

POLICY BRIEF

NO.1/2020

PUBLIC-PRIVATE PARTNERSHIPS AND THE IMPLICATIONS FOR TECHNOLOGY TRANSFER

A Political Settlement Framework

EXECUTIVE SUMMARY

The importance of public-private partnerships (PPP) as a means to improve technology transfer in Africa has been acknowledged in scholarly and policy circles. However, according to the Global Innovation Index (2019), African countries continue to struggle in both science and technology and innovation output domains. This is partly because of inadequate incentives to consolidate context-specific local content requirements and demands for a favourable business environment by private sector actors.

Advocates for public-private partnerships have largely relied on economic approaches, which leave insufficient room for non-economic (or political) processes of change, such as lobbying, advocacy and the continued struggle for the distribution of power and rent within local, national and global political economies.

New approaches to public-private partnerships for technology transfer in Africa needs to also consider how non-economic variables, such as, corruption (elite capture and co-optation) which promotes the use of public resources for the benefit of a few individuals in detriment to the welfare of the larger

society; conflicts of interests, capacity constraints, inefficiencies in legal institutions, and the lack of collective action and contestation.

This Policy Brief proposes a political settlement framework for analysing public-private partnerships within local and national political economies in Africa. Four possible scenarios are explained as outcomes to the continued struggle for better local content requirements that is, support for infant industries through technology transfer; and a favourable business environment by the private sector.

It is the hope that such an approach to public-private partnerships for technology transfer will produce context appropriate strategies and interventions that marry the expectations for technology transfer and local content requirements with the demands for a favourable business environment for and by the private sector.

INTRODUCTION

Technology transfer facilitates the diffusion of technological knowledge, with attention given to the development of technological capabilities. In general, technology transfer often relates to the theoretical and practical knowledge, skills, and artefacts that can be used to develop products and services as well as be utilised for their production and delivery.

Previously, several efforts have been made to encourage technology transfer through public-private partnerships (PPP) in Africa. While there has been much emphasis on the ‘scientific and technological’ aspects, social interactions and behavioural issues such as, corruption (elite capture and co-optation) and conflicts of interests, capacity constraints, deficiencies in legal institutions, and the lack of collective action and contestation, have often undermined implementation of these interventions.

Insufficient attention has been accorded to socio-political realities on the ground, and feedback mechanisms for complaints and improvement have been neglected at the expense of macro-economic benefits. At a time when many African countries are beginning to reposition themselves in the wider struggle for dominance in international markets,

the challenges in PPP and technology transfer is an opportunity for policy makers, civil society and developmental organisations to re-engage public and private sector actors by asking different questions regarding development interventions in Africa.

It is the hope that this policy brief and its accompanying report will introduce new ways of thinking about public-private partnerships and technology transfer in Africa.

Through the Sustainable Development Goal (SDG) 9, African countries have pledged to ‘build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation’ in their countries. In particular, SDG Target 9.5 calls upon countries to encourage innovation and substantially increase the number of researchers, as well as public and private spending on research and development.

However, several African countries continue to underperform in science, technology and innovation (ST&I). For example, only three sub-Saharan African countries are close to meeting the 1% target as expenditure of GDP on research and development. Additionally, the lack of sufficient skills for

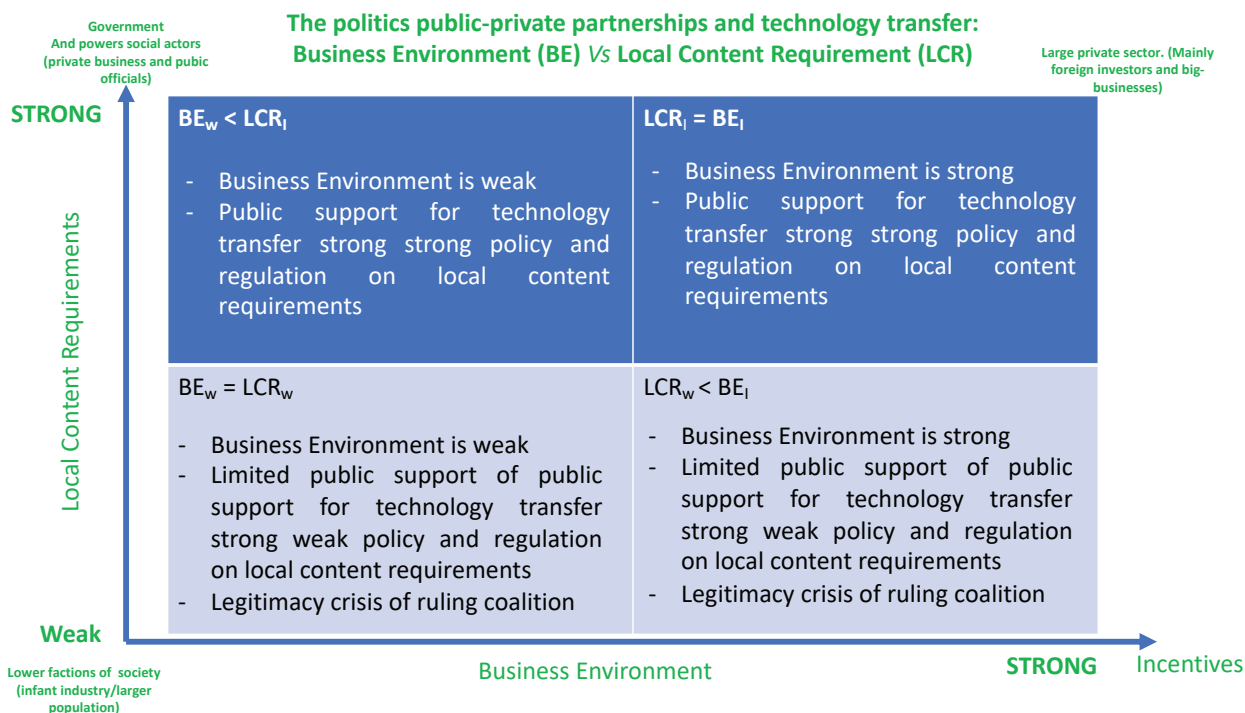


Figure 1: Illustration of the continued struggle for power and rent with political economies

industry, and insufficient financial support for skills development continue to plague the continent's skill-starved manufacturing and industry sectors.

More importantly, high incidences of risk, non-performing loans and the lack of adequate security for lenders contribute to low levels of domestic credit and investments by financial corporations or equity services in Africa. The over-reliance on pecuniary investment incentives such as, tax exemptions, and inadequate regulatory and institutional frameworks in African countries has led to pervasive levels of capital flight, tax avoidance and corruption, which further translates into unsustainable revenue buoyancy for many countries on the continent.

Punitive tax regimes for local businesses and the lack of proper tax administration also increases the burden for infant industries in many African countries. Not surprisingly, extra-legal social transactions continue to be the main determinants of industrial and investment policies.

Such informal social and political arrangements involve the continued negotiation for a favourable business environment to increase profits and incentives by businesses and private sector actors, and the co-optation of public resources by powerful social individuals including public officials. In some instances, governments have advocated for social policies that purport to encourage job creation, protect infant industry and enhance technology transfer for legitimacy enhancing purposes.

The political settlement framework as a new lens for analysing public – private partnerships

The political settlement framework (PSF) was introduced by Khan (1995) as a substitute for new institutional economics (NIE). The approach has much more specific meaning as a political economy analytical tool that provides a novel way of understanding the drivers and outcomes of contemporary socioeconomic change.

The approach supports the analysis of institutions and helps understand why institutional arrangements may work well in certain parts of the world but produce poor results in others. For example, it answers questions like, why market approaches to public-private partnerships has failed to produce similar results in Africa vis-à-vis their European or Western counterparts? In understanding the political settlement between private capital that continuously negotiates for a favourable business policy, and the government's effort to increase political 'legitimacy'

and support, such an approach provides unique insight into political and economic change within public-private partnerships.

The continued struggle for the distribution of power and rent within public-private partnerships can be illustrated using four possible scenarios as shown in Figure 1. The Figure illustrates four possible scenarios from the struggle between the need for a favourable business environment (BE), and better local content requirements (LCR) in establishing public-private partnerships¹.

Scenario 1: Weak Business Environment, Strong Local Content Requirements

The top left quadrant of Figure 1 represents an economy with weak business environment policies - represented by BEw, while incentives or policies and regulatory mechanisms for local content requirements are strong – represented by LCRI. Lower factions of society (including infant industry actors) have a propensity for collective action and contestation.

Excluded factions of the private sector are weak and do not have the political tools to hold government accountable for its failure to provide for a favourable business environment. In such a scenario, governments can purport to provide for social policies that includes the protection of workers, and the protection of infant industries for legitimacy enhancing purposes.

However, there is a failure to match social policies with a favourable business environment for private sector. Therefore, private sector investors with potential capital may withhold capital needed to develop and support local industries. In this case, for example, the government may struggle to compete with the cost of subsidies provided to infant industries, and venture capitalists may increase the cost of capital needed by local private sector actors for STI.

Scenario 2: Strong Business Environment, Strong Local Content Requirements

This scenario is represented in the top - right quadrant of Figure 1. Here, the business environment and local content requirements are strong (BEi = LCRI). That is, business environment policies and incentives are

¹For a more detailed analysis, see Atenchong (2020) *TECHNOLOGY TRANSFER AND PUBLIC-PRIVATE PARTNERSHIPS IN AFRICA: A Base-line survey of business environment reforms and local content requirements in Tanzania*.

strong - represented by BEi, and the incentive or policy and regulatory framework for local content requirements are equally strong, represented by LCRi. In this scenario, lower factions of society have a propensity for collective action and contestation. Excluded factions of the private sector are strong and they have the political tools to hold government accountable for its failure to provide for a favourable business environment.

Therefore, private sector investors with potential capital have the incentive to provide capital to develop and support local industries. In this case, private sector actors also support LCR as lower factions of society also make demands through collective action and contestation. Additionally, such reforms may be beneficial to the expectations of the private sector.

The favourable and robust LCR may counteract government subsidies – reducing public expenditure on subsidies for local industries, venture capitalist will benefit from an increase in performing loans as local industries expand and become internationally competitive.

Scenario 3: Weak Business Environment, Weak Local Content Requirements

Represented in the bottom - left quadrant of the political settlement framework, both business environment demands, and local content requirements are weak (LCRw = BEw). In this scenario, lower factions of society lack collective action and contestation, excluded factions of the private sector are weak and there is no political tool to hold government accountable for its failures. In this scenario, private sector investors with potential capital may withhold much needed capital to develop and support local industries.

There may also be high incidences of capital flight through tax evasion/avoidance, corruption and clientelism due to lack of adequate legal institutions and political tools for accountability. Venture capitalist may also suffer due to an increase in non-performing loans. There is also a legitimacy crisis within a weak government as they fail to provide compressive public policies and strategies.

Scenario 4: Strong Business Environment, Weak Local Content Requirements

Illustrated in the bottom - right of Figure 1, this scenario results where local content requirements are weak, represented by the symbol LCRw, while business environment policies are strong, represented by the symbol BEi. In this scenario, private sector

investors have the political tool and means to co-opt a weaker government for the implementation of a favourable business environment.

There is a failure for lower sections of society to hold government to account in spite of collective action and contestation, leading to a legitimacy crisis for the weak government. Private sector actors will continue to provide capital which may be co-opted by government elites in rent-seeking, or clientelism to secure its short-term survival. Capital needed for the protection and support of local industries may be misused. The government may lose political support, struggle to compete with the cost of subsidies, and venture capitalist may suffer due to the increase in non-performing loans as local industries become less competitive.

How Does the Political Settlement Framework Strengthen the Analysis and Interventions in Public – Private Partnerships?

With the multiple outcomes and complex dynamics within business ecosystems illustrated in the scenarios above, the political settlement framework allows policy makers, developmental organisations, and researchers to re-consider their approach to public-private partnerships for technology transfer and innovation, and incorporate such complex and context-specific power dynamics in their intervention to public-private partnership for technology transfer.

So far, the reliance on purely economic models and other ‘techno-centric’ approaches, which over-emphasise the role of private sector (markets) and demand – pull theories or government-led ‘supply push’ interventions to innovation and technology transfer have failed to produce optimal results in the continent. It is essential that future interventions to public-private partnerships for technology transfer device new ways of engaging with social and political actors (besides economic actors) to foster profitable and sustainable partnerships. The role of civil society, developmental organisations and researchers is to tailor context specific recommendations for business ecosystems and acknowledge that social and political transactions continue to play an active role in policy outcomes in these countries.

IMPLICATIONS

Barrier Identification: Barriers to technology transfer and innovation relate to limitations in knowledge and technological competencies, institutional and policy fragility, lack of financial support on the one hand; and behavioural problems such as elite capture, co-optation and conflicts of interests and the lack of collective action and contestation on the other.

These barriers are characteristic of any sector of the economy and could be at the local, national and international level. For example, the Five-Year Development Plan of Tanzania (FYDPII) 2016/2017-2020/2021, identifies the improvement of research and development (R&D) in crop cultivation as an area of strategic intervention.

Part of the challenges plaguing crop production in countries like Tanzania is insufficient technologies to improve soil nutrient quality, and a weak research infrastructure. It is, therefore, imperative the interventions for technology and innovation transfer start with barrier identification process through research, and sector/context specific learning processes. The aim is to initiate ownership of the

learning process with/by concerned stakeholders within the sector and economy.

Knowledge and Capacity Distribution: Appreciating context-specific business ecosystems presents an opportunity for developmental organisations to develop new strategies, non-confrontational dialogue mechanisms and propose solutions that can marry public policy and private sector ambitions. In fact, it is beneficial for governments in African countries, and the associated public institutions to engage in a rigorous deliberative process to improve public ownership of their developmental ambitions.

Consultants, think-tanks and civil society groups can play an active role in building bridges for innovation in technology transfer by supporting and contributing to such deliberative processes.

In doing so, developmental organisations must assess whether the capacity to tackle the barriers to technology transfer and innovation are distributed across interreacting stakeholders. In other words, there is a need to mitigate the drawback caused by

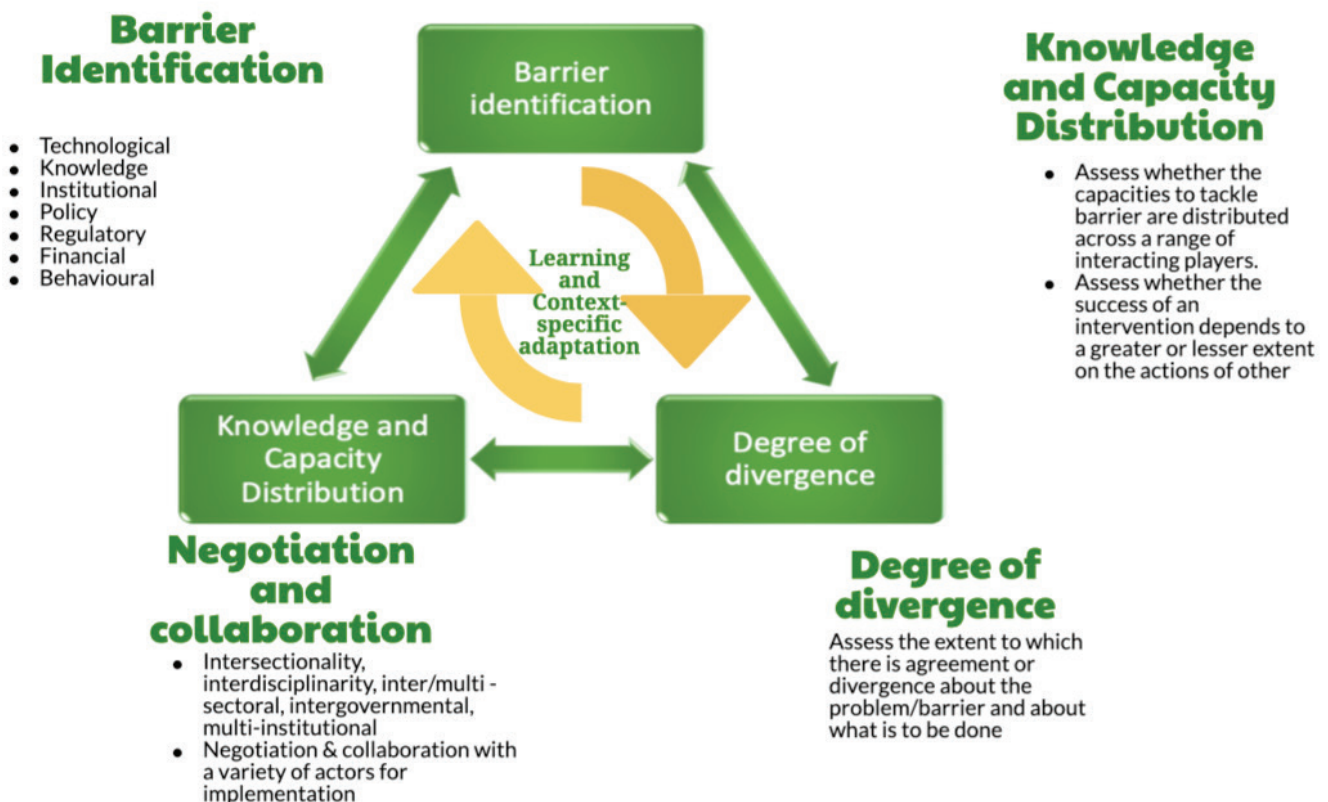


Figure 2: Strategic approach to PPPs and Technology Transfer - SCINNOVENT CENTRE, 2020

information and power asymmetries within business ecosystems. According to the United Nations (2004), to foster development through technology transfer, public and private organisations must be encouraged to:

1. Share information about innovations and outcome;
2. Provide incentives (economic and non-economic) that create healthy competition;
3. Use a combination of practical approaches pioneered by agencies such as the media, to produce and design programmes and platforms for teaching- and practice-based case studies on technology chain or inventive process; and
4. Maintain a facilitative climate for innovation, dissemination and adoption of technology.

Degree of Divergence: This involves accessing the extent to which there is agreement or divergence about the problem, barrier or intervention to technology transfer and innovation. For example, according to the Tanzania Private Sector Foundation (TPSF), convergence in the need for local content regulation and requirement was low up until the late 2000s 'as the government didn't really think about it before and local content reform was not really a language at the time' (Lange and Kinyondo, 2016).

With increasing pressure from civil society organisations on the importance of local content reforms, the two major mining companies, Acacia and GGM, together with the government authorities, responded by establishing the Integrated Mine Technical Training Programme (IMTT) at the Arusha Technical College (NECTA) and Moshi VETA College in 2009. While the project has equipped the sector with better-qualified employees, it has most probably not entailed that Tanzanians have replaced expats in the sector to any significant degree.

The transfer of technology through public-private partnerships may fail to appreciate the cultural, historical and socio-political differences between countries, sectors or even local political economies. Public and private sector actors must take into account the importance of the cultural determinants underlying the success or failure of technology transfer.

Negotiation and Collaboration: Developmental organisations and civil society actors must encourage dialogue and networking initiatives by bringing together public sector players, researchers and technicians, young professionals and a broad range of private sector actors.

Negotiation and collaboration with a variety of actors, valorise local learning approaches, apprenticeships, vocational training centres, and advocate for increased spending in professional and technical training programmes which contributes to the building of technological capacity and learning processes to absorb and optimise advancements in science, technology and innovation.

CONCLUSION AND RECOMMENDATIONS

Interventions and initiatives to support technology transfer through public–private partnerships remain attuned not just to the economic and technological aspects but also the social and political interactions that shape the behavioural responses from a multitude of other actors within local and national economic systems. Such approaches must assess whether the success of the policy interventions depends to a larger or lesser extent on the actions of other players.

These forms the thrust of our argument for the inclusion of the political settlement framework in the analysis of public–private partnerships as a vehicle for enhanced technology transfer in Africa. It focuses the analytical lens to a crucial and important component which is often undermined in public–private partnership interventions, and its impact on technology transfer and innovation i.e. local political economies and the continued struggle for power and rent within national innovation ecosystems.

It is a move towards answering the nagging question that holds key to the success or otherwise of most policy interventions: To what extent do factions and actors within the business ecosystem agree or disagree about what is to be done about policy, regulation or any other intervention in public-private partnerships for technology transfer and innovation?

We put forth the following recommendations:

Identify and Amplify Local Champions

The success of public-private partnerships will benefit to a reasonable degree on the support of role models and opinion leaders at community and sector level. Identifying and profiling these local leaders and champions presents a greater likelihood of other local industries adopting new technologies by following or copying these role models. Similarly, public-private partnerships and related policies should be designed to include facilities which encourage continuous interaction and exchange between a wide range of local stakeholders such as researchers, entrepreneurs, policymakers and financial institutions.

Share Information About Existing Technologies and Innovations

Information about innovation is not usually free or widely available. Therefore, policies and efforts

towards technology transfer need to make extensive use of a wide range of communication channels to ensure that information promotion and diffusion component are embedded in public-private partnerships. Transactions in technology transfer require the involvement of local institutions and experts who can play a critical role of bridging the managerial capacities needed to identify, absorb, disseminate and assimilate context-specific knowledge and technology required for a successful transfer.

Foster Knowledge Translation and Intermediation

Several technologies and knowledge requirements in African economies such as agricultural tools, machinery, improved seed varieties, policy formulation, mining and engineering equipment might need to be sourced from a combination of suppliers, actors and institutions. Governments must be able to identify competent intermediate organisations, e.g. research institutions, mining consultants, vocational training centres – who can understand local knowledge gaps. Intermediate organisations, think-tanks, research institutions can act as a managing agent, charged with the monitoring and evaluation of capacity gaps and progress, sourcing of competent agents base on private sector demands and help to enable and assure effective technology transfer.

Consider Political, Linguistic, Gender and Cultural Sensitivities

There is often a strong cultural dimension embedded within a particular technology. The transfer of technology through public-private partnerships may fail to appreciate the cultural, historical and socio-political differences between countries, sectors or even local political economies. Public and private sector actors must take into account the importance of the cultural determinants underlying the success or failure of technology transfer.

Invest in Continuous Skills Upgrading

There is a need to valorise apprenticeships, vocational training centres, and increase spending in professional and technical training programmes which builds technological capacity and learning processes to absorb and optimise the technology.

Improve access to finance and related resources that facilitate adoption of technologies

Public and private institutions should increase incentives for equity services and make efforts to reduce loan repayment burden for local and infant industries. The aim is to ensure that risk on investments is mitigated by addressing a broader set of factors that can influence innovation adoption, including education levels, patents, knowledge sharing, political stability and infrastructure. Thus,

policies need to be flexible enough to raise awareness and to permit potential beneficiaries and innovators to explore and evaluate technologies against context-specific criteria before adoption. Resources should also be channelled towards the post-adoption period (mitigating market failure) as well as promote or facilitate the adoption of new technology.



The Science Granting Councils Initiative in sub-Saharan Africa (SGCI), aims to strengthen the capacities of science granting councils (SGC) in Sub-Saharan Africa in order to support research and evidence-based policies that will contribute to economic and social development. The objectives of this Initiative are to strengthen the ability of Science Granting Councils to: (i) manage research; (ii) design and monitor research programmes based on the use of robust science, technology and innovation (STI) indicators; (iii) support knowledge exchange with the private sector; and (iv) establish partnerships between Science Granting Councils and other science system actors. The Initiative is jointly funded by the United Kingdom's Foreign, Commonwealth and Development Office (FCDO), Canada's International Development Research Centre (IDRC), the Swedish International Development Cooperation Agency (SIDA), South Africa's National Research Foundation (NRF) and the German Research Foundation (DFG).



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