (1993) argue that there is one underlying analytic cause for failure or success, namely the set or sets of incentives
facing “participants in the design, finance, construction, operation, maintenance, and use of facilities” (p.8). Incentives stem from many sources, and they are perceptions of individuals involved of positive or negative changes in outcomes likely to result from actions they are taking. According to Ostrom et al (1993) we can assume that individuals are rational in trying to generate net benefits in a given situation. What motivates different categories of actors will differ however. An early step in the analysis, therefore, is to identify the main actors involved.

- Which are the organisations involved and what are the main perceptions of positive outcomes that motivate these actors?
- What are the dynamics between the key institutions and actors identified?

This approach considers the nature of incentives facing the actors involved in the different phases of the project cycle – planning, implementation, and operation and use. The incentives are formed by the particular socio-cultural and political environment where the actors operate. Core actors in infrastructure projects include designers, builders and operators-maintainers. The sustainability perspective outlined above, however, implies widening this set also to include policy-makers as well as citizen-consumers. In aid financed infrastructure project the presence of international donors widens the institutional set-up further. Studying the types of incentives that motivate behaviour of these various actors in a concrete project and over time is part of the analysis.

A main challenge, according to Ostrom et al (1993) of how to craft appropriate institutions to encourage long-term sustainability has to do with the incentives of those who do the day-to-day work and those who use the services. There is a need for appropriate award structures and involvement of users in financing through forms of cost-sharing, they argue. In particular, attempts should be made to identify the effects of and seek remedies to perverse incentives, such as:

- Rent seeking among core actors in the project.
- Political favouritism.
- Absence of mechanisms through which beneficiaries can express preferences.
- Disbursement pressure on the donor side.
- Linking aid to commercial/political interests of actors on the donor side.

4.4 How to analyse the role of aid

Politicians, researchers and the general public in donor countries all tend to ask the same question: can we document the effects of aid in fostering national economic
growth, good governance and reduced levels of poverty? The scientific discourse on aid effectiveness is dominated by macroeconomic and macro political perspectives and much of the academic literature addresses this question through cross-country comparisons using aid disbursement figures and various indicators of economic, social and political development. As argued above, these analyses leave a huge black box unopened – namely the concrete means by which aid financed activities influence processes of change that subsequently translate into changing macro level indicators.

Development aid is believed to have played a positive role in stimulating East Asia’s development, whereas critics argue that aid might have had the opposite effect in Africa. However, studies of aid effectiveness based on cross-country comparisons do not yield strong evidence of either. In a recent summary of this literature, the World Bank’s Chief Economist concludes that “it appears to be a small but insignificant impact of aid on growth” (Bourguignon and Sundberg 2006). Similarly, this type of analysis also gives no conclusive evidence as to the role of aid in fostering policy change.

What are then critical drivers of aid effectiveness? Recent studies on the role of aid seem to converge on three main factors: policy, ownership, and capacity (Choritz 2002). Although much of this literature takes the country as the unit of analysis, using labels such as national policies, country ownership and national capacity, these concepts are equally relevant when directing the focus to the level of concrete infrastructure projects. In researching the role of aid in our case projects we propose addressing how aid influenced policy, ownership and capacity, and under what forms of cooperation aid did contribute towards positive outcomes?

Influence on policy

Aid as a pure monetary resource is most effective in countries with well-functioning institutions, the “right” policies, and a governance system ensuring popular participation and accountability, the Assessing Aid study of the World Bank concluded (World Bank 1998). The dilemma for donors is that these countries are generally not the neediest if we see aid as a means of closing the many big gaps between the current level of development indicators and the Millennium Development Goals. This represents the classical need-ability dilemma in development aid. When translating the findings of the Assessing Aid study into concrete recommendations to donors Collier and Gunning (1996) takes the position that a country’s policy performance should be the major factor in decisions on aid disbursement. Aid should not be allocated on the basis of need alone, or of the donor’s own strategic interests, which seems to have been the dominant pattern so far. The highest priority would be given to good performers with the highest rates of poverty. The corollary to this argument is
that a process of policy reform has to be firmly established before large infrastructure investments will make a positive impact on a country’s development.

If this aid and reform argument holds true, the basic question is whether donors just have to wait until national reform processes reaches the required state of maturity, or whether there is anything aid can do to stimulate such processes of reform. The findings of the Assessing Aid study were further corroborated by the study on *Aid and Reform in Africa*: “that the 10 countries in our study all received large amounts of aid, including conditional loans, yet ended up with vastly different policies suggests that aid is not a primary determinant of policy” (Devarajan et al. 2001:2). The study concluded that the key to successful reform is a political movement for change, and that donors cannot do very much to generate this.

Where *Assessing Aid*, based on econometric correlation, concluded fairly categorically that variables under donors’ control had no influence on the success or failure of reform, *Aid and Reform in Africa* brought in a more nuanced picture based on the analysis of concrete national political processes. It did not conclude that policy is entirely independent of aid. There is the negative influence of aid on policy – that large amounts of aid to countries with bad policy tend to sustain those poor policies. But there is evidence of positive impacts as well: “The lessons from the Ghana and Uganda cases [classified as successful reformers according to the study, our comment] are that donors should concentrate on technical assistance and other soft support without large-scale budget or balance of payments support in the phase before governments are serious about reform” (World Bank 1998: 6).

Generally, we can distinguish between three types of strategic approaches by aid agencies for promoting policy reform. There are the two forms indicated above, i.e. creating financial incentives for reform using the volume of the aid as a carrot for accepting donors’ advice, and secondly the stimulation of reform through a mutual learning approach involving sharing of ideas in a more open-ended partnership. The third type is the well-known coercing of reform, by attaching policy conditionality to the grant or loan agreement. There is a growing consensus that wherever reform is required, aid can neither buy it nor force it. Better than carrots and better than sticks are the ideas that aid can contribute to those working for reform, accepting that policies, to be effective, have to grow from national political processes.

• In this project we will study to what extent infrastructure projects have represented this type of *mutual learning* process.

In the heydays of ‘project aid’ several influential studies advocated the need to see
aid projects as policy experiments (Rondinelli 1984) and to replace blue-print planning with iterative, process-oriented planning (Korten 1980). An important issue for this study takes us back to this literature. It is to look at the ability of implementing organisations to learn from experiences and adjust along the way, and how project experiences feed into sector policy reforms, with the donor agencies and aid funded external actors (e.g. contractors and consultants) as constructive partners in transfer of knowledge and knowledge management.

Influence on ownership

The constant search by donor agencies for entry points to leverage change led in the 1990s to the demise of “the aid project” and a corresponding reemphasis on budget support. Budget support in different forms, including import support, had been a dominant aid modality in the early days of ODA, but was gradually overtaken by the so-called ‘projectisation’ of aid. Frustrations over implementation problems and lack of impact, however, led to the realisation that the policy and institutional environment needed a major overhaul for projects to work. This growing consensus was built mainly on the experiences of aid to Africa. Project aid to East Asia was not questioned in a similar way and continued much as before.

Policy-based aid came on the agenda with 'structural adjustment programmes' as the first donor response, but subsequently other governance issues were included. Although it is now generally accepted that imposing policy change through aid conditionality does not work, policy-based aid was not discontinued. A “new aid architecture” was proclaimed culminating in the Paris Declaration on Aid Harmonisation and a stronger push towards budget support. What is new in this architecture is the emphasis on ‘country ownership’. The approach is premised on strong ownership by the recipient government of the development strategy around which donors will align. This alignment by the donors is envisaged as a process of negotiation led by the recipient government.

Still, power asymmetry in the donor-recipient relationship is not easily resolved, and observers argue that the new aid architecture also represents an ownership problem with donor-dominated policy discourses and negotiations. Many of the PRSP-processes fall in this category (Gould 2005). There is a call for donors to take further steps back. This is the issue first and foremost in aid-dependent countries, where national sovereignty in policy making constantly is under pressure from international donors seeking high level policy influence. In less aid-dependent countries this is less of a problem, partly because these countries generally have stronger institutions and partly because donors are conscious of their own marginal position.
The renewed emphasis on infrastructure must be seen in this perspective. It represents a move towards project aid. Whereas the provision of basic social services lend itself to broad sector programmes supported through budget aid and donor basket funding arrangements, this is more difficult with large and expensive infrastructure projects. They will inevitably be planned and funded on a project by project basis. For instance, donors have their strict planning and procurement rules which they are not willing to revoke. What does ownership mean in this context?

· What are the determinants of ownership at project level?

This is far more complex than the simplistic notion of a country owning its national policies. Obviously, a country or even its government is not a monolithic entity representing a unified political will and ways of exercising ownership. There are different interests at stake. Ownership is not only about the relationship between a government and a donor agency; it is also about the influence of different national stakeholders.

· In infrastructure projects we typically find the following actors: the owner, the financier, the technical consultant, the project manager and the contractor.

Division of roles and responsibilities is a critical issue for creativity, efficiency and accountability in project management, with the key actors ideally placed as in Figure 4.3.

In aid projects the donor is typically the financier (or one of them) and government the owner. Contractors and consultants are normally selected through competitive bidding, as is, in some cases, even the project manager. This is considered an ideal model, but in practice it often gets muddled. The reasons are typically two: the donor wants more control, and the recipient insists on being the project manager although it lack both the experience and the organisation to do it well. If the manager lacks experience and organisation efficiency will be reduced even though lines of responsibility may be clear. A well-documented case is the Swedish aid to the Bai Bang paper mill in Vietnam (Jerve et al 1999: 85). Hence, ownership, is not merely about the formal position of the “owner” in Figure 4.3, but the dynamics between the whole set of project actors.
In processes of planned development, however, there are important stakeholders outside project management.

- Infrastructure projects involve *a broader set of stakeholders* than the actors above, responsible for implementation.

In development cooperation one can, in broad terms, distinguish between five types of actors or agencies and their relations (see Figure 4.3, taken from Jerve and Skovsted Hansen 2007). All of these actors have legitimate claims to ownership in the sense of influence exerted on a process of public investment and assumption of responsibility for it. Hence, ownership is shared and negotiated. A growing body of literature emphasises that the link between ownership and effective (i.e. sustainable) infrastructure primarily lies with the role of beneficiaries and the political constituency (cf. Figure 4.4). This is particularly the case if the access by the poor to infrastructure services is to improve (Brook and Smith 2001, World Bank 2004).
One may argue that Japan’s system of ‘request-based’ project identification is in principle the most appropriate way of ensuring ownership of the aid recipient. The recipient government is responsible for presenting a list of priority projects from which Japan can select. In practice, however, it has been observed that the administrative work required to request an aid project often is far beyond the capacities of developing country institutions, and as a result projects have been “injected” by Japanese companies or trade associations working with the Japanese government (Arase 1995:147-163).

Infrastructure projects can be highly controversial because of costs, choice of technology and adverse social and environmental effects. Strong lobby groups and commercial interests are at play. How far is the donor responsible for project controversies and outcomes?

The World Bank came under fire after the Narmada water management project in India, and as a result a new set of environmental and social safeguard guidelines, and new requirements on public consultation were instituted during the 1990s. There are indications that the bar now is being lowered. Is this inevitably a consequence of fostering increased country ownership and respecting national sovereignty? Some major donors, like China, will argue this. How far are donor agencies willing to go to combat corrupt practices in aid projects?

It is likely that much of the debate on ownership is too stylized and abstract. In the complex reality of large infrastructure projects there is never one ideal model on how to share power and influence, and hence ownership. But studies of concrete project experiences will help opening the black box and yield better insights on what kind of dynamics between key stakeholders have produced sustainable outcomes.

Influence on capacity

We know that aid can function as an important channel for new ideas, exchange of experience and the gradual building of competence and capacity in organisations critical for sustainable infrastructure services. And research tells us that what determines the success of these aspects of aid is not the size of budgets. Non-monetary factors play a far more important role in determining the institutional effects of aid, which takes us to the third driver of aid effectiveness – capacity development.

The institutional impact of aid has been less in focus in the aid effectiveness literature. A major argument from the critics of the Asian Miracle study was that the effectiveness of infrastructure investment is intrinsically linked to the role of the
state. Where the state is incapable of performing its developmental role, as argued by Sindzingre (2004), such investments are likely to be subject to rent-seeking and lack of sustainable management. Furthermore, according to Stein (1995) the East Asia experience shows that we have to look beyond the individual project to understand why infrastructure investment played a crucial role in stimulating economic growth. This entails digging deeper than the policy level and the role of the state, to the understanding of institutional incentives that influence key actors in infrastructure projects: designers, builders, operators-maintainers and citizen-consumers.

- In what ways has institutional development been planned in the projects under study? When conducting cost-benefit assessments and rates of return of infrastructure projects, what is included in the calculations? What assumptions are made in respect of the institutional preconditions for execution of projects and long-term management? To what extent are projects perceived as means to alter or strengthen institutional preconditions?

Aid to infrastructure investment, in this perspective, is more than securing cheap financing. It is more than securing cost-effective construction through international competitive bidding. It is about stimulating institutional development that influences sector policy as well as sustainable management.

The most direct way of supporting capacity development has been technical assistance – i.e. the financing of outside (mostly international) expertise and transfer of know-how. Evaluations of technical assistance (TA) have generally concluded that results have been disappointing. “Outcomes have varied widely, but overall efficacy and cost-effectiveness of TA has been disappointing, especially in Sub-Saharan Africa (World Bank 1996:45). The problems with TA are that it has mostly been supply driven, short term rather than long-term, disconnected from overall sector polices, input rather than results focused, dominated by international consulting, and managed through parallel structures.

The term capacity development has replaced ‘capacity building’ in mainstream literature signifying the need to look beyond parameters like size of staff, physical resources, formal procedures and training. These are inputs, while what matters are how institutions perform. Their ability to mobilize, co-ordinate, solve problems and deliver results on the ground. This has led to one of the most recent aid innovations, namely output-based aid or results based aid. These represent modalities for performance-based public subsidies of service delivery, or a way of allocating aid based on monitorable development indicators.
Theories about aid induced capacity development may easily fall into the trap of social engineering, seeking prescriptions and assembling tool boxes for how to best intervene. This differs from less instrumental theories about partnerships. The history of aid partnerships is also full of success stories where the outcome was not planned and was largely determined by unintended consequences of the aid relationship. We are referring to the messiness of ‘learning by doing’ and ‘building self-reliance’. This is a less instrumental way of seeing aid which presents different challenges to a donor. Factors such as time, patience, trust, communication skills, professional adaptability and finding the right partners become important.

In this study we will look at the donor-recipient relationships from this perspective as well. When projects are seen as institutional development processes, the perspective will shift, and so will the design and mode of implementation. Among project cases to be studied we expect to find different trajectories with respect to capacity development. An important research question is how this came about, and specifically whether different approaches taken by the donors involved played an important role for the outcome.

4.5. Research design

Two methodological approaches are central in this project; institutional analysis of project cases and comparative analysis of project cases.

Institutional analysis of project cases

There is a large volume of econometric studies of connections between infrastructure investment and economic development/growth/productivity. While building on such analyses this study takes a different approach focusing in-depth on selected cases of aid funded infrastructure projects. The analysis is mostly qualitative with available secondary sources (project reviews and evaluations, academic studies and media reports) and interviews of a sample of key stakeholders as the main sources of data.

This analysis builds on the metaphor of ‘opening the Black Box’. It attempts to better understand processes and factors that can explain development outcome, which we deliberately have defined in institutional terms – as different from macroeconomic indicators – using the concept ‘sustainability of infrastructure services’ defined as:

Infrastructure services that both meet demands and are financially sustainable and adequately maintained

The case studies attempt to validate two hypotheses:
• Hypothesis 1: Sustainability of infrastructure services depends to a large measure on institutional spillover effects during project implementation fostering institutional and policy reform, human resources development and capacity building.

• Hypothesis 2: Donor policy and aid modalities matter for stimulating such institutional spillover effects

The analysis of the first hypothesis involves addressing the following issues and questions:

- Mapping the institutional mechanisms/organisations involved
  - For carrying out maintenance and operation
  - For financing operation/maintenance/renewal
  - For managing conflicting interests

- Identifying key actors involved in the project
  - At different stages of the project cycle
  - Include policy-makers and citizens-consumers
  - What types of incentives motivates key actors?

- Establishing the chronology of important decisions and events in the project and identifying the role of key actors:
  - Related to the projects cycle: initiation; planning process and design; funding arrangements; construction; operation and maintenance; and auxiliary investments.
  - Related to out of project issues: synergies with other investments in the sector or in other sectors; crowding in of private sector investments; links to policy reform; and lessons from experimentation and piloting brought forward.

- Investigating the effectiveness of the institutional mechanisms in terms of
  - Efficiency: costs not exceeding benefits
  - Equality: sharing of benefits and costs
  - Redistribution: access to services based on ability to pay
  - Accountability: transparency and involvement
  - Adaptability: capacity to learn and change

- Assessing the sustainability of the project
  - Does it yield benefits in access of total costs?
  - Are service operated and assets maintained over time?
Identifying incentives promoting sustainability

- What are the perceptions individuals have on which incentives have had a major contribution towards sustainability of services?
- What factors may explain why these incentive mechanisms were established. Was it an outcome of the initial project design? Was developed through lessons learned in process of implementation? Was it a result of unforeseen or unintended factors?

Investigating effects of any perverse incentives and any means taken to address these:

- Rent seeking
- Favouritism
- Disbursement pressure
- Commercial interests

Investigating possible institutional spillovers

- New technology spread to other projects
- New forms of revenue generation
- Stimulation of local private sector (e.g. construction)
- Sustainable development of institutional capacity
- Skilled people moving elsewhere
- Impacts on donor policy and practice
- Impacts on government policy and regulations

The analysis of the second hypothesis involves an institutional approach to the study of aid influence. This can be done by looking at the following three drivers of aid effectiveness. How did aid influence these drivers? Under what forms of cooperation did aid contribute towards positive outcomes?

- How did the aid relationship in the project influence on policy?
  - Was the project linked to policy conditionality?
  - Was the project conceived as a policy experiment?
  - What kind of learning took place? Did lessons have any impact on policymakers and/or the donor?

- How did the aid relationship in the project influence on ownership?
  - How did donor influence identification, design and planning?
  - Was the project supported by other national stakeholders (outside those directly involved): lobby groups, commercial interests? Did the project have popular legitimacy?
- How are funds controlled?
- How did the aid relationship in the project influence on capacity development?
- What capacity development components were included in the design?
- How was technology and know-how transferred?
- How did the institutional development perspective influence time-perspectives, financing and contracting modalities and strategies for phasing out aid?

Comparative analysis of cases

The comparative approach involves three levels: Firstly, there is the comparison between East Asia and Sub-Saharan Africa, secondly, a comparison at country level between projects in two sectors, and thirdly, a comparison at sector level between a main project case and what is called “reference cases”.

In East Asia we have selected countries that in historical periods have been major recipients of infrastructure aid. This is primarily aid from Japan, reflecting Japan’s position as the largest donor to the region and its priority to infrastructure. The countries included are Thailand, Indonesia, Philippines and Vietnam. In Sub-Saharan Africa Japan’s role has been less prominent, but the selection of countries has been guided by the wish to include Japanese financed projects in the sample. The countries included are Kenya, Tanzania, Ghana and Senegal. The country studies will include a brief presentation of national macro level data on infrastructure and economic development, and the comparative analysis at this level will be done in a synthesis paper drawing on all country cases.

Project cases have been selected among the following four economic infrastructure sectors: transport (roads, ports); energy/power; urban water and sewerage; and telecommunications. We have excluded social infrastructure for the main reason that these projects normally represent simple constructions in large numbers in numerous sites. Such projects will be difficult to study with the suggested institutional approach. Two sectors are selected in each country, trying to secure representation of all four sectors in the total sample. A brief presentation of sector level data will be included in the country studies presenting the selected project in relation to other main projects in the sector, the level of domestic versus aid financing in sector investments, and the level of public versus private funding.

With the resource available for this study the number of cases has been limited to one per sector. The following criteria have been used for identifying the project cases. We have selected projects considered by the government and the donor as reasonably
successful. This refers to the sustainability definition above. We did not want to look at “white elephants” or projects where provision of services stopped not long after commissioning of the project. The projects should have been completed minimum 5 years back to allow for “a test of sustainability” over time. The aid involvement must have been substantial, and this includes not only financing but also involvement in the process of planning and implementation. The projects are financed by Japan or other major donors – mainly the development banks (World Bank, ADB, AfDB).

With this sample it will not be possible to study comparative/contrasting cases, but the researchers will on the basis of secondary literature about the sectors and the aid involvement assess whether the case project stands out as atypical or not. A comparison with well-known examples of non-sustainable and unsuccessful projects is particularly relevant.

Outline of country study reports

Based on the research questions elaborated above centred around two main hypotheses and the research design following from that, the country studies will be developed using a common outline to facilitate comparison. The reports will be in the range of 50-60 pages (excluding annexes).
1. **Background** (15 %)

Selection of project cases

Main research questions

Description of methodology

2. **Project case A** (35 %)

   a) Assessment of sustainability of services created by project

      Identification of important institutional spillovers (or lack of)

      → select 1 or 2 for analytical focus

      Factors explaining such institutional impacts

   b) Assessment of the influence of donor policy and practice on such impacts

      → possibly related to policy development, ownership and capacity development

Include comparison with reference case(s)

3. **Project case B** (35 %)

   a) Assessment of sustainability of services created by project

      Identification of important institutional spillovers (or lack of)

      → select 1 or 2 for analytical focus

      Factors explaining such institutional impacts

   b) Assessment of the influence of donor policy and practice on such impacts

      → possibly related to policy development, ownership and capacity development

Include comparison with reference case(s)

4. **Findings and recommendations** (15 %)

Relate these to current policy debates:

→ on how to enhance development effectiveness of infrastructure investments

→ on what is the appropriate role of donors and added value of financing infrastructure through aid
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