



# Introduction to Innovation Policy for Developing countries

## Module 02: Case Study

### Tanzania – A Case of Pragmatic Innovation



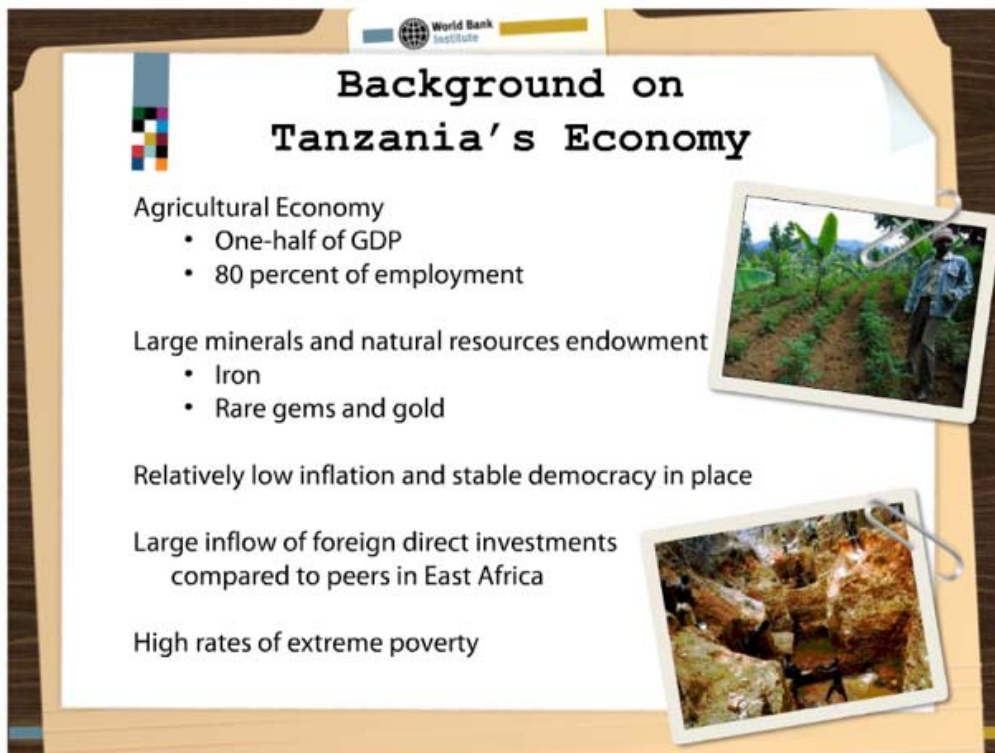
### Screen 2



Before digging in to the details of innovation in Tanzania, let's take a moment to step back and explore the country's socio-political landscape. Click on the economy to begin.



#### Screen 3



Tanzania, located in East Africa, has enjoyed stable growth and macroeconomic environment since economic reforms in the 1990s. Agriculture remains as the largest employer and greatest contributor to income for the majority of Tanzanians. The recent boom in global demand for commodities, in particular, industrial metals which Tanzania has in great abundance, also helped to increase growth in the economy.

With a relatively stable macroeconomic and political environment, and a large amount of natural resources, Tanzania has enjoyed larger inflows of foreign direct investment over the past decade compared with its peers in East Africa.

At the same time, however, the country is still a poor nation, with GDP per capita averaging only \$560 a year, and has a large proportion of its population living below poverty lines. In addition, the degree of industrialization remains low, and strong protection measures are in place to shield domestic industries and manufacturers from foreign competition.



### Screen 4



Click on the institutional environment to continue.





#### Screen 5

The slide is designed to look like a folder with a World Bank logo at the top. The title is 'Background on Tanzania's Institutional Environment'. It lists three main areas of concern: 'Democratic Regime – Stable but with Issues' (with sub-points: Poor business environment, Poor bureaucratic outreach in rural areas, Low transparency and governance), 'Poor Infrastructure' (with sub-points: Low electricity penetration, Poor transportation infrastructure), and 'Inefficient Financial System'. Two photographs are attached to the slide with paper clips: one showing a group of people in a rural setting, and another showing a heavily overloaded truck on a dirt road.

Tanzania maintained its democratic regime and is one of the few East African nations where democracy managed to endure. This political stability gives Tanzania a favorable base for investors and innovators. However, Tanzania, like many other developing nations with similar income levels, also suffers from major institutional flaws such as lack of transparency, and the ineffectiveness of government programs in rural areas.

In addition, physical infrastructure remains poor in many regions; low electricity penetration, poor transportation infrastructure, and a lack of Internet access are among the greatest bottlenecks to economic growth in Tanzania.

The financial system and financing regime for private enterprise in Tanzania were also incomplete, resulting in inefficient allocation of resources that, in combination with other institutional problems, creates a poor environment for businesses and innovators.



Screen 6



Click on the innovation landscape to continue.



#### Screen 7



Despite its many institutional problems, Tanzania has in place a program for innovation, and grassroots innovation from local entrepreneurs is taking place very frequently. Hence innovation in Tanzania is in its infancy, and is an evolving phenomena.

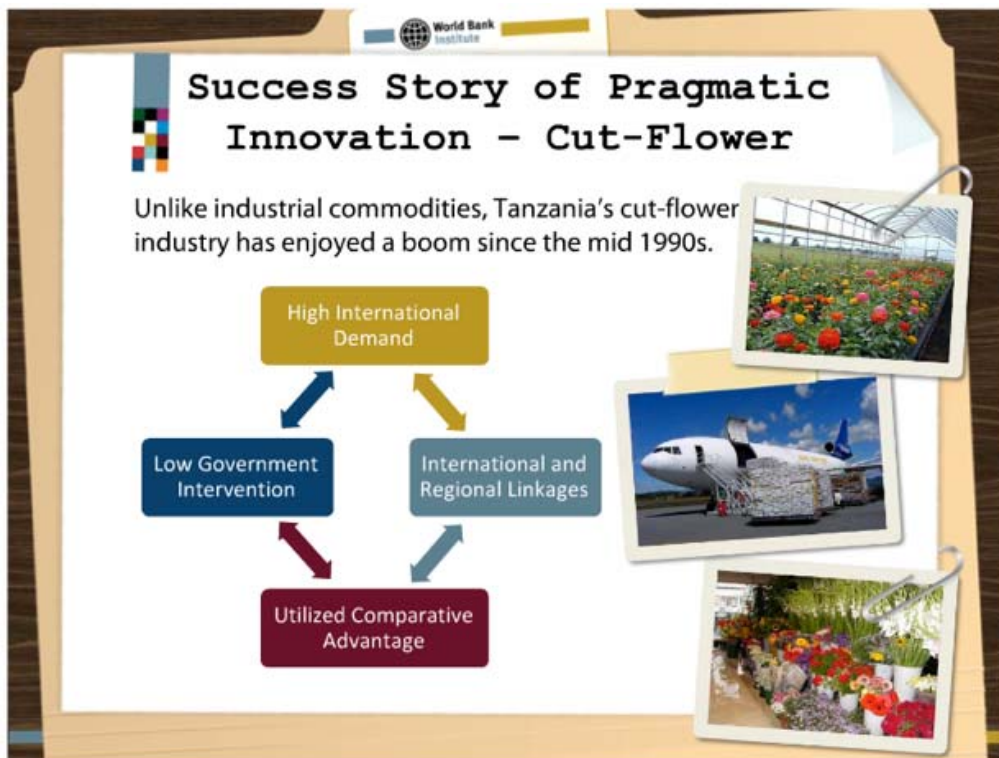
Currently, the country has established the Commission for Science and Technology that took lead as the driver for innovation through fostering research and development in the country. In addition, the ministry of education, and other government agencies are also in the process of reform.

On the private business level, entrepreneurs are fairly active in certain sectors within the Tanzanian economy. These innovators have contributed to the rise of several industries in Tanzania such as fisheries and cut flowers. Overall, Tanzania's innovation landscape is dominated by pragmatic innovators who seek to identify opportunities in the country and develop innovations that best suit the needs of the local economy.

Let's take a closer look at one of the two examples of successful pragmatic innovation. Click on the file folder labeled Success story to continue.



#### Screen 8



The success of the cut-flower industry in Tanzania, beginning in the mid-1990s, has been facilitated by a combination of factors that is emblematic of the impact of innovation on growth. And how exactly did the cut-flower industry takeoff in Tanzania?

Initial producers in Tanzania were able to tap international linkages and gain access to overseas sources of technology and capital. A key-facilitating factor was that foreign firms with essential know-how were permitted to come to the country and provide the crucial ingredients that allowed the industry to take off and become competitive in a world market.

Growth in interregional linkages involving technology transfers and the physical movement of people further contributed to the development of cut-flower exports. Moreover, the cut-flower industry utilized Tanzania's comparative advantage, that it is abundant in water, land, and cheap labor.

Lastly, in contrast to most other agricultural crops in Tanzania, there has been very little government involvement in the floricultural industry; the government has neither given special consideration to the cut-flower industry nor provided intensive services to it. This highlights the fact firms are at the center of innovation, and government policies serve to support private sector players in the innovation systems.





#### Screen 9



As we discussed before, while there are examples of success among grassroots innovators in Tanzania, the overall business and innovation environment is severely hampered by a weak institutional environment.

Currently, Tanzania's innovation system lacks a strategic vision, which means that there are no holistic government initiatives that support and encourage innovation in the country. In addition, most of the resources spent on innovation are injected into publically funded research and development institutes that do not take into account local needs.

Decaying infrastructure, and weak governance makes for a lackluster investment and innovation environment that, in combination with the problems outlined before, make Tanzania's innovation system largely nonexistent and highly ineffective.

Lets take a look at an example of how inclusive innovation was hampered by a weak innovation system. Click on the file folder to view an example of a hampered innovation in Tanzania.



#### Screen 10

**When Innovation Stops- Tanzania Brick Example**

Easily compressible brick with local materials

- Cheaper than regular bricks
- Low cost of manufacturing machines
- Failure to implement due to lack of government support

The slide features a photograph of people operating a brick-making machine on the left and a photograph of a brick building on the right. A large red 'X' is superimposed over a blue arrow pointing from the machine to the building, indicating that the innovation was not implemented.

An example of how the progress of an inclusive innovation was hampered by Tanzania's unfavorable environment is characterized by the compressible brick example.

A technology that can make easily compressed bricks with local materials without cement was invented in Tanzania. This technology was very relevant for poor rural communities and the machines that manufacture such bricks costs \$450, which while not significant, is still quite a considerable sum.

However, despite its pro-poor orientation and large potential, the innovation was not carried through since no schemes exist in Tanzania to help interested individuals or communities to purchase or get introduced to the machines. As a result, this beneficial technology did not disseminate and was not able to create the impact it could have had if its implementation was supported by government policies.



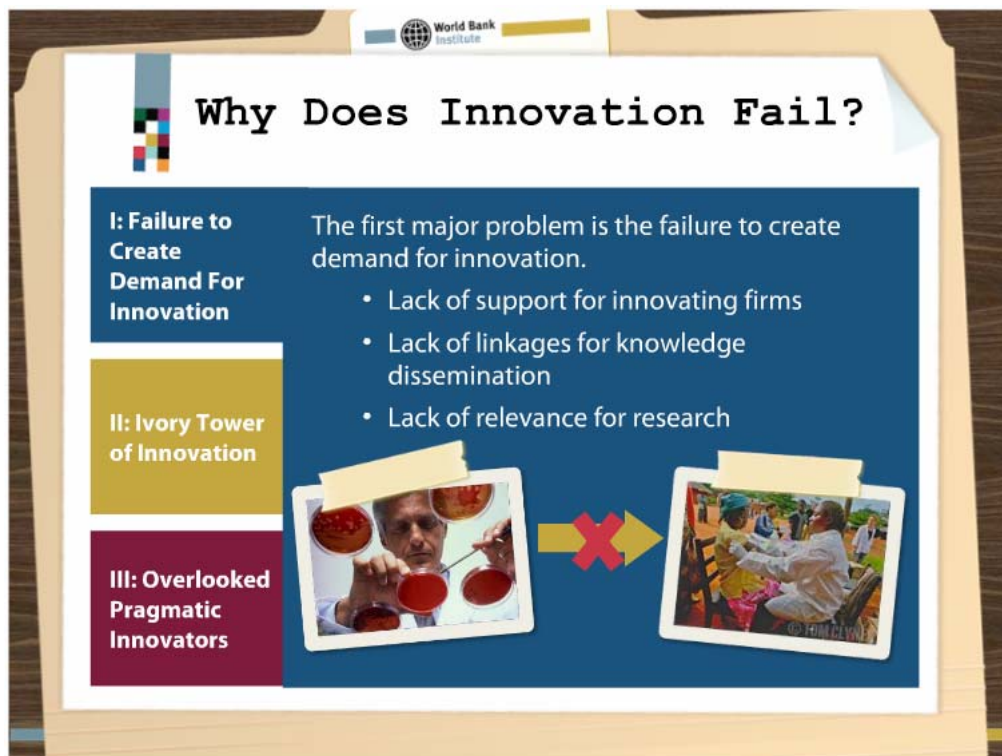
### Screen 11



Let's take a moment to analyze why some innovation's fail as was the case with the brick technology in Tanzania. We see three problems illustrated in the brick example from Tanzania.



### Screen 11 Tab 1



There is a mismatch between supply and demand for innovation in the country.

In essence, as demonstrated by the brick example, firms and their abilities to absorb technologies are at the center of the innovation system. In addition, without an effective system to disseminate knowledge and support businesses, the private sector was not able to compete and innovate. Moreover, research at the public level was also largely unresponsive to local needs. As a result of these problems, the private sector has very little incentive to absorb knowledge or innovate, which creates a fragmented and dysfunctional innovation environment where demands for innovation is low.





#### Screen 11 Tab 2

**Why Does Innovation Fail?**

**I: Failure to Create Demand For Innovation**

**II: Ivory Tower of Innovation**

**III: Overlooked Pragmatic Innovators**

The second main problem is that Tanzania treats innovation as an ivory tower of research.

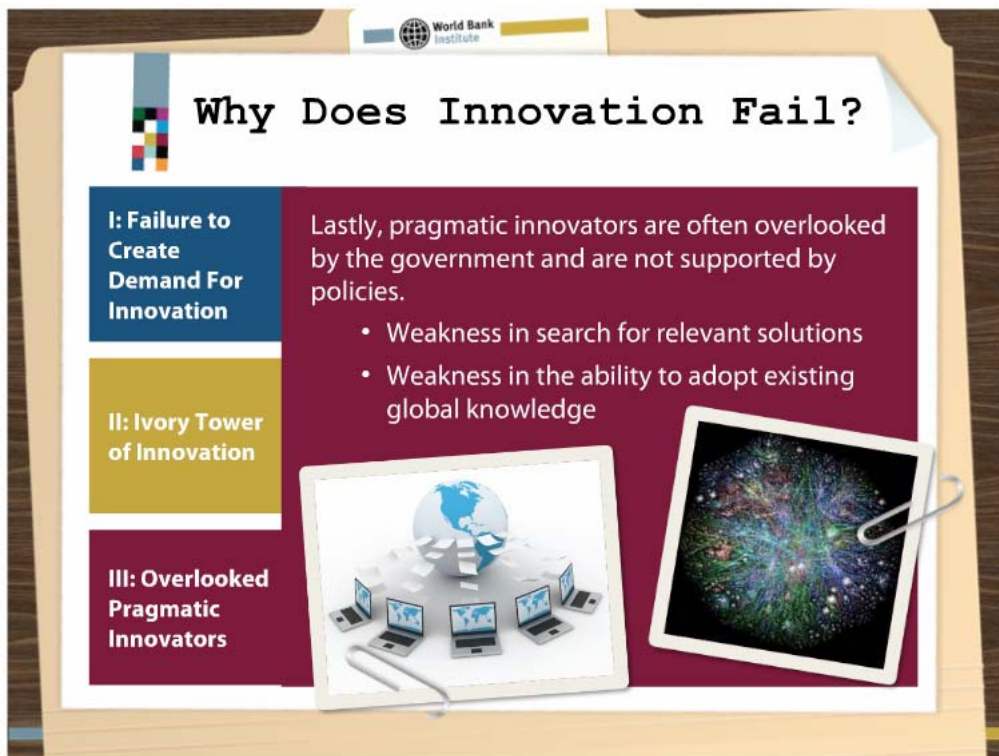
- Weakness in diffusing existing technologies
- Lack of encouragement to develop new industries
- Weakness in absorbing foreign technologies

Aside from a failure to create demand for innovation, Tanzania also sees innovation as a function of mainly research and development. The country pours large sums of investments into publically funded research and development programs that are of little relevance to the country's economic condition, and does not pay too much attention to knowledge diffusion and implementation.

Instead of viewing innovation as the diffusion of a new or improved technology or practice in a given context and not in absolute terms, Tanzania sees innovation as research and development centric. As a result, it failed to promote new industries, based on foreign and domestic technologies, to generate growth and income.



#### Screen 11 Tab 3



The last major obstacle in Tanzania is the fact that innovators are often overlooked by practitioners in the country, which dampens innovation in the country.

Tanzania faces the paradox that although the country has a significant number of pragmatic innovators, they are overlooked by many of the bureaucrats as indicated by the brick example. As a result of a lack of funding and support, these innovators remain small and cannot have access to the appropriate financing needed to succeed.

Moreover, the government policy tends to equate research and development with science and engineering innovation. However, at Tanzania's level of development, these types of innovations are often of little relevance to the country and instead, grassroots innovators who tap international knowledge in search for relevant solutions are often absent from policy debates.