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Stimulating Demand for Innovation in Rural Areas; Brokering Innovation and Building Sustainable Agribusiness

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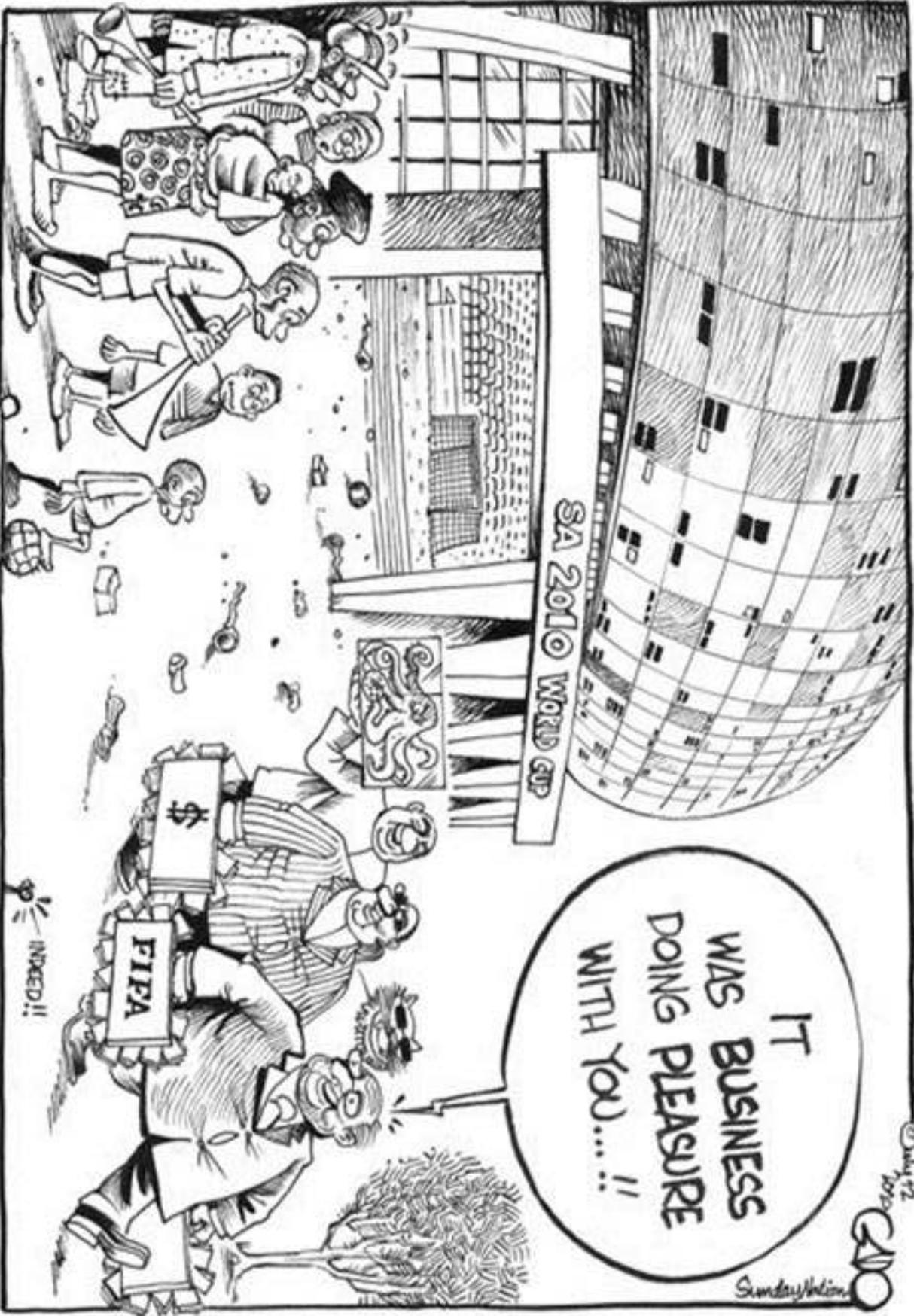
[Dar es Salaam Tanzania](#)

1.1 Key concerns

- **Africa is under pressure to catch-up**
 - ✓ *Poverty alleviation is now a global target – it is an MDG.*
 - ✓ *Hence, African countries are asked to **design** and **implement strategies** to influence how their economies perform.*
 - ✓ *This means to **induce** and **manage** innovation processes towards reaching desired targets.*

- **Subsistence agriculture is dominating**
 - ✓ *About 80% of all farms in Africa are small (< 2ha) producing very **little marketable surplus** which is a disincentive for investment in innovation.*
 - ✓ *They are subsistence farms characterised by a **low-external input level** and low productivity (per land and /or per labour).*
 - ✓ *Are concentrated in rural areas where **transaction costs are high** thus prohibiting emergence of sustainable agribusinesses.*
 - ✓ *According to economists, subsistence agriculture is inefficient and uncompetitive mode of production, which tends to hold down economic growth and economic performance mainly due to its **low innovation capacity**.*

Do we know things well at start?.....



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Introduction

- The role of new knowledge and technology in rural development cannot be over emphasised.
- For 50yrs now, there has been significant investments in knowledge generation and in technology development but adoption has remained low specifically in rural Africa.
- On the other hand, linear approaches to technology transfer and knowledge dissemination have not generated the desired impact.
- Seemingly, system thinking is argued to be the best in analysing and understanding innovation processes. However, their current use is more of ex-post than ex-ante.
- This presentation is an attempt to describe how system thinking can be used as a tool for inducing and managing an innovation process, rather than just analysing and understanding such processes. Specifically we will share practical experience from the RIU program in stimulating the demand for new knowledge and building capacities to utilise such knowledge for rural growth.

What is needed to eradicate poverty

1. *a significant number of the present poor has to change routines and innovate more.*
2. *“a critical mass” of the present poor has to shift into more productive enterprises.*
3. *sectors where the majority poor participate must strategically transform into higher productivity.*
4. *the capacity to demand, supply and utilize new knowledge among actors in the rural sectors must be upgraded (in aggregate terms).*

BUT.....

Q: What drives or constrains her demand for innovation..?



How do you stimulate a significant demand for innovation from a critical mass of her likes and bring about economic transformation among the rural poor?

.....“how do you promote innovation in a sector dominated by many players majority of whom are small and with low capacity to innovate?

Who are literally locked in a vicious cycle of low income, low investment and low production?”

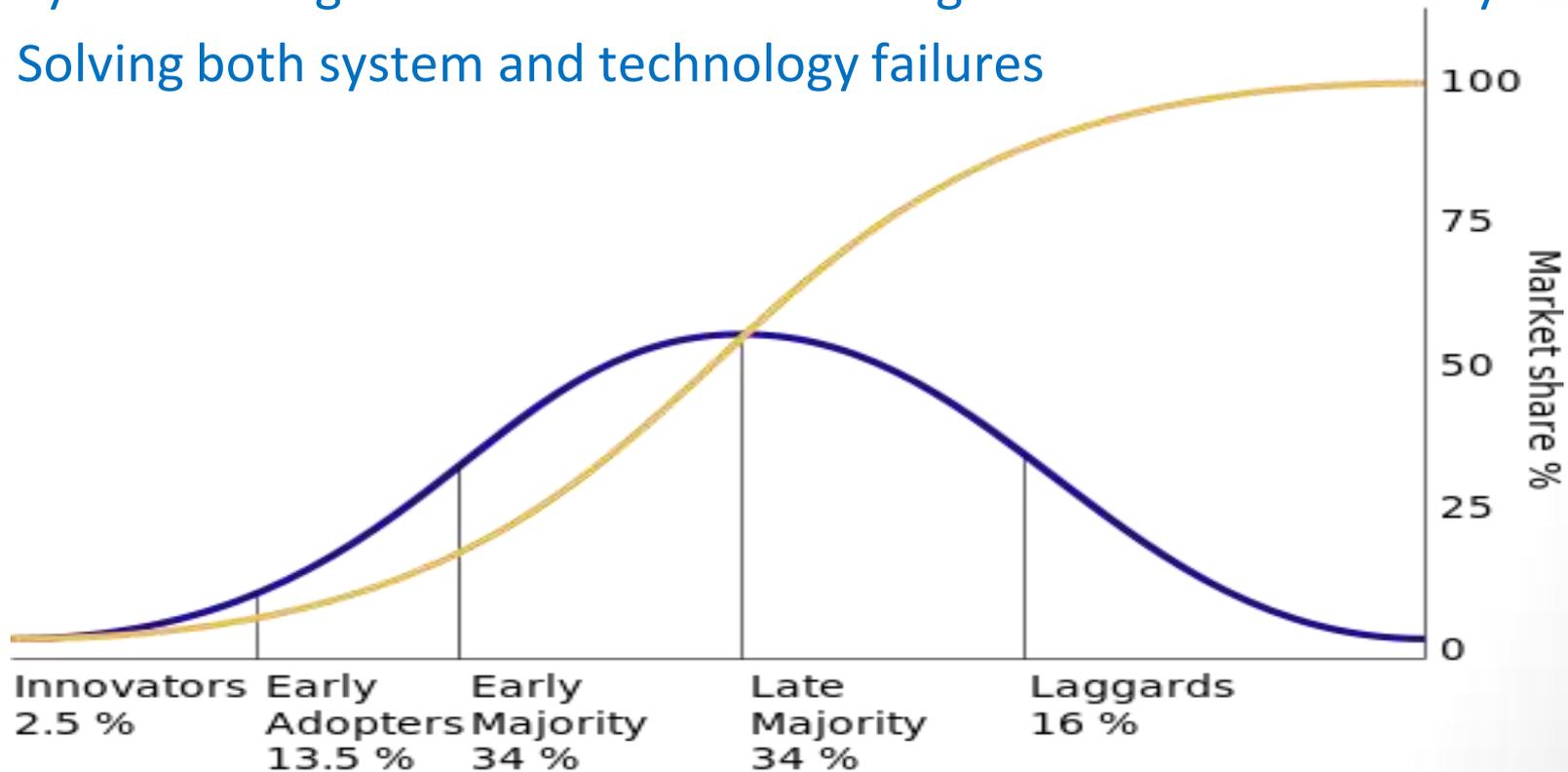
I.e. Locked in a “subsistence trap”?.....

- Can a deliberate public action induce and manage an innovation process to influence innovation behaviours of subsistence producers towards achieving broad development objectives like poverty alleviation?
- That is, to strategically influence innovation behaviours of a critical mass towards predetermined goals.
- Because, asking governments to transform their agriculture, may as well mean asking them to “customize” the S-curve (???)

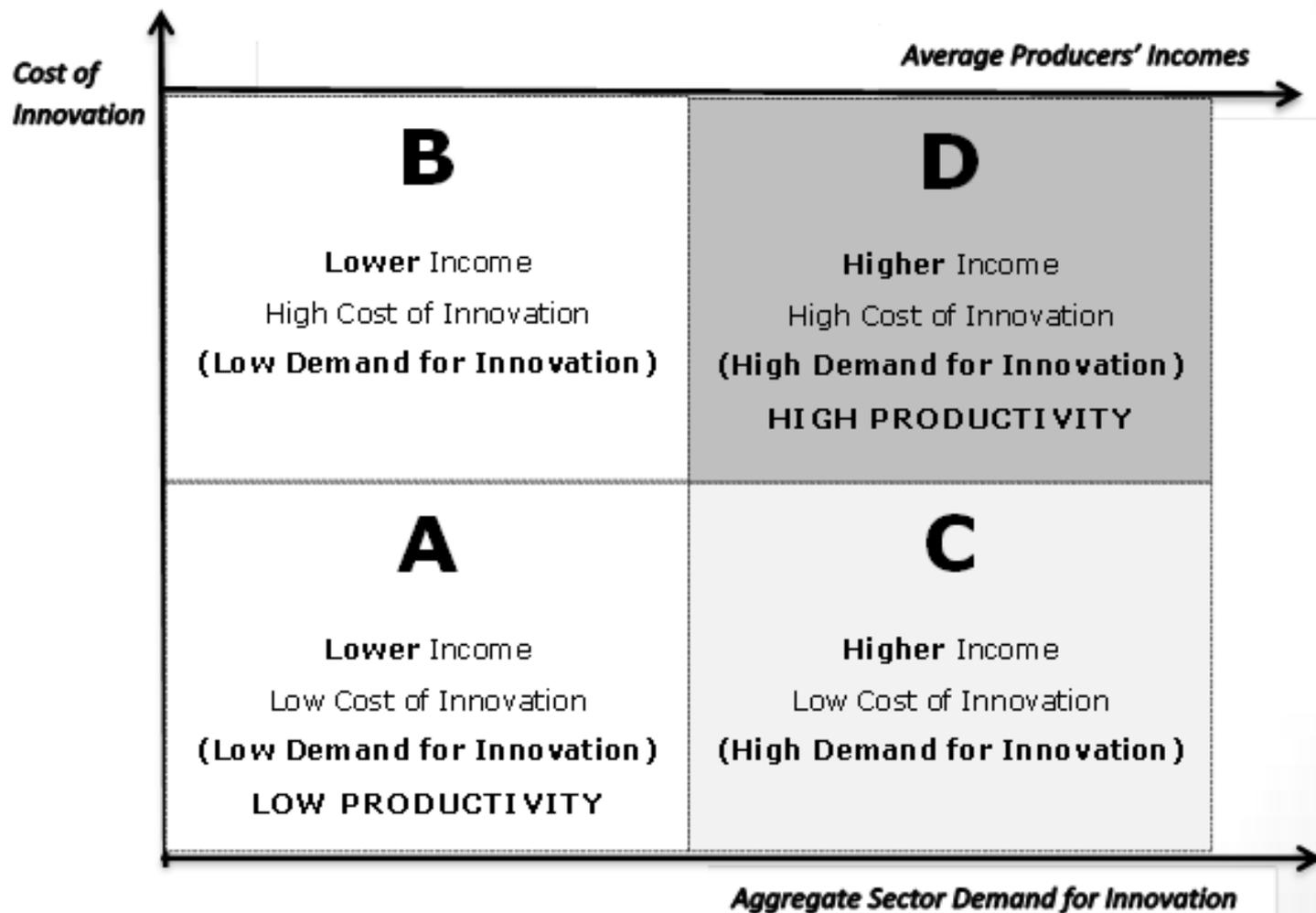
- That is, to deliberately make a **“critical mass”** of poor belong to the “early majority” and sustainably transform the sector.

This includes:

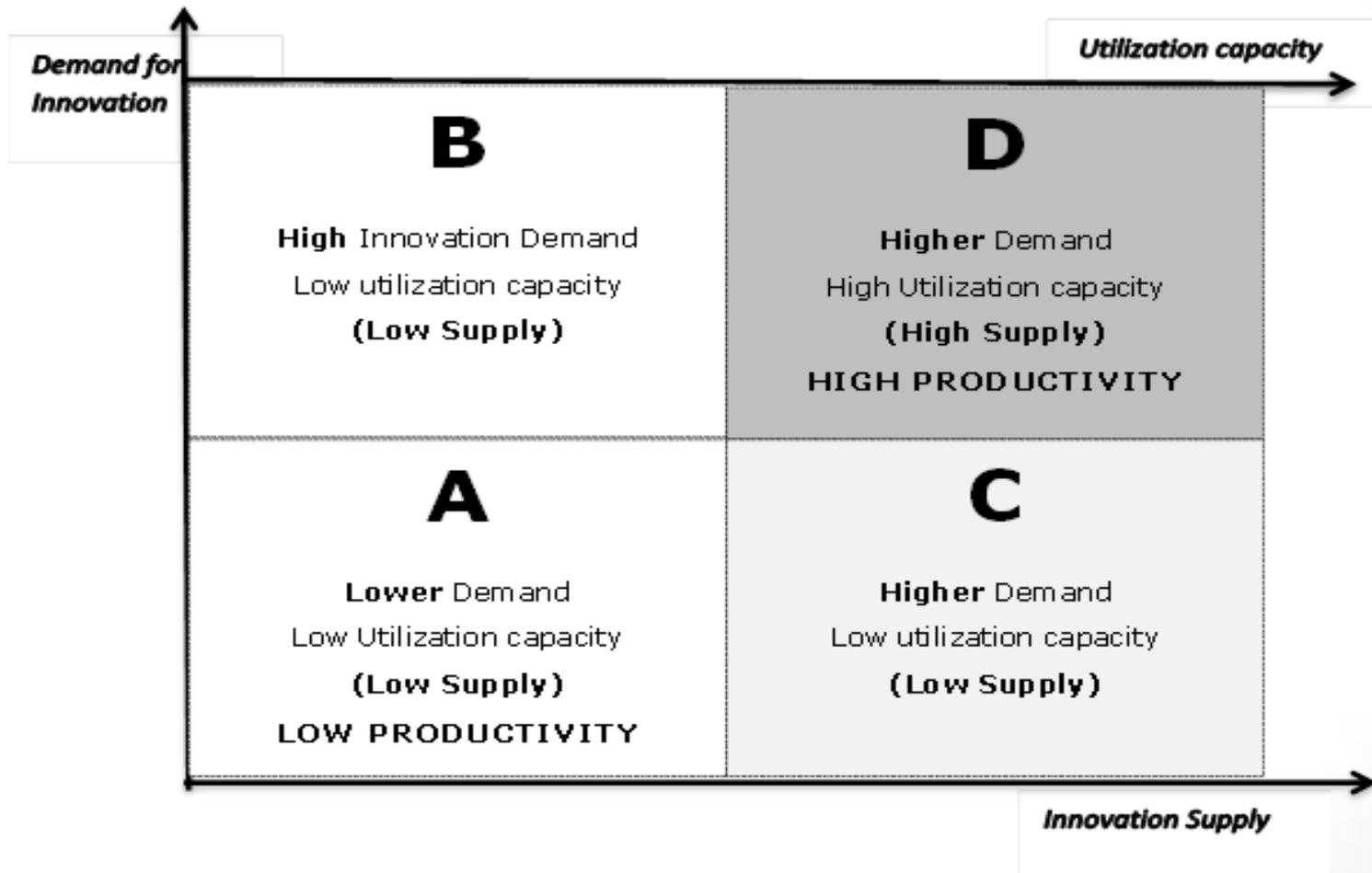
- Building systems and system capacities,
- Synchronising behaviours of the heterogeneous actors in the system
- Solving both system and technology failures



We know that, every innovation has a cost, either **directly** or **as an opportunity cost**; hence in order to increase the demand for innovation, the subsistence sector must move towards operating at higher incomes as shown below.



AND, when the demand for innovation increases, the supply of innovation and the utilization capacity must also increase as well, if productivity is to increase!



But how do you externally act to achieve that?

- Existing literature is short of empirical evidence demonstrating approaches or theories to consciously and systematically promote innovation in sectors dominated by subsistence producers to meet broad development objectives like poverty reduction.
- Most innovation studies focus on markets as drivers of innovation in agriculture, a focus which tends to bias against understanding the rationality behind decisions made by subsistence producers, hence the failure to come up with effective solutions to the persistent low agricultural innovation and productivity problem in Africa.

Moreover.....,

- Although literature shows that system thinking is the best in understanding innovation (as it gives a holistic view), it focuses more on internal interactions and stay silent on transformation process (*Izuka, 2009*).
- It does not clearly say how the approach can be used as **a tool to address poverty**; nor how systems can be built where majority of the actors are small and poor. The existing literature is more of *ex-post* than *ex-ante*.
- On the other hand, studies show that large firms innovate more than small ones-because large firms have the ability to take more **risks** and command larger **market** shares.
- ***So this presentation is an attempt to feel this gap***

Learning from the RIU project

- The commercialization process of the indigenous poultry industry managed by the DFID-funded RIU program is explored to shed light on how the demand for new knowledge can be stimulated to transform a rural sector.
- *Using an independent broker, RIU orchestrated a commercialization process as a way of promoting innovation for rural growth and managed to successfully transform the once a backyard indigenous poultry industry in Tanzania into a competitive sector which is now attractive to both public and private sector investment.*

The RIU Program

- Research Into Use (www.researchintouse.com) was a DFID funded 5-year “Action Research” program.
- Official period was July 2006–June 2011.
- Implemented in 6 African countries: Malawi, Zambia, Tanzania, Rwanda, Nigeria and Sierra Leone.
- Started in Tanzania in July 2008 but poultry activities started in Pwani region in Sept. 2009. Closed in June 2012.
- DFID contracted NRI to manage the global RIU and Muvek to manage it in Tanzania.
- Muvek (www.muvek.co.tz) is a private company focused on private sector development

Why the RIU Program?

- DFID experienced low return to investment in NR research especially in sub-Saharan Africa.
- Using evidence-based lessons on what is missing in enabling innovation in Africa DFID and other donors wanted to re-define their future support to NR research in LDCs.
- They wanted to know what works and what doesn't to maximize the poverty reduction potential of research outputs in making agriculture sectors of poor economies perform as expected.
- DFID wanted to explore the role of “innovation brokers” in commercializing African agriculture through promoting use of new knowledge/technologies. Also define the role.

The RIU Research Questions

- The RIU program was guided by one main research question investigated by exploring six overlapping innovation narratives, each with its own hypothesis and specific research question.

The question was:

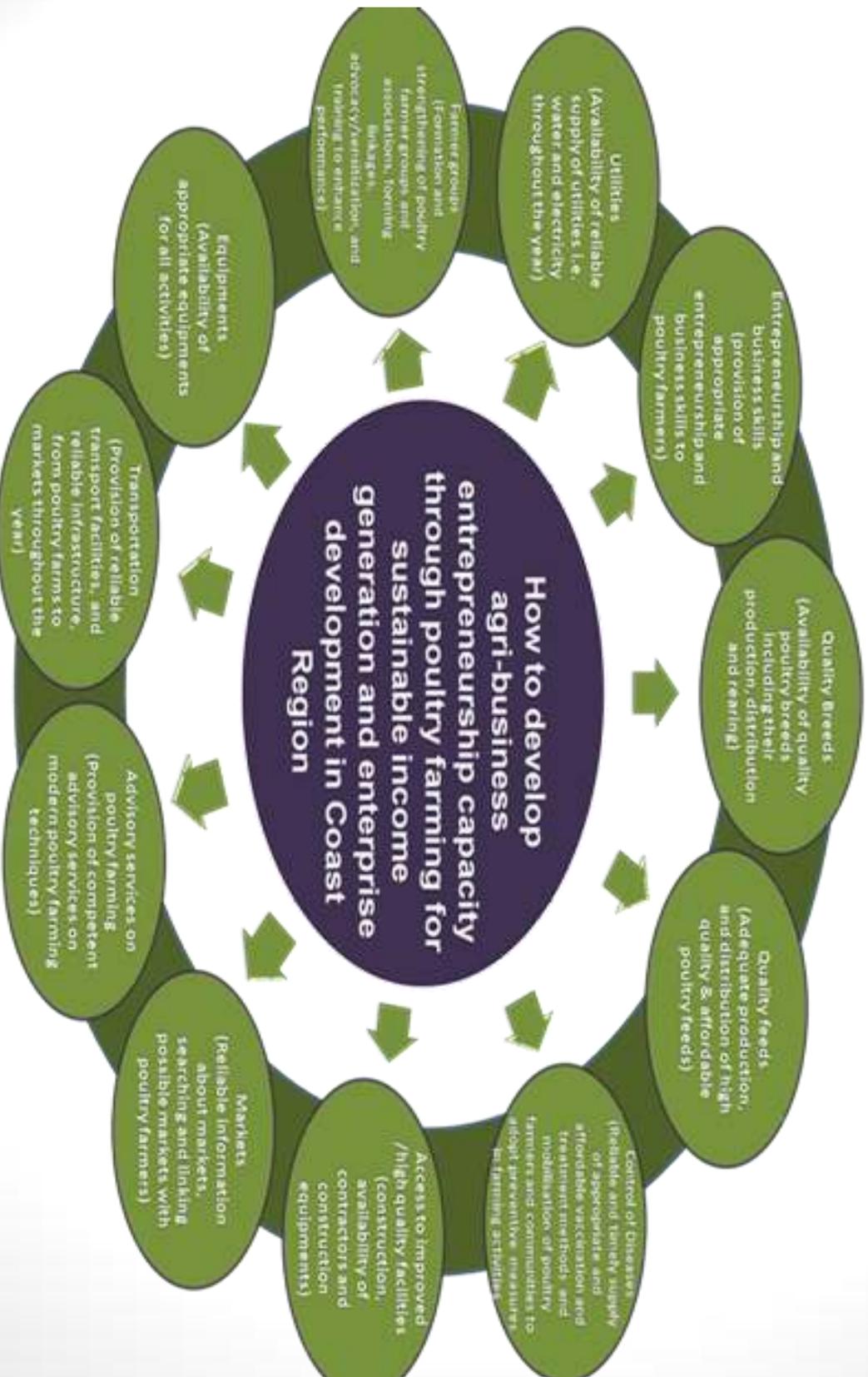
- *“What configurations of actors, policies and institutions, under what circumstances and at what point in the innovation trajectory that allow agricultural research to contribute to innovation and development?”*

How the Program worked

- **Key purpose** - to explore ways of improving local innovation capacity for increased use of research, new knowledge and technologies in developing profitable agribusiness enterprises.
- **Approach** - the programme facilitated respective stakeholders to work together to identify system blockages; experiment various solutions to overcome the blockages; exploit innovation opportunities for increased productivity and profitability; and specify learning in putting research into use.
- **Programme roles:** The program mobilized relevant stakeholders around a problem or an opportunity; Build relevant capacities; and facilitated creation of necessary linkages

RIU focused on system failures

ENTREPRENEURSHIP PROMOTION PLATFORM



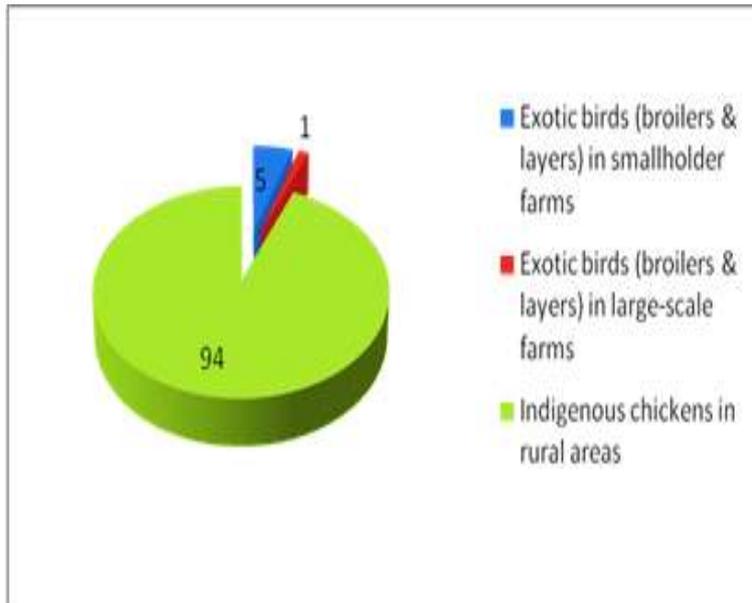
So...

- *RIU facilitated development of commercial rural indigenous poultry enterprises through building capacities of relevant support systems.*
- *The goal was to create an integrated system of stakeholders that is conscious of its needs, has access to the appropriate technology it requires and has the capacity and confidence to seek solutions for their livelihood challenges.*
- *Did a functional analysis, then conducted a stakeholder mapping to build the system. Identified actors, their behaviours, capacities and gaps.*
- *Then worked out processes to continuously identify and unblock system blockages while building relevant systems capacities towards the vision*

Implementation approaches

- Used “a bottleneck approach” with a focus on systemic bottlenecks and not technology failures. The ambition was to solve every bottleneck faced.
- Promoted private sector involvement with business as the main driver. The sector had to make business sense to justify and attract investment in knowledge & technology,
- Demand was supposed to pull supply, and where there was no demand, it had to be stimulated/created.
- All necessary partnerships had to exist, and at a win-win situation! Where necessary relevant capacities were built to make the weaker partner viable for the partnership.

The poultry industry in Tanzania: Overview



- Two systems-intensive and extensive (traditional)
- >94% of poultry birds are indigenous kept under traditional system
- >66% of HHs in Tanzania keep indigenous chickens

- Rural chickens satisfy 20% & >98% of the urban & rural demand for eggs and meat respectively.
- 1961 - 1967 - no poultry development policy in Tanzania.
- In 1967 the Government started to regulate the sector with a strong bias towards promoting commercial production of exotic breeds through semi-intensive and intensive production systems in urban and peri-urban areas (Kaijage, 2011).

Not every action promotes innovation

- Factors considered by the GoT to constrain development of the industry in Tz have always been:
 - ✓ *Prevalence of diseases,*
 - ✓ *Poor quality feeds,*
 - ✓ *Inadequate technical support services,*
 - ✓ *Low genetic potential of the local breed, and*
 - ✓ *Weak farmer organizations.*
- Hence strategies put forward to improve the industry have always been:
 - ✓ *Use of improved breeds for crossbreeding purposes,*
 - ✓ *Operationalisation of programmes to control diseases,*
 - ✓ *Promotion for the establishment of breeding (parent and grand parent) farms and hatching facilities*

Policy mismatch?....

- The Tanzania National Livestock Policy of 2006 is very clear on GoT's desire to develop a commercialised and competitive poultry subsector by 2025.
- However, GoT is inclined towards promoting commercialization of improved breeds.

This choice of inclination was informed by research on:

1. *socio-economic benefits of large-scale commercial production of exotic breeds (Grobbelaar et al., 2010; Rodríguez et al., 2011); and*
2. *documented advantages of vertical integration as a contemporary poultry management system.*

However, this approach does not promote equity.

A BIT OF HISTORY: Chickens were first domesticated not for eating but for cockfighting. Until the advent of large-scale industrial production in the 20th century, the economic and nutritional contribution of chickens was modest.



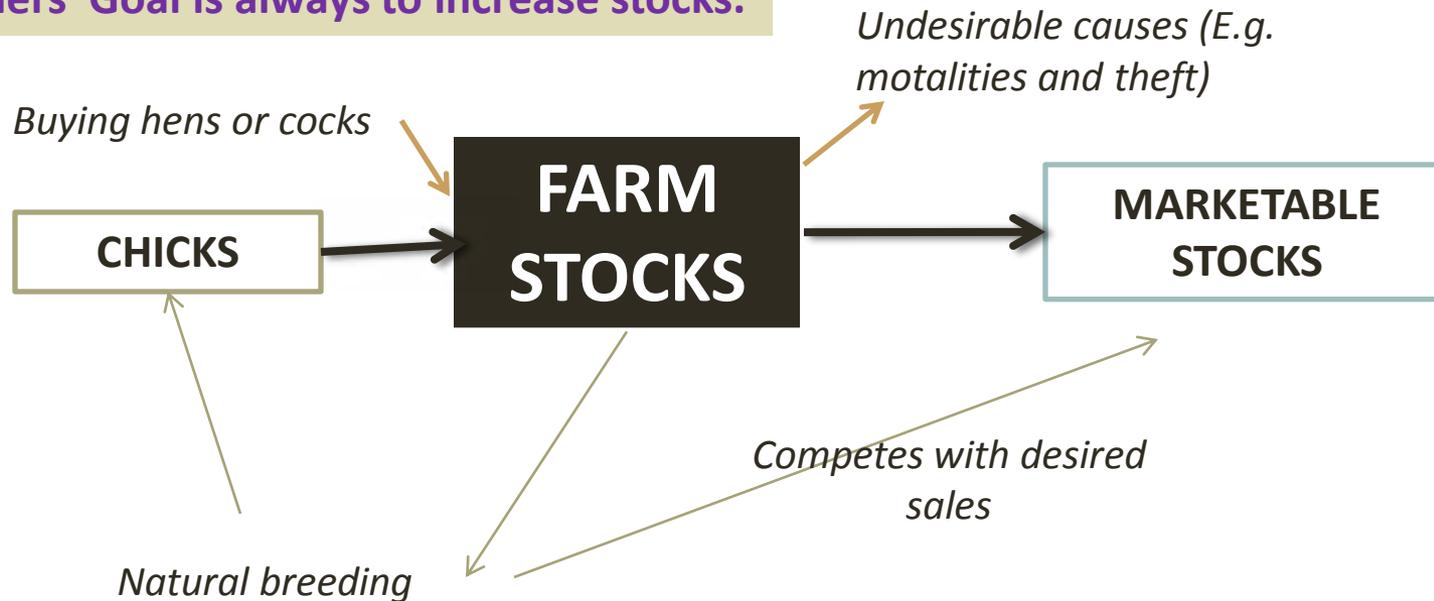
Initial selection was therefore based on feather colour and morphological variant.

- *Its only later did man start to use domestic chicken as food.*
- *It is in the 1950's when the "meat-type" and the "egg-type" commercial stocks we have today were produced after intensive artificial selection of economic traits mostly done in the 'west'.*

And its unfortunate that these two breeds of chickens are now the focus of poultry development all over the world. It is now about making them; gain more weight quickly, mature early, lay more eggs, not fall sick, occupy less space but still produce more

Lets think in systems..

Farmers' Goal is always to increase stocks.



SO: Natural breeding does not favour sales. Hence any innovation without changing it will not favour income.

Can 'experts' steal opportunities..?

Like most poultry development specialists, FAO (2004) argues that:

["if production from family poultry is to remain sustainable, it must continue to emphasize the use of family labour, adapted breeds and better management of stock health and local feed resources."]

In other words it should continue to operate under low-input-low-output system.

However, FAO further argues....

That this does not exclude the introduction of **appropriate** new technologies, and which **should not be sophisticated.** I quote

[".... However, technologies involving substantially increased inputs, particularly if they are expensive (such as imported concentrate feeds or genetic material) should be avoided. This is not to say that such technologies do not have a place in the large-scale commercial sector, where their use is largely determined by economic considerations."]

Stereotyping??

- The FAO report concludes that transcending existing low innovation capacities makes family poultry unsustainable.
- Hence kind of condemning the industry to low technology and innovation levels in the name of sustainability.
- This happens even when the rural poultry accounts for about 90% of the total poultry population in Africa (FAO, 2004), and involving almost 85% of all households in sub-Saharan Africa (Gueye, 1998 and Branckaert, 1999, citing World Poultry 14: in FAO, 2004).,

The concern here is therefore the *interpretation of the terms “appropriate technology” and sophisticated technology* and their implications to choosing development strategies.

The Dilemma...

*Leave it to the market forces!!
Be environmentally friendly!!*



Eradicate poverty by 2015!!

Don't impose!!

Catch-up!!

Close the digital divide!!

**Simple/Low
Technologies**

*Appropriate,
Adaptable
to fit
existing low
capacities*

**Low
productivity**

AFRICAN GOVERNMENTS

DEVELOPMENT ACTORS



**Sophisticated
Technologies**

*Inappropriate,
too costly,
not adaptable
to fit existing
low capacities*

**Low
productivity**

*OR.. Should I
upgrade existing
capacities?*

*Should I
simplify
technologies?...*

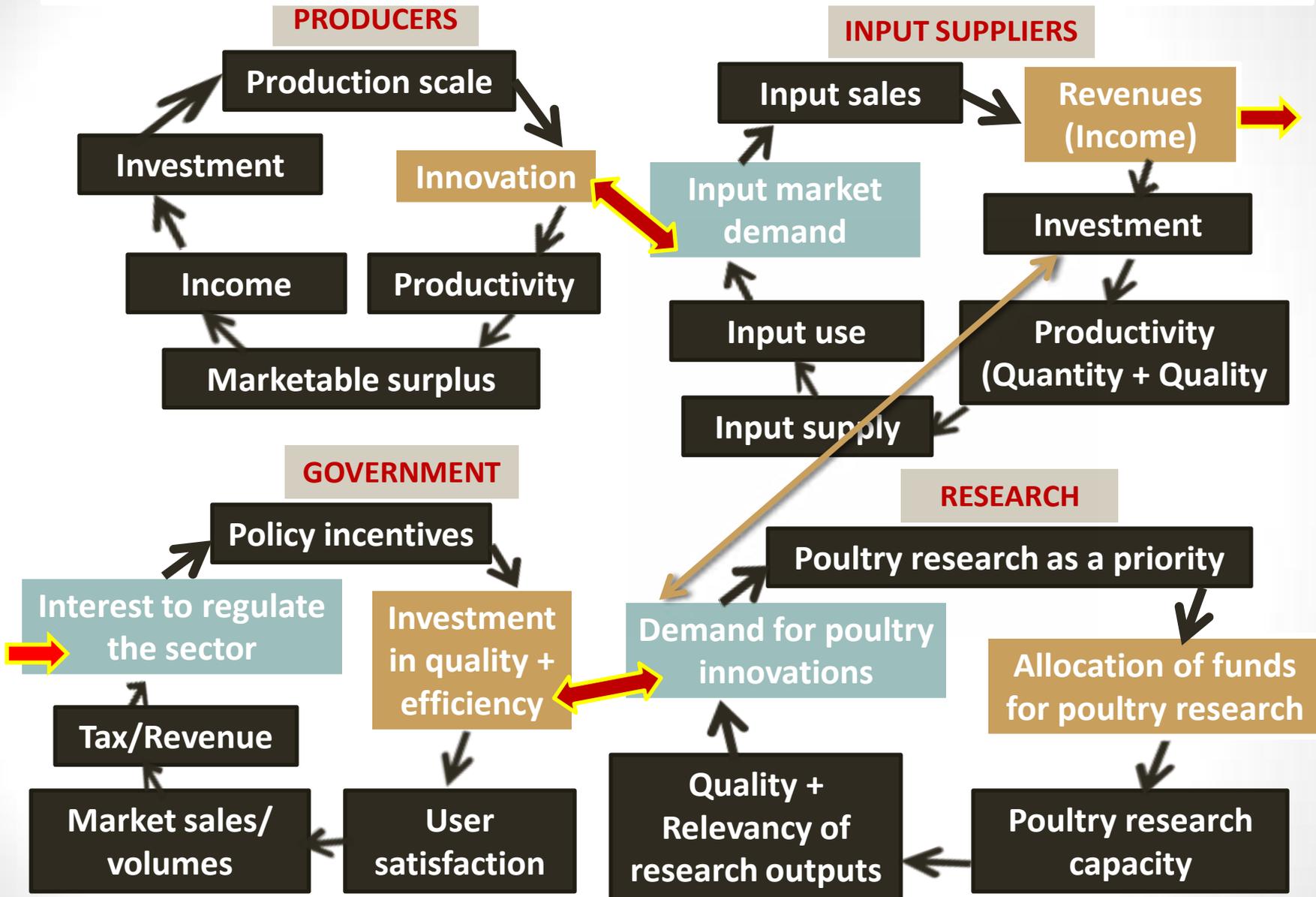
What RIU did...

- The first step was to identify actors and analyse their individual and collective behaviours, and how they affect each other's behaviour; as well as the overall system behaviour. Then identified entry points towards changing the routines.
- Identified reinforcing loops and broke vicious cycles.
- Met the cost of changing attributes that hindered innovation processes.
- Built relevant systems through linking actors and backing up negotiation processes.
- Built relevant capacities to respond to changes in behaviours within the system.

For example.. (Linking farmers & Hatcheries)

- Farmers relied on natural breeding because they lacked information about and access to commercial chicks.
- Chicks producers did not invest arguing there was no demand.
- When the two met-the negotiation process was difficult because of the differences in power. Both relied on the broker to build TRUST.
- When the deal was done, the chick producer could not meet the demand. He faced challenges associated with producing at full capacity. The broker had to build the hatching capacity.
- There was a supply delay when the hatchery was investing and absorbing the new capacity. So the broker had to create a tentative system to sustain the energy within the system awaiting for the new investment to mature.
- Existing regulatory frameworks were biased towards exotic breeds-hence negatively affected the upcoming hatcheries producing indigenous breeds..

Example behavioural relationships among different actors in the systems



What RIU did.. (cont)

- Mobilized stakeholder and conducted system analysis
- Found that volumes handled across the chain were not enough to stimulate investment/growth,
- Sensitized farmers to progressively increase their production in order to justify investment in improved poultry management practices and consequently stimulate investment in service provision.
- By increasing production scale starting with 100 chickens, the industry went into a “demand-shock”
- And RIU has since then been busy building capacities to respond to this new demand while helping farmers to grow.

As a broker, RIU...

- Pushed farmers into new scales then built capacity to manage new scales,
- Stimulated interactions through initiating negotiations and building trust. Hence created linkages and partnerships-all key partnerships had to happen.
- Promoted learning and experimentation
- Managed feedback delays-created backups in the system background
- Filled structural gaps-temporarily waiting for an actor to emerge,

Conclusion

- In order to promote inclusive growth-the poor must be supported to gain the capacity to demand and utilise new knowledge through a rigorous process of facilitation, brokerage, subsidising and risk cushioning as they go through the experimentation process.
- Brokering innovation is very important where a critical mass is needed to innovate at the same and transform a sector. Transaction costs must be lowered through mobilising volumes and the weak must be upgraded.
- Production scale is critical in justifying the cost of innovation. Changing scales is therefore inevitable in most cases. Large firms innovate more.
- Inducing and managing innovation processes among the poor is a public cost since both individual and system capacities have to be built. Else reinforcing loops will not be altered.

Thank you



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