



JBIC

**JAPAN
BANK FOR
INTERNATIONAL
COOPERATION**

JBICI Research Paper No. 36-4

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

Synthesis Paper

July 2008

**JBIC Institute
Japan Bank for International Cooperation**



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Foreword

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

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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

Date	Tasks and Events
2006	
September 20	Brainstorming Session in Tokyo
December 17 & 18	1 st Preparatory Meeting in London
2007	
January 19	2 nd Preparatory Meeting in Tokyo
February	Official launch of the research
March – May	1 st Fieldwork: Country Case Studies
June 1 & 2	Mid-term Workshop in Nairobi
June – Oct.	2 nd Fieldwork: Country Case Studies
December 15-17	Final Project Workshop in Tokyo
2008	
March 1	Submission of Papers: Framework, Thematic and Country Case Studies
May 15	Submission of Synthesis Paper
May	Dissemination at the Tokyo International Conference on African Development (TICAD) V
July	Publication as JBICI Research Paper No. 36

List of the Target Projects for Country Case Studies

Research Paper No. 36-2

Indonesia		
M1	Brantas River Basin Development Project	JBIC, JICA
R1	Citarum River Basin Development Project	World Bank (WB), Asian Development Bank (ADB), Gov. of France, Dutch etc.
M2	Jakarta Water Supply Development	JBIC
Philippines		
M1	Batangas Port development	JBIC
R1	Pasig River Rehabilitation Project	ADB
M2	Circumferential Road No.3 Construction Project	JBIC
R2	Metro Manila Radial Road No. 10	JBIC
Thailand		
M1	Eastern Seaboard Development Plan	JBIC, WB
R1	Private sector investment in infrastructure in the 1990s	N.A.
M2	Small Scale Irrigation Program	JBIC
R2	New Village Development Program	JBIC
Vietnam		
M1	National Highway No.5 Improvement Project	JBIC
R1	National Highway No.10 Improvement Project	JBIC
M2	Rural Infrastructure Sector Project	ADB, Agence Française de Développement

Research Paper No. 36-3

Ghana		
M1	Anwiankwanta-Yamoransa Road Rehabilitation Project	JBIC
M2	National Electrification Project	WB
R2	Self Help Electrification Project	Gov. of Ghana, JICA
Kenya		
M1	Bura Irrigation and Settlement Scheme	WB, European Development Bank etc.
R1	Tana River Delta Irrigation Project	JBIC
M2	Nairobi Water Supply Project	JBIC, WB, African Development Bank (AfDB), European Investment Bank
R2	Nyeri Town Water Supply System	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Kreditanstalt für Wiederaufbau (KfW)
Senegal		
M1	Regional Hydropower Development	WB
M2	Debi Irrigation Project	JICA
R2	Ndombo-Thiago / Thiagar Irrigation Project	French Cooperation, WB
Tanzania		
M1	Tanzania Zambia Railway Authority	China
M2	Lower Moshi Agricultural Development Project	JBIC
R2	Kapunga Rice Irrigation Project	AfDB

M: Main Project R: Reference Project

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

Synthesis Paper

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Table of CONTENTS

1. INTRODUCTION	1
1.1 Why this study?	1
1.2 Background debates	3
1.3 Research design	5
2. THE PROJECT CASES: A SUSTAINABILITY ASSESSMENT	9
2.1 Ghana	9
2.2 Kenya	10
2.3 Senegal	12
2.4 Tanzania	13
2.5 Indonesia	15
2.6 Philippines	17
2.7 Thailand	18
2.8 Vietnam	19
3. SUSTAINABILITY OF INFRASTRUCTURE SERVICES: EVIDENCE OF INSTITUTIONAL SPILLOVER EFFECTS	21
3.1 Institutional spillover effects contributing towards sustainability of infrastructure services established	21
3.2 Institutional spillovers with sector wide impacts	28
4. THE ROLE OF DONORS BEYOND FINANCE	32
5. CONCLUSIONS	36
5.1 On the effectiveness of aid to infrastructure	36
5.2 On the difference between East Asia and Sub-Saharan Africa	37
5.3 On the role of the recipient in development partnerships	39
5.4 On the role of donors in development partnerships	39
ANNEX	42
Project reports	42
REFERENCES	43

List of Figure and Table

Figure

Figure 1: Aid effectiveness and the 'black box'.....	2
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Table

Table 1 : Project cases studied.....	8
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Acronyms and Abbreviations

BISS	Bura Irrigation and Settlement Scheme
CDD	Community Development Department
DOH	Department of Highway
EA	East Asia
ECG	Electricity Company of Ghana
GHA	Ghana Highway Authority
NEP	National Electrification Project
NH5	National Highway No. 5
ODA	Official Development Assistance
PMU	Project Implementation Units
PURC	Public Utility Regulatory Commission
RID	Royal Irrigation Department
the A-Y road	the Anwiankwanta-Yamoransa road
SAED	Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal
SHEP	Self-Help Electrification Project
SSA	Sub-Saharan Afric
VRA	Volta River Authority

1. INTRODUCTION

1.1 Why this study?

The development performance during the last fifty years of the East Asia (EA) and the Sub-Saharan Africa (SSA) regions differs dramatically. At the same time Official Development Assistance (ODA) played a major role in both regions and its results apparently show similar contrasts. What can these differences tell us about aid effectiveness? What forms of aid have been effective under what national circumstances? Such simple questions inspired the research project from which this synthesis paper is developed. We acknowledge that the relationship between aid and economic development and poverty reduction is not one of a simple linear causality. Aid is part of complex political and economic processes, sometimes representing a driving force of a development process – positive or negative – while in most circumstances subordinated to other more influential forces. Nevertheless, as we argue in this paper, it matters to aid effectiveness how aid is provided. In this perspective, what can we learn from the EA-SSA contrast?

It was decided to compare major aid-supported infrastructure investments in four countries in each of the two regions.¹ Project aid has been the dominant aid modality in East Asia, not least through Japanese aid, and infrastructure financing has constituted from 50% to 80% of total ODA since the early 1980s. Both project aid and infrastructure financing saw a downward trend in Sub-Saharan Africa with the advent of policy-based programme aid and sector-wide approaches not least with an emphasis on social sectors. However, recently there has been a call for a renewed focus on economic infrastructure development in Africa.²

This study goes beyond the question of 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. It is argued that aid projects – as any development project – are part of ongoing processes of policy experimentation and development and building of institutional capacity. Donors cannot assume the responsibility for such processes, nor can they control the outcome. But the way the aid input is conceived and is managed, we would argue, may substantially influence the prospects of sustainability.

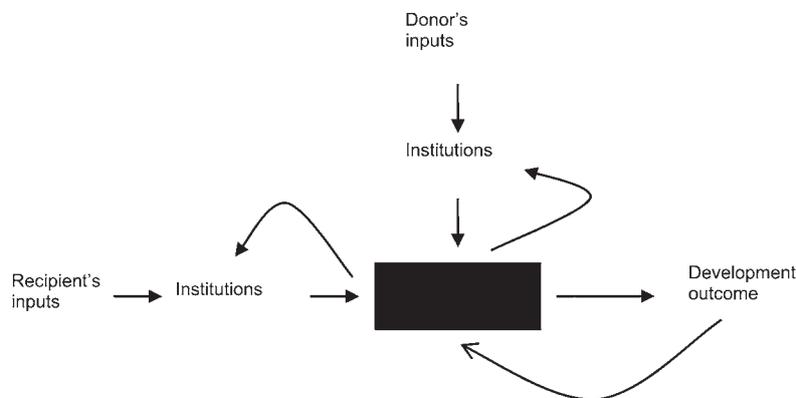
¹ Infrastructure is defined in this study to include transport, water and sanitation, power, telecommunications and irrigation.

² See Jerve and Nissanke 2008 for a more elaborate presentation of ODA trends in the two regions.

Infrastructure projects provides an excellent opportunity for better understanding the effectiveness of aid for institutional development, since they typically invoke many of the classical aid concerns, such as country ownership, 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 was secured (or why it was not), and (2) how recipient and donor institutions interacted to promote national and local institutional processes? In short, how can donors most effectively be partners to national governments and agencies to develop sustainable infrastructure services?

Since the mid 1990s, in response to the reluctant recognition on the part of the donor community of the difficulties in inducing an accelerated economic growth path with policy-based programme aid, we have seen the resurgence of theoretical and empirical studies on the question of how to increase aid effectiveness towards economic development. Yet, the conventional mainstream economic literature and the recent policy debate on aid effectiveness have been largely conducted on the basis of numerous cross-country regression analyses of the macro-economic relationships between development aid as inputs and economic growth or poverty reduction as output/outcome. There are very few recent studies which bring a real insight to how aid works on the ground by looking into the complex causality chain linking external aid to final outcomes (Bourguignon and Sundberg 2006, and Jerve, Shimomura and Skovsted Hansen 2008). In standard cross-country regression analyses, the critical institutional transformation as result of donor-recipient interactions are simply treated as the ‘black box’ and various feedback loops are poorly understood (see Figure 1).

Figure 1: Aid effectiveness and the ‘black box’³



³ From Jerve, Shimomura and Skovsted Hansen 2008 (p.11)

The study is an attempt to look into the black box of major infrastructure projects, and in this way it seeks 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 SSA region. Let us begin by recapturing some of the main features of related debates in the development literature.

1.2 Background debates

This study is closely related to the on going discussions on four central issues and policy debates found in the academic literature and development policy circles in this and related research fields (see Jerve and Nissanke 2008 for detailed discussions on these debates).

The *first* of these issues debated is a question over what explains the dramatic differences in development experiences and economic performances between the East Asia and Sub-Saharan Africa regions. 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 and macroeconomic management. As we noted in Jerve and Nissanke (2008), however, these explanations are grossly unsatisfactory and inadequate in providing a deeper understanding into the causes for the divergences.

For example, the most publicized study on the growth episode of eight countries in East Asia, the East Asian Miracle study (World Bank 1993) failed to understand the macro-micro interface between fundamentals and selective interventions; policies and institutional contexts; and internal domestic conditions and external environments. Many studies also made an equally one-sided interpretation of the Asian crisis of 1997-8. Hence, we called for a deeper comparative institutional analysis of government-private sector relationships, incentive structures, organisational capacity development and information flows among different economic agents (Nissanke and Aryeetey 2003). For example, the development in EA (or the inadequacy in SSA) of productive interface between the state and private agents explains several important differences in the developmental outcomes, including both the rate and pattern of economic growth between the two regions.

The *second* area of debate is the question over how to explain Africa's 'growth tragedy' and how the debate has been shifting over the time, leading to the recent call for substantial increases in infrastructure investment. On the onset of the debt crisis in SSA and the heated debate on the Structural Adjustment Programmes in

the 1980s, the dominant *diagnose* blamed the dirigiste economic policies and the failure of the African states. In the 1990s, the continued “slowness” of expected supply responses of private agents to new liberalized and deregulated policy environments extended the list of culprits to an array of variables such as natural endowments, the quality of institutions and governance. Today, the list has been further extended to include fragmentation of state sovereignty, ethno-linguistic fractionalization and more generally geographical disadvantages.

Since the disadvantages in natural endowments and geographical locations can be overcome only by concerted efforts in *infrastructure* development, poor infrastructure is now regarded as a key contributing factor to less competitive firms through the high cost of doing business. It is also seen as a critical impediment to poverty reduction by escalating the cost of delivery of public services to the poor.

We observe that the development agenda for Africa largely has been set by the donor community, reflecting shifting paradigms: from the *capital shortage* diagnosis in the 1960s and 1970s, to the *policy failures* diagnosis in the 1980s, the *institutional failures* diagnosis in the 1990s, and finally, *the infrastructure failure* in the 2000s. As the policy debate among the donor communities sets priorities for aid allocation and government budget allocation, there was a sharp reduction in the share of resources to economic infrastructures by African governments and the donor community until recently. Africa now faces enormous infrastructure deficiencies.

This belated realisation by the donor community also coincides with the emergence of an empirical literature that examines the contribution of infrastructure to economic growth and poverty reduction, which is the *third* area of the development policy debate related to our research project. While divesture and privatization of public utilities were pushed as a solution to infrastructure deficits in the 1990s, such policy experiments based on the optimistic expectation on the part of the donor community ended in a failure in many developing countries, in particular in Sub-Saharan Africa. Given the higher social returns than private return to infrastructure investment as well as high risks involved in large projects with long-gestation periods, the public sector remains the largest contributor to the financing of infrastructure in SSA.

With the high aid dependence of government expenditures, therefore, official aid remains an important source for infrastructure development in SSA. In this respect, it should be noted that SSA faces infrastructure deficiencies not only in the investment gap, but critically in the policy and organizational capacity for operating and maintaining services. Hence, aid to infrastructure should entail not only mobilization of financial resources but also transfer of intangible assets such

as knowledge, technology and management in enhancing the institutional capacity across infrastructure sectors for managing and providing reliable quality services on the ground.

Then, a critical issue arises as to how to increase effectiveness of aid for infrastructure development. This would lead us to the *fourth* area of the debate relevant to our research project: the aid effectiveness debate. The aid effectiveness debate among academics and policy makers has been dominated in the recent decade by donors' perspective of viewing aid as leverage for donor-inspired policy and institutional reforms, where *ex-ante* or *ex-post* policy conditionality prevails and 'marketing' institutional models deemed appropriate by donors becomes a dominant feature of aid relationships. We call for reconstituting the aid effectiveness debate. For this, we take a distinctively institutional approach wherein aid effectiveness is assessed in its role in stimulating long-term processes of policy and institutional development in recipient countries.

1.3 Research design

Comparative study of aid financed projects

This study combines a comparative design with in-depth case studies of institutional development processes linked to major infrastructure investments. As outlined above, the comparative dimension emanates from the question so often raised in the development literature: why have East Asian countries generally performed much better than Sub-Saharan African countries, while the case study approach seeks to address the related question: why has aid been more effective in stimulating East Asian development?

Hence, by studying project aid to infrastructure development in the East Asia and Sub-Saharan Africa regions, the research project is an attempt to open the 'black box' to gain a deeper insight how aid could contribute to the process of economic development by inducing institutional transformation. In our view, 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 to induce institutional changes and transformation necessary to sustain and accelerate the process of socio-economic development.

In-depth case studies of aid financed infrastructure projects in four Asian (Indonesia, Philippines, Thailand and Vietnam) and four African countries (Ghana, Kenya,

Senegal and Tanzania) have been undertaken. In each country, two main project cases, from two different sectors, have been selected by each country study team.⁴ Efforts have been made to include different types of infrastructure in the overall sample – from large network based to smaller community based infrastructure. The main idea has been to study cases that would provide interesting lessons with respect to challenges of ensuring sustainability of the infrastructure installed, with examples from different sectors. To be in the position to assess sustainability, an important selection criterion has been to look at older project – i.e. completed minimum 5 years ago. In some of the studies the analysis has been complemented by briefly comparing with a similar project in the same sector.⁵ There has been no attempt however to systematically compare across sectors.

Finally, there is a comparative dimension on the donor side, seeking to compare Japanese funded projects with projects funded by multilateral development banks or Western donors. The total sample contains 11 cases where Japan is the main donor and 5 others. This bias stems partly from the fact that Japan has been by far the largest donor to East Asia, and partly a deliberate wish to compare Japan's aid experience in the two regions. The project cases are presented in Table 1.

An institutional perspective

It is an underlying assumption in this research project that successful development depends on long-term processes of institutional development. Similarly, the effectiveness of aid as a contribution to national development processes hinges on its ability to build on and stimulate such processes. It is our hypothesis that infrastructure investments show this linkage quite clearly. The failure to sustain infrastructure services through appropriate institutions for operations and maintenance has been a too common feature in many developing countries, not least in Africa. What lessons can be drawn from more successful cases? And what are the lessons for development partners?

In answering these questions, this paper builds on the 8 country reports (and one thematic paper) and identifies a number of institutional effects created during the lifetime of the projects. Some are intentional, while others are unintended. Some have directly contributed to sustainable delivery of the services created through the

⁴ See Annex for the full bibliographic references of all JBICI Research papers produced for this study.

⁵ In addition, one thematic paper was produced comparing highway sector development in Thailand and Ghana (see Nishina 2008 listed as one of the project reports in Annex).

projects, while others have had wider impacts on sector and national policies and institutions. The following hypothesis was formulated for the study:

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

The current development debate tends to be dominated by a static and instrumental view of development processes: development aid becomes effective when the ‘right’ policies and institutions are in place. This presupposes that one by and large knows what is ‘right’, and can condition aid transfer on the existence or adoption of such ‘right’ factors. There is today less recognition of the alternative view, predominant in the development discourse some twenty years ago, that development is an iterative process where positive – ‘right’ – outcomes is the result of the gradual and often unpredictable development of local institutions. With this perspective development management becomes more process oriented, rather than output oriented. Donors are important actors in such processes, but what kind of influence do they have? How can donors best be partners in such processes? Hence, the following hypothesis was formulated:

Donor policy and aid modalities matter for stimulating such institutional spillover effects

The core analytical parts of this paper are organized with reference to the two hypotheses, but we shall introduce the reader first to the country case studies. For each of the countries the role of ODA is briefly assessed, and this is followed by a project summary emphasizing the current status of the infrastructure created.⁶

⁶ Where the information on particular projects is drawn from other sources than the country reports these sources are referenced. Data on ODA flows are based on World Bank (2006) *World Development Indicators and OECD-DAC Data base* in addition to the country reports.

Table 1: Project cases studied

	Sector	Project name	Funding agency
GHANA			
A	Transport	Anwiankwanta-Yamoransa Road Rehabilitation Project	JBIC
B	Energy	National Electrification Project	WB and other bilateral donors
KENYA			
A	Irrigation	Bura Irrigation and Settlement Scheme	WB
B	Urban water supply	Nairobi Water Supply Project	JBIC, WB, AfDB, EIB
SENEGAL			
A	Energy	Regional Hydropower Development Project	WB and other bilateral donors
B	Irrigation	Debi Irrigation Project	Japan
TANZANIA			
A	Transport	TAZARA railway	China
B	Irrigation	Lower Moshi Agricultural Development Project	JBIC
INDONESIA			
A	Irrigation	Brantas River Basin Development Project	JBIC, JICA
B	Urban water supply	Jakarta Water Supply System Development Project	JBIC
PHILIPPINES			
A	Port	Batangas Port Development Project	JBIC
B	Transport	Circumferential Road No. 3 Construction Project	JBIC
THAILAND			
A	Port	Eastern Seaboard Development Plan	JBIC, WB
B	Irrigation (small-scale)	Small Scale Irrigation Program	JBIC
VIETNAM			
A	Transport	National Highway No. 5 Improvement Project	JBIC
B	Rural infrastructure	Rural Infrastructure Sector Project	ADB, AFD

2. THE PROJECT CASES: A SUSTAINABILITY ASSESSMENT

2.1 Ghana

Ghana's GNI per capita was US\$ 300 in 1975, which had increased only to US\$ 450 by 2005. During the period of 1975-2002, it received a total of US\$ 12 billion in official aid. Average annual aid share in GNI (ODA-GNI ratio) for 1993-2002 was 10%, while average ODA per capita for 1993-2002 was US\$ 34. Over the recent years, ODA per capita has increased to US\$ 50 (2005). In the early 2000, aid accounted for about 45% of government expenditure, 19% of imports, and about 45% of gross capital formation.

Ghana's poor state of infrastructure, in particular in rural areas, is detrimental to agricultural production, trade, development and poverty reduction. With only 20% of Ghana's roads paved, road transport which forms the major means of distributing agricultural products for internal and international trade remains a serious bottleneck. In the early 1990s, only 20% of the total population and 8% of the rural population had access to electricity supply. Hence, the Ghana case study selected two infrastructure projects: one in the road sector, the Anwiankwanta-Yamoransa road (the A-Y road) rehabilitation project, financed by OECF/JBIC, and the other in the energy sector, the National Electrification Project (NEP) financed by the World Bank together with bilateral aid agencies, including the Netherlands, Denmark and Sweden.

A The Anwiankwanta-Yamoransa Road Rehabilitation Project

The Anwiankwanta-Yamoransa road (175 km long), located within the Central and Ashanti regions of Ghana, is important for transport of export commodities such as cocoa, gold and timber from the central Ashanti and the Western Region to Takoradi Port. Given the very poor state of the road, Government of Ghana approached the Japanese aid agencies for credit facility to reconstruct the road. The project agreement was signed on September 1987, and the road was constructed in 1991-1994 with OECF financing and the Ghana Highway Authority (GHA) as a main implementing agency. The implementation of the project has resulted in the rise in traffic volumes, exceeding the projected volume by more than a 100%, as well as the emergence of satellite markets along the route, providing livelihood for people. However, parts of the pavement surface started to show signs of wear and tear even before the construction works were completed. This has led to a number of regulatory and administrative reforms in the road sector.

B National Electrification Project

The project was approved in 1993 and ended in 2000 with a total project cost of US\$ 138 million with the aim of: (i) enabling, under a 30-year electrification master plan (1990-2020), the Volta River Authority/Electricity Company of Ghana (VRA/ECG) to provide electricity from the national power grid to small urban centers and rural areas; and (ii) rationalizing and strengthening the ECG. The number of towns/villages connected to the national grid increased from 480 in 1989 to 3000 in 2005, with the National Electrification Project accomplishing the electrification of 16 District Capitals and 127 rural communities. This effort has raised several critical issues on how to achieve the financial and organizational sustainability of infrastructure service delivery to the poor.

2.2 Kenya

Kenya experienced a dramatic build-up in aid flows during the 1970s and 1980s, with a slackening of donor support in the 1990s. Net receipts of ODA stood at 4% of GDP in 2005, which is a decline from 14% in 1990. Japan emerged as the largest bilateral donor in this period. At its peak ODA contributed 80% of public development expenditures and a major share went to large scale infrastructure investments. The irrigation sector witnessed several high profile projects that subsequently failed, especially along the Tana River. One of them – the Bura Irrigation and Settlement Scheme – has been selected for this study. The other main project case is the urban water supply sector which is up against a constant battle to achieve sustainable financing and expand coverage.

A Bura Irrigation and Settlement Scheme

The main objective of Bura Irrigation and Settlement Scheme (BISS), financed mainly by the World Bank, was to alleviate landlessness in overpopulated agricultural areas of the country, provide employment, and increase the output of cotton for export. The project failed to meet all its objectives. The project's settlement component has been described as the most expensive scheme in the world, and the project suffered from conceptual and economic problems. The project was estimated to reach 65,000 people, but many who came to the area have left and the remaining population today lives in abject poverty. Acute water shortage due to non-functioning of the pumping scheme put in place has resulted in farmers not having planted a cash crop for more than 15 years. The responsible authority for the scheme has changed some 6-7 times, which have further contributed to the problem of sustainability. Currently there are plans to revive the scheme, with support from Kuwait, but conflicts over land rights (involving the indigenous Pokomo tribe) and biodiversity concerns still linger. The project has provided costly lessons with respect to settlement approaches as well as irrigation management.

<http://www.water.go.ke/statusrep1.html>

http://www.nib.or.ke/index2.php?option=com_content&do_pdf=1&id=32

http://www.multinationalmonitor.org/hyper/issues/1994/08/mm0894_08.html

B Nairobi Water Supply Project

The main objective of the NWSP was to expand the water supply from 194,000m³ per day at the time of appraisal (1989), to 492,000m³ per day as of 2002, in order to meet the growing demand for water in Nairobi. The total scope of the project consisted of eight components (construction of transmission lines, a dam, a water intake system, a water treatment system, a water distribution system and a sewerage water treatment system, plus consultant services and technical assistance). A Japanese ODA loan financed the construction of transmission pipelines. The project did achieve the goal of alleviating water shortages and improving sanitary standards, but the sustainability of the project would depend on whether adequate revenues can be raised and illegal water collection curbed. With the new Water Act (2002) the Nairobi water supply was set up as an independent company. The water company is collecting about 60% of potential revenue compared to 30% when it started. However, no major investments to increase water supply have been undertaken since 1994, and only about 40% of households in Nairobi has legal water connections (2005 survey).

<http://www.allbusiness.com/specialty-businesses/minority-owned-businesses/3899441-1.html>

2.3 Senegal

Aid is a major source of funding for development policies, and average annual aid share in GNI for 1993-2002 was 12% while average ODA per capita for 1993-2002 was US\$ 58. About 60 bilateral and multilateral aid agencies as well as 400 NGOs are operating in Senegal with 750 projects concurrently underway. Bilateral aid makes up 56% of total flows against 45% for multilateral aid, with 4-5 donors providing more than the half of total flows (France, Germany, World Bank, Japan, and the African Development Fund). The Senegal case study selected two infrastructure projects: one in hydropower development and the other in irrigation. Limited electricity supply is considered one of the most serious constraints to Senegal's economic development. Further, given that 70% of the total labour force engaged in agriculture, which is heavily dependant on rainfall, irrigated agriculture is particularly encouraged to increase domestic food supply and to foster exports.

A Regional Hydropower Development Project

This is a hydropower project involving cross-border cooperation among the three governments of Senegal, Mali and Mauritania, financed by the World Bank and other bilateral donor agencies. The dam itself was built in 1982-88, but the project, starting in 1997, was to build a power system to distribute power to capital cities in three countries. Its inter-governmental executing agency, SOGEM, is now based in Bamako, Mali. The tender for project management was awarded to ESKOM, a South African public company. Though the project managed to accomplish the original aim to supply electricity to urban cities at a much reduced cost with use of updated technology, it raised many management issues resulting in strong pressures from the donors to privatise national electricity companies. However, the privatization attempts were largely unsuccessful, requiring these governments to purchase back. On the other hand, donors have been instrumental in addressing the environmental and health issues associated with the project and providing technical assistance in setting up a hydrology risk fund and a tariff agreement.

B Debi Irrigation Project

The DIP is located on the left bank of the Senegal River, covering an area of 500 square km in the middle of the delta enjoying a stable supply of water. Two villages are involved with a total population of 1622 inhabitants. DIP was entirely funded by the Japan Ministry of Foreign Affairs (with JICA responsible for feasibility study and supervision) with the aim to increase food self sufficiency and productivity by introducing double harvesting in the year. The DIP involved building a warehouse, providing tractors and trucks, and rehabilitation of the road linking the two villages. Technical assistance has been given to the Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal (SAED) in managing the irrigation facilities of the region. The project has been very successful in terms of delivering socio-economic impacts. Its success derives from its organisational structure which has fostered firm commitment and participation of local peasant organisations in collaboration with SAED.

2.4 Tanzania

ODA flows to Tanzania show a general upward trend from 1970 until today, but ODA fell during first half of the 1990s for then to pick up following a renewed

confidence among donors in line with the “new aid architecture” based on a national poverty reduction strategy and new mechanisms for aid harmonization. Currently, aid finances about 40% of public expenditure, and as much as 80% of the development budget, of which infrastructure investments assume a growing share. The problems of sustainable delivery of infrastructure services is still acute, and the Tanzania case study attempts to identify lessons from earlier projects in the transport and agriculture sectors. Two rather disparate cases have been selected. Both projects have generated substantial economic impacts, but still struggle with achieving sustainable operations and maintenance: Tanzania’s single biggest infrastructure project – the famous TAZARA railway, and a paddy irrigation project in the Kilimanjaro region.

A TAZARA railway

This railway connecting Dar es Salaam to the Zambian network (at Kapiri Mposhi) was completed in 1975. It was implemented as a turn-key operation by the Chinese, financed by an interest-free loan from the People’s Republic of China. The TAZARA is today owned by the governments of Tanzania and Zambia on a 50:50 basis. From 1995, TAZARA was to be run on commercial principles but it failed to sustain the level of service. Traffic was reduced by half from 1990 to 2003, and the Authority is today in a financial crisis. Currently, a process is under way to involve private sector participation, with Chinese getting preference. Despite its poor economic performance, the railway has spurred significant economic development in the Southern Highlands of Tanzania.

http://railwaysafrica.com/index.php?option=com_content&task=view&id=280&Itemid=35

B Lower Moshi Agriculture Development Project

The project was implemented from 1984 to 1987 with financing from OECF/ JBIC, but Japan started supporting small scale irrigation already from the 1970s (Ampiah 1996). Total irrigated area increased more than five times from 1973 to 2000, but cultivated area has actually declined in recent years due to water shortage. According to evaluations in 1992 and 2001, the planning target of 2300 ha irrigated land was reached, but in 2001 only 880 ha were cultivated. Total Japanese assistance amounts to US\$ 633 million plus grant and technical assistance from JICA. The impacts on farmers' incomes have been remarkable which has spurred migration to the area and farmers outside the scheme have also adopted the technology.

Management of the scheme has met with several challenges after JICA and government in 1993 ceased direct operational support. There is currently a conflict between the Union of irrigation farmers (Chawampu) and local authorities over the control of assets. Adequate control of water distribution and prevention of water theft is a recurrent problem, as well as the enforcement of payment of water fees. This mirrors longstanding disputes in the area over land-rights from the time of the villagization program – Ujamaa – and critiques argue that the project contributed to creating both winners and losers: *“Designed beyond the capacity of available water sources, the project dispossessed some, and provided opportunities for corrupt accumulation by others.”* (Homewood 2006, p. 127).

http://www.lucideastafrica.org/publications/Mbonile_LUCID_WP25.pdf

http://www.jbic.go.jp/english/oec/post/2002/pdf/Part2_1-3.pdf

http://www.jica.go.jp/english/evaluation/report/pdf/2001_0416.pdf

2.5 Indonesia

For Indonesia, ODA as percentage of GDP is today less than one percent, but in per capita terms Indonesia receives more aid than average for the region – US\$ 11 compared to US\$ 5 (2005). ODA has been a major source of financing infrastructure, not least through Japanese loans. Japan is the biggest bilateral donor to Indonesia and in 2000 Japan provided half of all ODA to the country, of which about 75% was Yen-loans. The Indonesia case study focuses on two major projects both having received long-term Japanese aid – Brantas river basin development (supported from 1959 to 2000) and Jakarta water supply (supported from 1963 to 1997). Both cases

represent numerous infrastructure investments guided by a succession of long-term master plans. From a sustainability perspective, the two cases represent different scenarios.

A Brantas River Basin Development Project

The Brantas river basin contains most of East Java's water reservoir capacity and produces about ten per cent of the nation's rice crop. Since 1960, cropping intensity has risen from 0.8 to 2.2 (2000 figure) and cultivated land has expanded by about 50%. Hydropower production stands at 240 MW per year (2002) compared to 4.5 MW in 1972, and the river provides domestic water to 15 million people or 42% of East Java's population. There has been a 50% population growth over the last 30 years which reflect migration to the area caused by major economic, urban and industrial growth in the Surabaya area – Indonesia's second largest city, situated at the Brantas delta.

Brantas is described as the best managed river basin in Indonesia, and has been used as a model nationally as well as internationally. The basin has been developed under the concept of "one river - one plan - one management", with Japanese organizations as key partners. The basin is managed by a public corporation – Perum Jasa Tirta I, founded in 1990 – that has implemented a reasonably good system of water allocation and management. Major infrastructure is kept in fairly good condition based on revenue collection from water users, which has gradually improved and is currently reaching 80% of expenditures.

<http://www.adb.org/Water/NARBO/2004/Training-Program/country-report-INO-Brantas-River-Basin.pdf>

B Jakarta Water Supply System Development Project

The case of Jakarta water supply, similarly, represents several long-lasting and sector-wide projects made possible through long-term commitments by the Government of Indonesia as well as Japan as the main donor. The population served increased from 1.2 million in 1970 to 4.6 million in 1997. Still, a 1994 survey showed that only 43% of households in Jakarta had access to clean/piped water. In 1997, the Government under pressure from the International Finance Institutions decided to privatize Jakarta's water supply to two foreign enterprises – Suez-Lyonnaisse and Thames Water. Compounded by the Asian Crisis in 1998 and the downfall of the Suharto regime, this subsequently stirred major popular protests and criticism is today leveled against these companies for not having been able to meet commitments made on expansion of water coverage, despite major increases in water tariffs. Currently, 60% of the city's population has access to clean water.

<http://www.geocities.com/RainForest/vines/4301/water04.html>

<http://www.adb.org/Documents/RRPs/INO/41913-INO-RRP.pdf>

2.6 Philippines

A total of US\$10 billion of ODA has been disbursed in net terms between 1960 and 2002. It is the third largest recipient, following China and Indonesia, of Japanese ODA. ODA has been a significant source for financing development projects since 1960. Project loans made up 85% in the ODA loan portfolio in 2006, and 57% of ODA went to the infrastructure sector (71 loans). The transportation sub-sector obtained the biggest share with 45 loans. The average ODA-GNI ratio for 1993-2002 was just above 1 percent, while average ODA per capita was US\$11 for the same period.

A Batangas Port Development Project

The project aimed at developing the port facility at Batangas, 110 km south of Metro Manila, to complement the Manila port as a major international port as well as to improve the transportation between the Luzon Island and the Mindoro Island, and to develop the regional economy in the hinterland. The loan agreement for the project was signed between the Government and JBIC in 1991. Construction started in 1995 and was completed in 1999. The port development met strong opposition from local residents because of the resettlement involved in the project. JBIC played a key role in achieving a resolution of the dispute between the local residents and the executing port authority (PPA).

B Circumferential Road No. 3 Construction Project

The project, supported by JBIC, aimed at mitigating heavy traffic congestion and transport problems in Metro Manila. With JICA completing the feasibility study in 1977-8, the construction commenced in 1988 and was completed in 1995. Its implementation led to changes in rules in the tendering/bidding system, with the local JBIC office making, through indirect intervention, a significant contribution to a successful conflict resolution among local stakeholders and the government executing agency.

2.7 Thailand

Having successfully achieved a middle-income status, the average ODA-GNI ratio for the period of 1993-2002 was very low at 0.5 %, while aid per capita for the same period was US\$ 11. For the period of 1958-1988 under the Sarit and Prem administrations, the Thai government used ODA strategically for achieving its home grown “dual track” development strategy emphasizing social stability and export promotion. The country study, hence, selected two infrastructure projects carried out in response to these two development objectives.

A Eastern Seaboard Development Plan

This was a project of a grand scale to build a set of industrial complexes connected to deep sea ports in Laem Chabang and Map Ta Pud southeast of Bangkok, as well as various utilities earmarked under the national development master plan. Due to its complexity it was very critical to institute a system of effective coordination and monitoring for efficient project execution as well as for preventing corruption. Under the Prem administration, with involvement of dedicated and competent technocrats, the government was very successful in creating an export hub and a centre for technology intensive industries. Development of the Eastern Seaboard generated large institutional spillovers and built domestic capacity for establishing and managing industrial estates. This case also shows how major corruption, generally associated with a big infrastructure project, was avoided through instituting a domestic system of checks and balances and the use of the mass media. It also demonstrates how the Thai government managed to avoid serious conflicts with the donors (JBIC and the World Bank) without losing ownership to its grand development plan.

B Small Scale Irrigation Programme

The programme envisaged to provide remote rural areas with stable water supply for household consumption and agricultural production as well as to promote social stability and national security by reducing the huge income disparities and inequality that existed among different regions. The programme was supported by JBIC and continued for over 20 year – from 1997 to 2001. Without any previous experiences in managing small-scale irrigation systems the Royal Irrigation Department (RID) faced several technical and management challenges. Despite the success in improving access to clean water by rural households and increasing the irrigation ratio a number of management problems arose including the lack of effective coordination with the Community Development Department (CDD) which had established a network of community organisations.

2.8 Vietnam

ODA inflows to Vietnam increased sharply from the mid-1990s and have been maintained at a high level since then. ODA doubled between 1995 and 2002, but so did also public investments financed from domestic sources, and the share of public investments financed by ODA remained stable at about 25%. This pattern indicates that Vietnam had an initial absorptive capacity for planning and management of projects, and that the learning experience from earlier projects has spilled over to subsequent projects irrespective of funding. The Vietnam case study identifies factors that contributed to this condition, selecting one transport project supported by Japan and one rural development project supported by ADB and France.

A National Highway No. 5 Improvement Project

The transport project has been highly successful from a development impact and sustainability perspective. National Highway No. 5 (NH5) connecting Hanoi and the port city of Haiphong was completed between 1996 and 2000 with loans from OECS/JBIC and Taiwan (a minor section) and was the first 4-lane highway built in Vietnam and the first following international bidding standards (set by FIDIC). The impact on the development in the provinces along the highway (Hung Yen and Hai Duong) has been remarkable. This includes foreign direct investments as well as growth in small scale businesses and agricultural production for the urban markets. Regular maintenance is managed by a state-owned enterprise, partly financed from road toll. Road safety, however, has turned out to become a major problem due to high speed and increased traffic density.

B Rural Infrastructure Sector Project

The project, assisted by loans from ADB and AFD (France), supported small-scale rural civil works (mainly roads, irrigation schemes and drinking water supply) in 22 provinces during the period 1998 to 2004. The project was coordinated at central government level, assisted by international consultants, but provincial project management units were responsible for planning and implementation. Cost efficiency was high with many local authorities being able to complete projects at less than budget estimates and exceeding physical targets. This result is largely attributed by the study team to strong ownership and capacity of the provincial administrations.

3. SUSTAINABILITY OF INFRASTRUCTURE SERVICES: EVIDENCE OF INSTITUTIONAL SPILLOVER EFFECTS

The black box' metaphor (Figure 1) illustrates two types of institutional effects of large scale infrastructure projects. On the one hand, there is the project or micro-level perspective. The sustainability of infrastructure services has been directly influenced by institutional processes induced by the project itself. Among the 16 project cases there are several examples of this kind, which we will discuss referring to dimensions such as: sustainable financing of operations and maintenance; organizational capacity for operations and maintenance; and transfer and development of appropriate knowledge for operations and maintenance.

On the other hand, the black box also represents processes contributing to wider impacts on policies and institutions. There are also several examples of such institutional spillover effects that have contributed towards, in the words of Arakawa and Wakabayashi (2006), "capacity building and the establishment of comprehensive systems at the national level". These effects relate to institutional changes with respect to both sector policy and institutional development.

3.1 Institutional spillover effects contributing towards sustainability of infrastructure services established

Lack of proper maintenance of infrastructure services is a common problem experienced not least in Sub-Saharan Africa.

In Senegal, despite improvements in electricity supply to cities, the project (Case A) involves high operation costs. While a high economic return was promised in the post completion evaluations, there is a serious question over the debt sustainability of the executing inter-governmental agencies (SOGEM and SOGED), facing difficulties in recovering payments from national companies. The operational sustainability is also dependent on the level of river flows.

In Ghana (Case B), though the estimated rates of economic returns were respectable, the financial sustainability from the project to cover the required external debt services was difficult, in particular after 30% devaluation of the Cedi, without government subsidies and tariff increases to customers. This resulted in sizable deficits of the three electricity companies (VRA, ECG, NED) approaching 11% of government expenditure or 4% of GDP in 2002. More than half of the deficit stemmed from interest payments and exchange rate losses. This affected adversely utility investment by these companies, resulting in

inadequate generation reserve, transmission network constraints, overloaded transformers, and degraded distribution networks. Tariff increases were politically difficult as illustrated by the incidence, whereby tariff reforms that proposed an increase in charges of over 300% in May 1997 provoked an intense nationwide protest with the Association of Ghana Industries, the Trades Union Congress and the Civil Servants Association at the forefront.

The Kenyan irrigation project (Case A) was clearly not financially sustainable. The costs of operating and maintaining the irrigation facilities by far exceeded the revenue that could be created. It is claimed that the project at one point consumed half of all government investments for rural development.⁷ There are plans to revive the project, but uncertainty as to its financial sustainability prevails.

Problems of recurrent financing have surfaced also in the urban water supply projects studied. In both Indonesia (Case B) and Kenya (Case B) the answer has been privatization or divestiture of the services. Under pressure from international donors a decision was made to contract the Jakarta water supply to two foreign enterprises.⁸ In Kenya, the Nairobi water supply was set up as a self-financing public company. In both countries the collection of water fees has picked up, but investment in increasing water coverage lingers, and escalating water fees has caused popular protests.

Similarly, in Tanzania (Case B) there are conflicts over assets management in the Lower Moshi irrigation scheme, but the situation with respect to O&M is far better compared to the Kapunga irrigation scheme⁹ which was sold to a private company. In the latter, services to local farmers have deteriorated, while the problems in Lower Moshi are mainly related scarcity of water and alleged favoring of certain areas at the expense of others.

There is clearly a need in infrastructure projects to address the issue of **sustainable financing of operation and maintenance (O&M)** and **unforeseen supplemental investments** as an integral part of the project concept. There are examples from

⁷ http://www.multinationalmonitor.org/hyper/issues/1994/08/mm0894_08.html

⁸ <http://www.geocities.com/RainForest/vines/4301/water04.html>

⁹ The Kapunga Rice Irrigation Project was studied as a reference project. It was established in 1989 with assistance from AfDB, and included both smallholders and a parastatal farm. It has clearly been less sustainable compared to Lower Moshi. Today, the yield per hectare has more than halved and the government farm has been privatized. Smallholders no longer have any technical support in managing the scheme, and with the privatization farmers leasing land have been facing a doubling of the leasing fee.

the cases studied of both short-term financial measures being taken and longer-term management issues addressed.

In the financing of the National Highway project in Vietnam (Case A) the contingency fund of 11% of estimated construction costs was used for supplemental works such as building of provincial roads which connect to NH5 and the construction of fly-overs. To address road safety concerns JBIC approved financing under the SAPS facility (Special Assistance for Project Sustainability).¹⁰

In Senegal, the project (Case B) introduced accounting and auditing system to ensure transparency and accountability in financial management of producer organization and the project which greatly contributed to sustainability of the irrigation scheme. In Case A, donors assisted in setting up a Hydrology risk fund designed to ensure the financial sustainability in case of poor rainfall. Donors were also involved in introducing a tariff agreement and tariff rates for operational sustainability.

In Ghana, the general fragile fiscal condition has led to a deterioration of old roads while new roads have been built. The Road Funds instituted in 1985 for financing maintenance of the highways did not function as intended due to difficulties in fiscal management. This had affected the general sustainability of road projects. There are political and managerial difficulties in establishing a system of charging road users through creating road tolls or levying other special tax systems earmarked for road maintenance. Recently, Japan, through grant aid, has established a Counter-Value Fund at the Bank of Ghana to support project sustainability from which the Case A project benefited (see Box below for a summary of the comparative study of highway sector developments in Ghana and Thailand).

¹⁰ JBIC may carry out SAPS studies when it perceives there are problems which may impede realization of project benefits after project completion. JBIC covers all costs associated with this assessment.

A comparative analysis between Ghana and Thailand of aid effectiveness in the highway sector

Ghana and Thailand are often juxtaposed when the economic performance of countries in Sub-Saharan Africa and East Asia is compared. The thematic paper by Nishina (Nishina 2008) suggests that highway sector development can make an interesting comparative study. Since it does not require complicated technology or system design, the difference in initial conditions between two countries may not be too critical to produce different outcomes. The paper concludes that as far as highway sector development is concerned, the situation in Ghana has seen a substantial improvement in the recent years, and has reached the condition not far of that observed in Thailand in the late 1980s and the early 1990s.

Reflecting on the role of aid in this process, Nishina describes how Japanese aid in dealing with varied conditions throughout the project cycle of road construction has faced challenges of different nature. The contribution of aid, other than financing, can be identified as providing technical advice and institutional know-how for planning, monitoring, and operation and maintenance, as well as transferring of system know-how for construction management, including contracting out of various operations and sub-projects.

JBIC supported 20 road projects executed by the Department of Highway (DOH) of Thailand amounting to a total of 182.1 billion yen and representing more than 30 years of continuous involvement. JBIC supported 5 road projects executed by the Ghana Highway Authority (GHA), amounting to 42.0 billion yen over nearly 20 years. The involvement in Ghana was more intermittent.

In Thailand, JBIC operated a field office for a long time and established key personal networks with representatives of the highway sector through a series of joint meetings and day-to-day communication and information exchange which contributed to forge an efficient and effective partnership. In contrast, and partly due to geographical distance, JBIC's participation in the highway development in Ghana depended on intermittent biannual missions and visits.

(Box continued)

The two countries differ on three important accounts.

(1) The degree of aid dependency in the sector. In Thailand, ODA is seen as complementary to domestic finance for financing large-scale infrastructure development. About 25% of highway projects were ODA funded during the period from 1988 until 1993), but efforts were made not to reduce budgets for operation and maintenance of existing infrastructures. ODA resources covered only the foreign cost component of projects. In Ghana, aid resources have been essential for infrastructure investment as well as for operation and maintenance. The share of ODA finance was about 44% in 1996-99. Due to the fragile budgetary situation, in the past the government was often unable to cover even the local cost component of aid-financed projects. It could not fund feasibility studies either.

(2) Systems for domestic revenue generation. In Thailand, excise tax collected from automobile sales has been able to cover all the construction and maintenance cost of highway under the jurisdiction of DOH. In Ghana, it is noted that the government by the end of the 1990s managed to become independent from aid finance for all the routine maintenance through the Road Fund of Ghana financed by fuel surcharges. It was established in 1985, but became functional after restructuring in 1996.

(3) Involvement of the national private sector. In Thailand, local contractors and subcontracted local consultants had become main actors in highway construction through the “contract out system” since the late 1980s. The number of construction companies registered nearly doubled over a 10-year period since mid-1990s. In Ghana, the contract out system has increased its importance and the number of private contractors has been growing recently, while “force account construction” is still dominant in many SSA countries.

For the Eastern Seaboard Development Plan in Thailand (Case A) financial sustainability was not in doubt. As a large scale project of industrial development, successfully completed, it had major effects on the country's exporting capacity and diversification into technology intensive sectors. Throughout the project cycle the Thai Government exercised very strong ownership.

All projects studied show different processes of **capacity build-up**, but the

sustainability of this capacity varies considerably. This is of course a financial issue (see above), but equally important are two other factors, namely the continuity over time of key institutions and beneficiary involvement.

In Indonesia (Case A), the concept of “one river, one plan, one management” contributed significantly to building over time a river basin authority with capacity to generate adequate revenue for O&M. It started with the establishment of a unified executing system – the Brantas Office – already in 1965 with delegated authority from the Ministry to directly recruit and supervise its workforce, resulting in continuity of skilled personnel and considerable capacity building in the region. The project also introduced special incentives to stimulate work performance.

In Senegal (Case B), a very robust participatory operation and management system was created from the inception of the project, which has ensured strong commitments and participation by farmers and producer organizations (POs) in irrigation management. POs are given the responsibility for managing land and loans, and for marketing. The latter assures better prices to farmers than marketing by farmers individually. POs have established autonomous management with an effective accounting and auditing system that have nurtured a cost recovery culture. Moreover, POs are supported by the government agency (SAED) with subsidized loans and technical advice and new technology. SAED in turn close collaborates with a government-run research institution (ISRA). Through this well-functioning public-private partnership farmers are guaranteed secure access to seeds and fertilizers and technology extension. In turn, POs maintain and look after the equipment, such as tractors, shelling machines and trucks, supplied by the donor agency, JICA. This management structure has assured a strong ownership of the project at the community level, and has delivered very impressive results; the highest yield in the world as well as a very well-run system of loan provision and equipment maintenance. The successful implementation of this project shows that strong institution building at community level is critical for the sustainability of this kind of community-based infrastructure.

A similar project in Tanzania (Case B) cannot claim the same success despite the long-term involvement of the main donor (JICA and JBIC) and its promotion of ownership at the community level. One apparent difference is political interference of regional and local authorities which has prevented the producer organisations from assuming full management responsibility of the scheme.

Domestic political issues also affected organizational sustainability in the irrigation program of the Northern Region in Thailand (Case B). Despite the firm commitment to the program by Thai leaders and the King and the long duration lasting over 20 years, there were some weakness in the project management such as diffused responsibility in the management system and the lack of coordination between the implementing agency (the Royal Irrigation Department) and Community Development Department. Hence, despite some positive results achieved in outcomes such as access to water and the irrigation ratio and rural security and social stability, weakness in the management system and organizational structures has hampered further improvements of small scale irrigation.

There are several examples of substantial impacts in terms of **human resources development** even in cases where sustainable O&M remains a problem.

In Tanzania, special training institutions were created in both of the projects studied. China financed a Railway Training Centre in Zambia serving both countries (Case A), and Japan (through JICA) provided technical assistance through a series of project (from 1986 to 2006) leading to the Kilimanjaro Agriculture Training Centre, which today serves a national function (Case B).

In Indonesia, the process of transferring knowledge from Japanese experts to local counterparts was greatly facilitated by the ‘one consultant policy’ (both Case A and B) – Nippon Koei was engaged for 40 years in the Brantas project and Nihon Suido for 35 years in the Jakarta Water Supply. It is also worth mentioning that the Japanese corporate culture emphasized working and living together with local counterparts, which strongly facilitated transfer of knowledge and influenced local work culture.

The Vietnam case study explores the issue of Project Implementation Units (PMU). The management of foreign funded projects, not least in Africa, has been severely criticized for the tendency to establishing short-lived aid-sponsored enclaves which contribute little to long-term capacity building. In Vietnam (Case A), this problem has been less for two main reasons. One, the PMUs have been formal entities of the parent ministry and, second, well performing PMUs have been assigned new projects. An important aspect of the Vietnamese approach has been the concern for building local content in foreign funded projects. In Case A, the Ministry of Transport emphasized the need to strengthen local firms and the contract for design and preparation of tender was awarded to a Japanese company (KEI) in joint venture with a local consultancy

firm (Tien Phat). Construction of the road was divided into three lots. Two of the lots (lot 2 and 3) were awarded to consortia between Japanese companies and local partners (all state-owned companies).

In Ghana (Case A), the approach of the Japanese contractor is also highlighted. Significant knowledge transfer took place, since the Japanese company contracted sent 10-15 expatriate staff and modern equipments to work closely with over 1,000 Ghanaian construction workers. The Japanese consultants on the project also assisted the Ghana Highways Authority (GHA) to prepare a project supervision manual. Further, during the project cycle, staff of the GHA were selected and sponsored to take a short course in construction management. The case study also notes that the significant contribution by the Japanese agency and company in promoting a ‘culture of maintenance’ among local staff.

The National Electrification Project in Ghana (Case B) provided local managers with an opportunity to acquire a high level of experience and knowledge in procedures for project management. This knowledge transfer was very useful for management of subsequent projects. The case study notes the significant transfer of technical knowledge at the lower level of manpower, which led to capacity development within the ECG. It also emphasizes the usefulness of close interactions between local and foreign contractors for knowledge transfer at many levels through the system of subcontracting and tight supervision. Similarly, in the Senegal hydropower project (Case A) there have been some learning experiences in maintenance and operation through interactions between local staff of SOGEM and foreigners (ESKOM).

3.2 Institutional spillovers with sector wide impacts

In a widely cited publication from 1984 Dennis Rondinelli coined the expression “development projects as policy experiments” (Rondinelli 1984). He argued for an adaptive approach to development management where systematic lessons generated through project execution is a central element – seeing development projects as experimental processes of promoting and sustaining change. The cases studied indeed reveal **impacts on sector policies and regulations** from project experiences.

In Thailand (Case A), the commitment to this large scale industrial development plan was strong and assured from the very beginning with the establishment of the Eastern Seaboard Development Committee, whose chair was the Prime Minister himself, and the Committee Secretariat (the Eastern

Seaboard Development Office). Project preparation brought to the fore principal disagreements between key stakeholders, including foreign aid agencies (Japan/OECF and the World Bank) on macroeconomic and industrial policy. The magnitude of the proposed investments threatened the fiscal balance and some argued for postponement and downsizing, while others argued that this problem would be offset by increased foreign investment and export growth created by the project. The Government took a middle position, moving ahead with the ambitious infrastructure investments while cancelling a proposed fertilizer plant (against the advice of Japan and the World Bank). Three types of indigenous institutional processes helped dealing with differences of opinion: (i) rational decision making by technocrats in the Committee Secretariat being in the position to take a leading role with minimal interference from politicians, army generals and pressure groups; (ii) the approach adopted by the Prem regime to ensure checks and balances between rivalry interest groups; and (iii) transparency and openness ensured by a free press and mass media.

In Vietnam, Case A, being the first project to be implemented under the principle of international competitive bidding, clearly contributed towards modernizing Vietnam's bidding regulations, although with its own adaptation. In 1999, Vietnam introduced tender regulations requiring that "the foreign bidders, when participating in international biddings in Vietnam, shall have to either enter into partnership with Vietnamese bidders or commit to use Vietnamese subcontractors" (Decree No.88/1999/ND-CP). Prior to 1999, the Government informally had followed this practice for several years and there is ample evidence that forms of joint operations successfully stimulated capacity building in Vietnamese companies. In preparation for accession into WTO this requirement in the bidding regulations was removed in 2005. It is noteworthy that Vietnam based on its own experience and assessment for 10 years withstood outside pressures to fully liberalize.

In the Philippines, there are similar examples of how major projects led to changes in policies for involuntary resettlement caused by land acquisition for public infrastructure (Case A) and bidding regulations (Case B). In both examples, it is important to note that the process of policy change was iterative and based on negotiations. The construction of the Batangas Port project (Case A) had met a strong opposition from local residents over its relocation sites. After a lengthy negotiation process over the relocation plan, the government and the executing agency (PPA) had the intention to carry out demolition work forcefully, but it was suspended as JBIC insisted on a peaceful solution. This resulted in creation of an inter-agency committee and an official "beneficiary

list". However, when a consensus was not reached, the PPA executed the demolition work. With this action, the JBIC suspended the ODA loan. The JBIC action eventually resulted in a better package for the affected local residents. With respect to Case B, there was the locked-in traditional system over the bidding price negotiation process. OECF /JBIC was again instrumental as they made an indirect intervention by creating an incentive to change the bidding system using the recommendation of the technical consultant who acted as an informal liaison between the executing agency and the OECF/JBIC.

In Indonesia (Case A), as stated above, 40 years of uninterrupted development of institutions for the management of the Brantas river basin has evolved into a model that is being replicated nationally and in other countries.

In Ghana, Case A has led to establishing new road standards and a site operation manual as well as instituting a system of third party evaluation of road projects as a standard procedure. Case B resulted in a number of policy reforms covering; (i) tariff restructuring with establishing the 'life-line band' to protect the poor from tariff increases; and (ii) encouragement of interactions with communities in the process of project implementation to avoid conflicts at the community level. As institutional spillovers, these new measures were carried out in the EC funded rural electrification for the Western Region which commenced in June 2000.

The electrification project in Ghana (Case B) encountered, in addition to usual disputes associated with land-ethnic issues arising from new infrastructure development, a specific conflict situation due to the parallel tariff structures established under the NEP and the SHEP (Self-Help Electrification Project) systems. As the electricity supply service provided by SHEP, funded by JICA, was free of charge, but user charges were involved for the service provided by NEP, these parallel structures were seen to reward towns and cities faithful to the ruling party. This experience led to the establishment of an independent regulatory agency called the Public Utility Regulatory Commission (PURC) in 2002-3.

In Senegal (Case A), several layers of regional cross-country organizations were set up to manage this cross-border electricity distributional system, which appeared to function reasonably well except some occasional conflicts to be resolved. The contract for operation and management was given to ESKOM, owned 100 percent by the government of South Africa, through international bidding. ESCOM in all three participating countries appears to have difficulties

in sustaining profits. The project was one of the first successful cross-border co-operations in the region, which could provide a model for subsequent projects such as roads connecting member countries.

The irrigation project in Senegal (Case A) has raised major environmental health issues as the prevalence of malaria and bilharzias increased after the dam was constructed. This has led to the creation of a special program to mitigate these problems as well as the participation by SOGEM and ESKOM in social programs and income generating projects. A Hydrology risk fund was also created through this project.

4. THE ROLE OF DONORS BEYOND FINANCE

This section looks specifically at the role of the donor and foreign contractors in relation to some of the institutional impacts described above. What can be said about the linkage between the approach of the donor's side and the processes of institutional change? Not all case studies identify and analyze such linkages. The findings with respect to the role of the donors are organized with reference to the main stages in the projects cycle: project identification and preparation, construction and operations and maintenance. In addition, we also look at the role of donors in sector policy development.

Regarding **project identification** a distinct regional contrast emerges. In the East Asian cases, all projects studied had their origin in national or sectoral development strategies and key institutions on the recipient side managed the project preparation process, and at times donors also experienced that their advice was not adhered to.

In Vietnam (Case A), the National Highway No. 5 was top on the Government's list of priority projects submitted to the first donor meeting (i.e. meeting of the Consultative Group) in 1993. By then, the Ministry of Transport had already started planning and design with its own funds.

Likewise, the Brantas project in Indonesia (Case A) started with the Indonesian authorities requesting a Japanese consultant to do a pre-investment study.

The Philippines Case A and B were both embedded in the recipient's master development plan, and initiated by the government, who approached Japan for technical and financial assistance.

Thailand Case A is an illustrative example of strong recipient control of the project formulation process. The Eastern Seaboard Development Plan was firmly embedded in the country's national development plan and entirely home-grown. The role of donors was limited to provision of financial support, transfer of modern technology and engineering expertise. The Thai government on critical issues diverted from the advice of both major donors – OECF and World Bank. In Case B, the program was firmly backed by the successive Thai governments, with very important patronage given by the King. The role of the donor (JBIC) was in transfer of knowledge and engineering expertise.

In Vietnam (Case B), provincial authorities were able to get their own priorities accepted despite deviation from the original program concept advocated by ADB.

In SSA, donors had a more heavy hand in both project identification and formulation.

In Senegal (Case A), while the initiative to undertake the project came from the three governments, the World Bank was intensively involved from the very beginning of the project. Subsequently, donor involvement has been critical in pushing OMVS to accept the principle of private sector participation in the project. The creation of an intergovernmental management system, involving SOGEM and ESKOM, can be attributed to donor influence. This management system has been an important success factor in this cross-border project. Further, donors assisted in the creation of an accounting system and procurement rules to ensure transparency and accountability in the management of SOGEM.

In the Senegal Case B, however, ownership was firmly with the recipients of aid throughout the project cycle. The idea of the project emerged from the government agency (SAED) and the project design was subsequently developed by a SAED-JICA team. JICA's principle has been to work with SAED, which served as an interlocutor to JICA for the project. SAED has a critical role in monitoring production and loan cycles and in overseeing the overall financial management of the project. JICA provided technical assistance in the form of equipment and technical advice, including personnel exchange. Japanese technicians were sent to ministries and to SAED, while Senegalese civil servants and technicians were sent to Japan for training. This close collaboration between JICA and the implementing agency – SAED, rather than government offices, was critical for the success of the project.

The Tanzania and Kenya cases, exhibiting some of largest infrastructure projects undertaken in the respective sectors (railways and irrigation), stand out as individual investments not linked to an overall long-term national strategy. This is not to say that governments at the time of accepting the projects did not express general development visions, but there has been no framework of successive master plans guiding these investments. Furthermore, frequent changes in sector policies and institutional set-up, not least through donor influence, have diluted ownership.

In both Ghana cases (Case A and Case B) the government of Ghana prepared a list of infrastructure projects to be funded and supported. However, in Case B the master plan was prepared by a Canadian consultancy firm, though two employees from ECG were seconded and some consultation with beneficiary communities and districts took place. The local national company, ECG, acted only as an implementing agency and financed the local component of the project (10 % of the project).

In the **construction phase** we also see different approaches taken by the lead donors.

In Indonesia (Case A and B) Japan adopted a ‘one consultant’ policy, and tied the aid to contracting of Japanese companies. Whereas this runs counter to the current ruling paradigm of international competitive bidding, tangible benefits were created in terms transfer of knowledge and accountability. The Indonesia case study makes a comparison with Brantas and another river basin project (Citarum) assisted by the World Bank, ADB and European countries. In the latter case, a succession of different European consultants and contractors were involved and it is argued that this made institutional development more difficult.

In Vietnam (Case A), Japanese contractors/consultants assisted in capacity building of joint venture firms. TEDI – the engineering and design corporation under the Ministry – was assisted by KEI in building capacity on highway planning and design in accordance with international practice. Similarly, the staff of the PMU for overseeing the implementation, only having experience from the socialist planning system, was retrained through the collaboration with KEI.

In Ghana (Case B), though the project was executed under the Ministry of Energy, the World Bank insisted on engaging the services of an international project management firm to assist the ECG with the execution of the project. It is not clear how closely foreign consultants and local staff worked together in executing the project. As to the bidding procedure, the Nordic assistance came with the condition that only construction firms originating from these countries be contracted whereas the rest of the project components were opened up for international competitive bidding. Only the small Ashanti region component of the project was executed by a local firm.

As noted above, JBIC has in several of the projects studied participated in funding

arrangements earmarked for **operations and maintenance**.

In Indonesia, the succession of loans for both Case A and B (linked to four successive master plans) also covered repair works and some operational costs.

In Ghana, the maintenance of the Case A road has recently been assisted through a Counter-Value Fund at the Bank of Ghana, financed by Japanese grant aid. The promotion of a maintenance culture by the JBIC was also very important for the road sector development in Ghana. When the road condition deteriorated due to the rapid unanticipated increase in traffic flows, which made technical specifications used for the construction of the A-Y road inadequate, the JBIC participated in a road reconstruction.

As for the Japanese financed projects studied the influence on **sector policy development** is mostly indirect. There are instances of loan suspension which have been triggered by the need to resolve critical issues which are rooted in policy and regulations (e.g. involuntary resettlement in the case of the Philippines).

The World Bank and IMF, with support of some bilateral donors, actively pushed for water policy reforms in Indonesia and Kenya, leading to the privatisation or divesture of urban water supply authorities (e.g. Jakarta and Nairobi).

There are similar privatisation processes going on in the railway sector of Tanzania (involving the TAZARA – Case A).

In Senegal (Case A), the World Bank has been actively involved in decisions regarding the bidding process and heavily pressured all three governments to privatize national electricity companies, but the attempts to privatize were not considered successful and resulted in a policy reversal. The World Bank, on the other hand, helped to establish a special program that successfully has helped addressing environmental and health problems associated with the project.

5. CONCLUSIONS

Our synthesis of 16 cases of aid to infrastructure development in 8 countries in East Asia and Sub-Saharan Africa provides conclusions and offer policy recommendations at different levels. While a case study approach cannot claim statistical significance of its findings, it offers the prospect of better understanding of what we have labeled ‘black box’ dynamics. Although the eight country studies are not strictly comparative in their design and emphasis, in combination they bring to the fore important **policy messages** that notably in some cases go against conventional wisdom in the mainstream development discourse. We have summarized these findings and messages under four headings: on the effectiveness of aid to infrastructure, on the difference between East Asia and Sub-Saharan Africa, and on the respective roles of the recipient and the donors in development partnerships.

5.1 On the effectiveness of aid to infrastructure

Economic infrastructure projects are more than capital investments in ‘bricks and mortar’. They represent complex processes of institutional and policy change that cannot be logically planned and projected in a manner similar to the construction itself. Some times the result is non-sustainability of the services put in place. On the other hand, infrastructure projects represent powerful vehicles for stimulating positive institutional transformation. The effectiveness of aid to infrastructure has to be gauged in this perspective, and not merely perceived in terms of physical outputs or macroeconomic impact.

In terms of sustainability, the projects studied exhibit a wide range from unsustainable (Kenya Case A) to ‘best practice’ (Indonesia Case A and Thailand Case A) with several projects still struggling to achieve financially sustainable operation and maintenance or meeting the demands of all legitimate beneficiaries. Irrespective of these different outcomes, which may also change with time and new initiatives coming, we have documented in section 3 above many important institutional spillover effects that form part of the aid effectiveness picture.

- Infrastructure projects through their national political significance have consolidated national political will and ownership in handling aid relationships. This was evident in both Thailand and Senegal.
- Projects acted as catalysts in domestically driven processes for reforming national policies and regulations to meet international standards, for example in bidding, and environmental and social safeguards (e.g. the Philippines and Vietnam).

- Projects were also used by donors to leverage demands for policy change. However, such use of aid for leveraging policy reforms produced mixed results at best. Where reforms have a firm domestic support base an externally influenced reform agenda can be successfully ‘domesticated’ over time.
- Projects influenced over time local people’s values and standards on issues such as community-based management, work ethics and maintenance culture (e.g. Tanzania, Indonesia and Senegal).
- Projects contributed to effective transfer of new technology to emerging local institutions (e.g. river basin management in Indonesia, paddy farming in Tanzania and irrigation management in Senegal).
- Projects in numerous ways impacted positively on strengthening administrative systems, in terms of capacity for planning, inter-agency coordination, cross-border cooperation, budget management, and organizational reform.
- Projects have had significant and lasting impacts in terms of human resources development and institutional spin-offs (e.g. major training institutions in Indonesia and Tanzania, and the formation of new companies in Vietnam and Indonesia).

Two general policy messages can be drawn from these findings. First, major infrastructure projects potentially can yield broader and deeper development impacts provided they are **conceived of as long-term processes** of institutional development. Second, aid to major infrastructure projects, and hence **the project modality of aid**, is potentially an effective platform for a genuine development partnership combining recipient ownership with access to various aid related inputs (flexible financing, technology transfer, joint operations, and international standards).

5.2 On the difference between East Asia and Sub-Saharan Africa

This study has not and could not produce conclusive evidence explaining the dramatic differences in development trajectories of the two regions. However, the case study approach and the analytical framework underpinning it enable us to examine the potential contribution of aid to infrastructure development. As mentioned in Section 1.2, it is strongly argued that part of the explanation of the regional disparity is the infrastructure deficiencies facing Sub-Saharan Africa (SSA), and moreover the weak capacity for sustainable management of infrastructure services.

As to the difference in infrastructure development between the two regions, the donor community has acted differently in the two regions. In East Asia (EA), recipient governments have clearly prioritized infrastructure and donors by and large have followed suit, either because of own predispositions (e.g. Japan) or the relative strength of the recipient country in aid negotiations. In Africa, on the other hand,

there was clearly a donor driven shift away from economic infrastructure investments till recently, partly due to the assumption that the private sector would come forward in a new liberalized and deregulated policy environment and partly because of the emphasis on governance and social sectors from the early 1990s.

As to the difference in the capacity in delivering infrastructure services, this study offers two important insights as to the effectiveness of aid. Firstly, the main regional contrast in the project cases studied was the **linkage between projects and longer-term strategic development plans**, whether national, sectoral or area-based (e.g. a river basin). This is not mainly about the formal existence of such plans, but a genuine political process where there is a two-way process between project development and the overall planning framework. While the latter ensures budgetary and institutional resources, lessons from the project should also influence policy. Both processes are essential for securing sustainable infrastructure services. This was commonly found in the EA cases, while the SSA projects tended to be more isolated undertakings even when successful in reaching output targets. Like the case of the Senegal River basin, it was only 13 years after the first project with donor assistance was implemented that a river basin development plan was adopted by government. Similarly, the Tana River basin in Kenya has no integrated plan even after two major irrigation projects were found not be sustainable. The Brantas River development in Indonesia is a contrasting case.

If we consider capacity for long term planning an initial condition or foundational factor that distinguishes EA from SSA, one may conclude that aid should only be provided when there is evidence of the presence of this kind of capacity. This is an argument similar to the basic paradigm of the so-called “new aid architecture” reflected not least in the text of the 2005 Paris Declaration on Aid Effectiveness, namely the need for partner country ownership articulated through a long-term development strategy.

Contrary to what is implied by the Paris Declaration, our study shows, which is the second insight, that donors should not insist on such strategies or frameworks as a condition for aid delivery. Rather, the EA cases show that aid can play a constructive role in improving such planning frameworks through incremental processes based on project cooperation anchored in domestic institutions. The clue is to **respond to recipient requests within a framework of long-term commitment and strict accountability for project outputs**. In the following sections, our findings with relevance to development partnerships are further elaborated.

5.3 On the role of the recipient in development partnerships

Political will and commitment to long term visions is a major factor explaining sustainability of infrastructure services. This should manifest itself in home-grown long-term development plans being the framework within which aid financed projects are identified and formulated. The political commitment of successive governments would ensure a high priority in fund allocation over medium- and long-term to sectors and regions where a specific donor assisted infrastructure project is placed. In particular, the predictability of sufficient and stable fund allocation over a long term horizon is crucial for sustainable operation and maintenance of infrastructural services. For this to happen, big infrastructure projects should be placed in the context of national development plans that include sectorial or regional master plans.

Strengthening the ‘local content’ in foreign funded projects is critical. Governments should ensure that local companies/enterprises are actively involved. This may necessitate revisiting the need to abide to standard requirements for international competitive bidding. A positive lesson from several East Asian countries is their insistence on promoting local enterprises through special bidding regulations and other incentives.

Institutional continuity is in itself an important condition for capacity development. Too frequent organizational reforms and shifts in delegation of authority weaken accountability and learning capability. The driving force for achieving the development mission should come from recipients’ endeavor in **utilizing and strengthening their own institutions**, both formal and informal. There is a need to build professional organizations for project execution that can endure the volatility of donor funding. This includes incentives for institutional performance by key organizations involved in implementation and O&M, as well as the empowerment of users of infrastructure services.

Third party control is needed, and governments should ensure transparency and media exposure of major infrastructure projects.

5.4 On the role of donors in development partnerships

Donor’s **long-term commitment** not only to project financing but also to recipients’ development vision and master plans is required, which represent a “hidden or implicit guarantee” for the predictability of multiyear aid pledges and budget allocation to a project and sector development. Naturally, the predictability of sufficient and stable fund allocation is crucial for sustainable operation and maintenance of infrastructural

services.

Operations and maintenance needs to be an integral part of the development cooperation. This entails on the part of donors flexibility with respect to financial commitments, as well as ensuring a focus on O&M from the initial design.

Donors should **stimulate ‘endogenously driven’ processes** of development of local institutions and capacity. It is important to emphasize that donors should try to identify and nurture aspects of strength found in local institutions, and their advices should build on their strengths. It is not at all helpful if donors try to introduce or impose their “model” institutions on recipients by pointing to a long list of weakness or deficiency of local institutions and systems.

A corollary to the above recommendation is that donors need **to be more conscious about initial conditions** on the recipient side. This relates both to political will, capacity and leadership. No measure of aid can buy these factors in the short term.

Further, **project aid can nurture mutual trust** through close face-to-face cooperation, knowledge transfer and learning by doing on the ground between those participating in an infrastructure project from donors and recipients. Such an opportunity of mutual learning involving both private and public sectors is less likely to be present in other aid delivery modality such as budget support.

Priority should be given to **on-the-job learning** – which implies long-term engagement of foreign contractors/consultants and building of genuine partnerships (e.g. through joint operations and integrated organizations).

There is a need to **reduce the emphasis on both ex-ante and ex post policy conditionality**. Policy implications from our findings regarding aid effectiveness are clearly quite different from those originating from the conventional perspectives of viewing aid as leverage for donor-inspired policy and institutional reforms, where ex-ante or ex-post policy conditionality prevails and ‘marketing’ institutional models deemed appropriate by donors is a dominant feature of aid relationships. Sustainability of infrastructure services have been achieved where national governments and local institutions have managed a process of gradual policy development and capacity building, in a long-term flexible partnership with major donors.

By way of summarizing, we conclude that aid could contribute to economic development only through establishing and nurturing productive donor-recipient

relationships based on true partnership and ownership. Such relationships would encourage and stimulate the process of policy learning and experimentation as well as institutional experimentation and innovation. Performance assessments could then be made in an environment conducive to nurturing mutual trust and respect, and be based on transparent and free flows of information between donors and recipients.

Further, recognizing that the recipients' own institutions could be strengthened or transformed as a part of development processes, aid should be provided even to countries and institutions that initially do not meet the standards set by donors in terms of their capacity in policy formation, implementation or governance at large provided the requirement of long term commitments can be made.

ANNEX

Project reports

- Aryeetey, E. and P. Quartey (2008) “Ghana Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Fujimoto, K. (2008) “Indonesia Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Jerve, A.M. and M. Nissanke (2008) “Framework Paper” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Kato, H., C.E.D. Diaz and M. Onga (2008) “Philippines Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Likwelile, S.B., L. Rutasitara and J.O. Haule (2008) “Tanzania Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Mbaye, A.A. (2008) “Senegal Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Mwega, F. (2008) “Kenya Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Nishina, K. (2008) “Aid Effectiveness with regard to the Financial Capacity of the Government and the Augmenting Capacity of the Private Sector” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Shimomura, Y. and F. Mieno (2008) “Thailand Case Study”, in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.
- Tran, V. T. and Y. Koseki (2008) “Vietnam Case Study” in JBIC Institute, *Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa*, JBICI Research Paper No. 36, Tokyo.

REFERENCES

- Ampiah, K. (1996). 'Japanese aid to Tanzania: a study of the political marketing of Japan in Africa'. *African Affairs*, Vol. 95, 107-124
- Arakawa, H. and J. Wakabayashi (2006). 'Budget Support and Aid Effectiveness: Experience in East Asia'. *JBIC Review*. No. 14
- Bourguignon, F. and M. Sundberg (2007). 'Aid Effectiveness – Opening the Black Box'. World Bank paper presented at the American Economics Association annual meeting January 5-7 2007
- Homewood, K. (2006). 'Book review'. *Africa Today*, Vol 53: Lerise, F.S. (2005). *Politics in land and water management: Study in Kilimanjaro, Tanzania*, Dar es Salaam: Mkuki na Nyuota Publishers
- Jerve, A.M., Y. Shimomura and A. Skovsted Hansen (2008). *Aid Relationships in Asia. Exploring Ownership in Japanese and Nordic Aid*. London: Palgrave Macmillan
- Nissanke, M. and E. Aryeetey (2003). *Comparative Development Experiences of Sub-Saharan Africa and East Asia: An Institutional Approach*, Chapters 1&2, Aldershot, UK: Ashgate
- Rondinelli, D.A. (1984). *Development Projects as Policy Experiments: An Adaptive Approach to Development Administration*. London: Methuen
- World Bank (1993). *The East Asian Miracle: Economic Growth and Public Policy*. Washington, DC

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² In Japanese only. English summary can be downloaded from the JBIC website.

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