

Putting Public Private Partnership in the Mainstream of Commercial Expansion of Indigenous Poultry Industry



Policy Brief 4

About the policy brief

This policy brief looks at how public private partnership can be mainstreamed in commercial expansion of the indigenous poultry industry. It mainly focuses on promoting innovation; improving coordination among different actors in the sector and the necessary inter-sectoral linkages; flexible financing to increase investment from poor actors; and deliberate move to solve specific problems holding the sector back from being fully commercialised; as strategic areas for public private partnership in transforming the indigenous poultry industry into a viable commercial enterprise. It also underscores the importance of resource sharing, risk distribution and reward allocation, as fundamental principles for building sustainable public private partnerships. It also emphasises the need for sound institutional arrangements to make such partnerships work.

Thus, the policy brief recommends promotion of innovation brokerage as a form of public private partnership in addressing the indigenous poultry industry's innovation needs and articulating the commercialisation vision and corresponding demands in terms of technology, knowledge, funding and policy; facilitating institutional linkages and business relationships between key stakeholders; and managing the innovation process to enhance alignment in the often heterogeneous networks and ensure that the networks are productive and sustainable. The policy brief also advocates for public financing of poultry contract farming schemes as a strategy for stimulating private sector investment in the indigenous poultry industry as well as to ensure that small rural producers are facilitated to invest and participate in the sector in a commercial way-without this kind of support, small producers will be left out as the sector expands; and effective coordination of different development programmes working in the poultry subsector, so as to minimise duplication of efforts and ensure optimal utilisation of the available limited resources for taking the subsector to large-scale commercial production. Finally, public investment to deliberately solve specific problem facing the sector, and problems which are beyond what the private sector can do to have a sector-wide impact, is largely recommended.

Why public private partnership?

Public-private partnership is increasingly viewed as an effective strategy for leveraging resources for development. It is a method of service delivery that involves the private sector in provision of traditionally public services. It adds value to interventions by creating synergies between public authorities and private sector companies and facilitates integration and cross-transfer of public and private sector skills, knowledge and expertise. It also ensures that innovation and diversity are injected in provision of public services.

Public-Private partnerships are also useful in meeting the initial social cost of establishing minimum institutional and organizational arrangements which are necessary to stimulate and sustain meaningful transformative innovation processes in sectors dominated by subsistence actors. External support coming from both private and public actors is very important when promoting innovation in subsistence sectors which are widely known for their inability to experience economically significant innovation because existing technologies, practices and arrangements (both institutional and organizational) are often adapted to conditions of low production and marketing. These features are known to be a disincentive for any meaningful innovation process thus in the absence of rapid change of scale to trigger higher market demand and investment, an endogenous alteration of current techniques and arrangements is neither desirable, nor feasible. Hence there is a genuine need for a deliberate injection of financial and technical support until a significant number of actors escape the cycle of low production, low marketable surplus, low income and low investment.

In 2009, the Government of Tanzania developed the first National Public Private Partnership Policy with an aim of contributing to national development and poverty reduction objectives. The main objective of the policy is to promote private sector participation in provision of resources for public-private-partnership enterprises in terms of investment capital, managerial skills and technology. The policy also describes public private partnership as a corporate venture built on the expertise of each partner that best meets clearly defined public needs through most appropriate allocation of resources, risks and rewards.

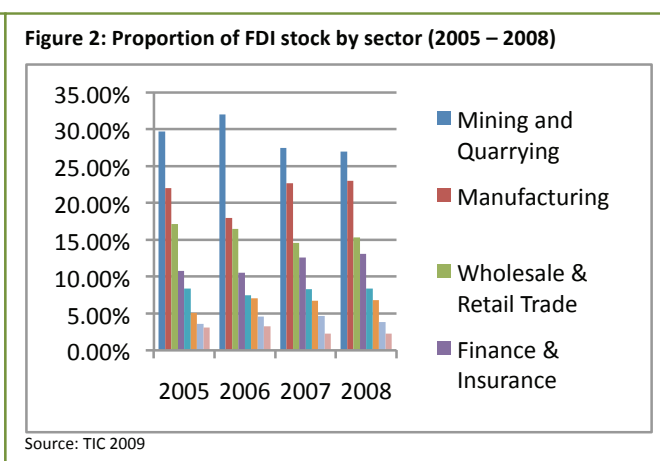
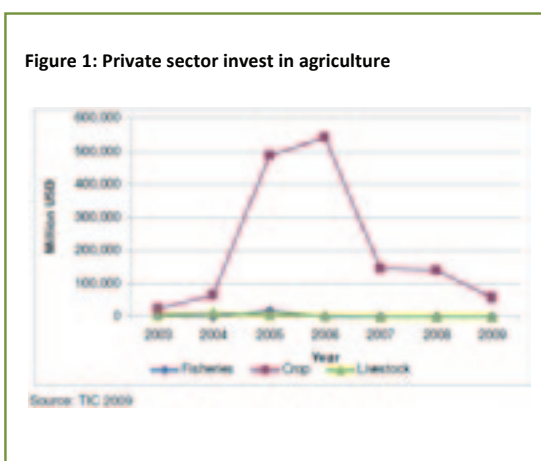
Is public private partnership necessary in poultry development in Tanzania?

Poultry farming is one of the predominant economic activities in Tanzania, practised by 66% of livestock-keeping households. It is a common source of livelihood in especially in rural areas. The poultry subsector is divided into traditional and exotic production systems. The rural-based traditional system is the largest, contributing 94% of total chicken population and supplies most of the poultry meat and eggs consumed in rural areas and about 20% in urban areas. Commercial production is mostly practiced in urban and peri-urban areas.

Over the period 1995 to 2003, the poultry subsector grew at annual rate of 2.6%, principally as a result of an increase in the indigenous chicken population which grew at a rate of 4.3% per annum between 1999 and 2003. Between 2002 and 2006, indigenous egg production also increased from 790 million to 1.8 billion. The increase was associated with sensitisation on good poultry husbandry practices and use of thermo stable Newcastle Disease vaccine (FAO, 2007). By 2008, the indigenous poultry industry was estimated to be worth about Tsh.140 million (approximately 117 million USD).

The slow growth rate of the indigenous poultry industry is largely associated with poor poultry husbandry as chickens are mainly kept under the free-range low-input management system; low scales of production with 94% of poultry-keeping households rearing less than 30 chickens each, while only 3% of the households keep more than 40 birds each; limited agro-business due to the stumpy production scales; poor infrastructure and weak market systems especially in rural areas; and inadequate coordination of stakeholders at all levels. These factors have made the indigenous poultry industry generally unattractive for substantive capital investment by the private sector.

The situation is made worse by the general trend of private sector investment in agriculture. A report by Tanzania Investment Centre (TIC, 2009) showed that the private sector’s investment in agriculture remained low between 1997 and 2004 though some improvements were registered in the crop subsector between 2004 and 2006, followed by a decline between 2008 and 2009. Livestock and fisheries subsectors remained constantly low for most of the period (see Figure 1 below). The report further showed that despite agriculture contributing 27% of GDP and supporting 80% of the population, it attracted only 2.3% of Foreign Direct Investment (FDI) in 2008, compared to mining and quarrying (27%), manufacturing (23%), wholesale and retail trade (15.3%), finance and insurance (13.1%), transport and communication (8.4%), utilities (6.8%) and construction (3.8%).



Even though some development partners are making efforts to bridge resource gaps in the indigenous poultry industry development through various projects implemented in different parts of the country, inadequate co-ordination of stakeholders, both primary and secondary, remains a major constraint to optimal utilisation of the available limited resources, as most activities of the stakeholders are not synchronised and duplication of efforts is widespread. The primary stakeholders in the industry include producers, input suppliers, processors and retailers, while secondary actors include non-governmental organisations and other development partners working in different regions. Table 1 below shows a list of stakeholders working in the indigenous poultry industry.

Table 1: List of stakeholders working in the indigenous poultry industry

Intervention Area	Stakeholders involved
Promoting new knowledge use through training and provision of information, education and communication materials	Research-Into- Use (RIU), TRIAS Tanzania, World Vision Tanzania, Catholic Relief Services, FARM-Africa, KIMAS-Masasi, Global Services Corps –Tanzania, Southern Africa Newcastle Disease Control Programme (SANDCP), VETA Singida, Local Government Authorities (LGAs), BRAC Tanzania, and Rural Livelihood Development Company (RLDC).
Disease control (vaccination)	TRIAS Tanzania, FARM-Africa, Global Services Corps –Tanzania, SANDCP (Phase 2), VETA Singida, LGAs, Oxfam GB (TASU Programme), and Farm Inputs Promotions (FIPS) Africa
Improving productivity through crossbreeding with exotic/improved cocks	World Vision Tanzania, Catholic Relief Services, FARM-Africa, KIMAS-Masasi, Global Services Corps –Tanzania, LGAs, Farm Inputs Promotions (FIPS) Africa, and BRAC Tanzania
Extension support	Farm Inputs Promotions (FIPS) Africa, Research-Into-Use (RIU) and LGAs
Financing and provision of incentives to increase investment in the indigenous poultry industry	BRAC Tanzania (provides small loans to women groups) and RIU (provides subsidies and unsecured loans to poultry producers, and matching grants to input suppliers)
Breeding research	Agriculture Research Institute (Naliendele and Mpwapwa branches)
Market systems development	Research-Into-Use (RIU) and Rural Livelihood Development Company (RLDC)

What is the significance of principles of resource sharing, risk distribution and reward allocation in building sustainable public private partnerships for the indigenous poultry industry?

The RIU approach brings into perspective the following basic principles of public private partnership: (i) resource sharing (iii) risk distribution, and (iii) reward allocation which are very critical in transforming subsistence-oriented sectors.

(i) Resource sharing: It is worth noting that even as the programme provided advisory services and matching grants to hatcheries to increase production, it relied on the government’s regulatory system to control the quality of production by the hatcheries and breeder farms. The programme also used government-trained livestock production officers (household poultry advisors) and extension systems to bring extension services closer to rural farmers, while allowing farmers to house the on-site trainers as the programme provided the trainers with a basic subsistence allowance. RIU demonstrated that the principle of resource-sharing can be applied from the lowest level of the value chain in building partnerships for development of the indigenous poultry industry.

(ii) Risk distribution: With regard to the principle of risk distribution, it is instructive to note that by taking the risk of giving rural farmers unsecured interest-free loans, farmers accepted the risk of keeping much larger poultry flock sizes than they ever kept before, allowing them to develop their capacity for modern poultry management while enjoying increased income from the poultry enterprise. The bold decision to share risks also triggered scales in all directions and enabled other poultry operators including feed millers, hatcheries, processors and agro-vet dealers to benefit from higher business volumes.

The principle of risk distribution is particularly significant in light of the fact that only 2.3% of all foreign direct investment in Tanzania goes to the agriculture sector while only 7.8% of the country's GDP is allocated by the government to a sector which supports 80% of the population. Perceived risks of agricultural production, coupled with inadequate political will by the government and the private sector to explore innovative ways of dealing with the perceived risks, remain a major impediment to substantial capital investment in agriculture. By RIU giving out a total of Tsh.210 million in unsecured loans to 3,500 rural poultry farmers in form of day old chicks, the farmers immediately invested a total of Tsh.350 million in chicks alone in the first round of production¹. The investment was equivalent to two and a half the estimated worth of the indigenous poultry subsector (Tsh.140 million) prior to introduction of the programme. Thus, successful partnership between the public and private sectors in addressing the issue of financing as a fundamental need for commercial expansion of the indigenous poultry industry will require bold decisions by the government and the private sector, in embracing the associated risks and challenges while exploring potential benefits.

The program also sheds light on the importance of sharing the cost and risk of new innovation in agriculture. Like in other sectors, innovators tend to allow a period of low margin when introducing a new product in the market, so that more clients get the opportunity to know, see and try the new product at a very minimum risk. Unfortunately this is not the case in agricultural innovations where farmers are expected to bear the entire risk associated with adopting new innovations. RIU has therefore proved that, if farmers are introduced to appropriate scales (that justify the cost of innovation) and are assisted in managing the risk of associated innovations, they can adopt, adapt and finally gain the needed capacities to become sustainable innovators. It is learnt from the program that, public support is needed to unlock the potential demand for innovation locked in agricultural sectors operating at subsistence levels. This involves taking such sectors through the induction phase, to the incubation phase, then to the consolidation phase and out to the escape phase where it can continue to grow and respond to the market forces on its own. Without this committed support, the sector will always fall back into the subsistence trap.

(iii) Reward allocation: Regarding the third principle of reward allocation, the RIU approach enabled primary stakeholders in the indigenous poultry industry to build their technical capacities, increase production scales and enjoy increased income from the poultry enterprises. On the other hand, the programme managed to realise its primary objective of moving the indigenous poultry industry from subsistence to commercial production. It showed that the principle of reward allocation is all about working together towards shared objectives, hence should be the basis for future public private partnership in the indigenous poultry industry.

Consequently, this policy brief envisages that public private partnership that is driven by fundamental needs of the indigenous poultry industry including innovation, coordination and flexible financing, and powered by the principles of resource sharing, risk distribution and reward allocation, would go a long way to transform the indigenous poultry industry into a viable commercial enterprise. However, this would require sound institutional arrangements and strategic measures to facilitate and make such partnerships work.

¹The investment capital for 100 chicks was Tsh.100,000. Each farmer was asked to pay 40% of the investment capital prior to receiving the 100 chicks. RIU covered the remaining 60% as a loan to the farmers, payable upon selling mature chickens. Thus, the total investment capital in chicks alone by the 3,500 farmers was Tsh.350 million, out of which Tsh.140 million was paid by the farmers prior to receiving the chicks and the remaining Tsh.210 million was covered by RIU in form of a loan for the first round of production.

What is the significance of the ‘Innovation broker’ in transforming the indigenous poultry industry?

The RIU programme promoted innovation in the sector by assuming the role of an “**innovation broker**”. As an innovation broker, the programme upheld the vision to economically transform the sector by stimulating demand for new knowledge and upgrading the capacity of all actors to innovate. In order to achieve this, RIU had to push farmers into new scales then worked hard to address systemic challenges resulting from demands posed by the new scale as they emerged. This made RIU play different roles to ensure that all key stakeholders work together towards a common goal, and more importantly to ensure that poor rural producers do not fall back to their old ways. Some of the key roles played by RIU included acting as a: (i) Knowledge intermediary, (ii) Value chain coordinator, (iii) Shadow actor to temporarily fill-in institutional and functional gaps.

- (i) As a *knowledge intermediary*, RIU linked knowledge users with different sources. To do this RIU had to promote use of new knowledge to improve innovation along the entire value chain by stimulating the demand for such knowledge. Contrary to the common practice where development programmes tend to push new knowledge to farmers in the hope of triggering scales, the RIU programme pushed poultry farmers to new scales which in turn stimulated demand for, and use of new knowledge. The new scale justified the cost of innovation and improved practices advocated by extension agents. Farmers were mobilised through champions who had been empowered to believe in the commercialisation dream and asked to raise 100 chicks each with a plan to move to 200 and later 300 chickens. Research-Into-Use assured the farmers of technical and material support all the way to enable them manage large poultry flocks.

The support included on-site practical training using household poultry advisors²; linking farmers with local extension systems for continued technical support; provision of essential tools including poultry-keeping guide book, laminated vaccine calendar, an exercise book for record keeping, charts showing types of records to be kept, as well as basic equipment (2 drinkers and 2 feeders); and provision of subsidies in form of feeds, vaccines and essential drugs enough for one month. A total of 3,500 rural farmers joined the poultry project in the four programme regions. Their production scales increased from 5-10 birds per farmer to 100-300 birds each. The combined output by the 3,500 farmers is estimated at 30,000 mature indigenous chickens entering the market every month.

The increased scales of production triggered demand for new knowledge and extension services, as the motivated farmers were determined to see all their chicks grow to maturity. Those who could not readily access government extension services opted for private veterinary services at a fee. The demand for input supplies including day-old chicks, feeds, drugs and vaccines also increased dramatically and this too triggered demands for new knowledge in producing and distributing inputs to rural areas. Prior to introduction of the programme, only two medium-scale hatcheries were producing indigenous day old chicks and very much below capacity. However, as the implementation progressed, 12 other medium-scale hatcheries registered to start production. The RIU assisted 13 hatcheries to access improved technologies and advisory services to enable them increase production and cope with the increased demand for indigenous day-old chicks. Production capacity of the hatcheries increased from about 500-2,000 chicks per hatchery per week to 6,500-10,000 chicks per hatchery per week. This development pushed the government to start monitoring and regulating the indigenous chicken hatcheries and breeder farms to control production quality and enhance traceability and animal welfare.

²In areas where government extension services were severely constrained by shortage of skilled extension personnel, the project hired private livestock production officers (certificate holders) who had graduated from vocational training colleges with the necessary skills for modern poultry management training. The project opted for the on-sight practical training approach upon realising that the existing government extension system and the farmer field-school approach could not provide poultry producers with the mentorship required to manage large poultry flocks. The household poultry advisors stayed with farmers in their homes for 30 days, guiding them step by step on how to manage the 100 day old chicks provided project so as to ensure their survival, healthy growth and productivity. Each household advisor was assigned not more than ten farmers per village during the 30-day stay with the farmers. As the officers left the villages, farmers were linked to the existing government extension systems for continued technical support.

- (ii) As a *value chain coordinator*, the RIU focused on the indigenous chicken market development through the value chain approach. Prior to introduction of the RIU programme, no functional value chain existed in the industry. Rural poultry farmers could not produce significant volumes because they lacked relevant skills for modern poultry management, and had no access to inputs, extension services, markets and more importantly day old chicks. On the other hand, input suppliers, extension workers and marketing agents were not attracted to extend their businesses to rural areas because of low demand, as chickens were free-ranged, chicks naturally bred and the birds hardly vaccinated nor treated when sick; leading to a major demand and supply deadlock. Moreover, no formal markets and value addition existed for indigenous chicken products and transactions in the industry were nominal, informal and unrecorded.

Consequently, the programme began by mapping all major stakeholders in the industry including poultry farmers, input suppliers and extension providers to understand their individual potentials and capacity needs. The next step was to address the volumes challenge by pushing poultry producers to new scales and strengthening capacity of agribusiness suppliers to cope with increased demand for inputs, while at the same time networking with the government regulatory system to ensure quality control for poultry inputs and products entering the market.

The process went hand in hand with deliberate efforts to link poultry producers with inputs suppliers to enhance access to inputs. A voucher system was used in the first round of commercial production to enable farmers to access inputs (feeds, vaccines and medicines) from agribusiness suppliers within their localities. The system also helped stakeholders to know each other and establish business relationships. It also had a positive influence on business practices of the agribusiness dealers in terms of record keeping since availability of proper sales records was essential for redeeming of the vouchers. Input suppliers were also linked to poultry input manufacturers and wholesale dealers in towns as sources of poultry inputs. The indigenous poultry industry was therefore progressively becoming viable for business linkage with the urban suppliers. Furthermore, both rural producers and service providers were introduced to new inputs and innovations.

Regarding market access, the programme had to innovatively organise the market through filling the existed institutional gaps while allowing actors to observe and get attracted to the business. This was important because existed volumes and quality of mature chickens was yet consistent to attract investment from the private sector on the market. Therefore, RIU provided rural poultry producers with a ready market for their chickens by buying mature chickens which had reached 4 months and attained the required weight of 1.3 to 1.5 kilograms, and selling the birds in tertiary markets in Dar es Salaam. During this time RIU mobilised and organised buyers and introduced indigenous chicken products and informed them of the new volumes expected to come from farmers. Buyers were allowed to test the products with their clients and slowly the indigenous chicken became popular in the market, and stronger linkages evolved.

As the output market was evolving, the program realised that farmers were failing to re-invest for the second rounds due to several reasons including the inability to sell and gain lump sum. So contract farming was introduced through KukuDeal, a business initiative initiated by RIU to deal with overall systems challenges along the indigenous poultry value chain. Contract farming was meant to help farmers gain an immediate access to inputs needed to move into the next production cycle until the producer is strong enough to invest on his/her own. It also meant to organise procurement of quality inputs as input suppliers were continuing to invest and organise themselves to respond to the new demand brought about by the increased investment in production. This was necessary because, during this time the new investment in input supply was still immature hence input supply was still below demand.

Through these efforts, a horizontal value chain emerged in the indigenous poultry industry consisting of a network of over 3,500 rural farmers producing local chickens on a commercial scale; a chain of independently owned medium-scale hatcheries, breeder-farms and feed millers producing for the indigenous poultry industry; vaccine and medicines suppliers; and a contract farming/marketing agent (KukuDeal); all linked to the rural poultry producers.

Knowing that time is needed before the sector is strong enough to sustain itself in terms of supply and demand, KukuDeal was strengthened to stimulate and organise the indigenous poultry value chain by acting as a go-between stakeholders in various commercial activities geared towards sustainable expansion and growth of the indigenous poultry industry. KukuDeal has developed a practical model to sustain its role of developing the sector through commercialization of all enterprises with a specific focus of linking small rural producers with an effective mix of medium and large scale enterprises towards creating a vibrant poultry sector which ensures rural growth.

- (iii) As a *shadow actor*, the innovation broker had to assume key roles where no actor was ready to play them, or new roles which just emerged as a result of growth and where actors have not been established to fulfil them, or when an actor opts to exit the sector while the system cannot exist without the function. So RIU would play these roles while working to get an actor in place. For example, RIU provided rural farmers with unsecured interest-free loans in form of inputs supplies to enable them embark on commercial production of indigenous chickens because no financial institution was ready to finance them. Likewise, RIU bought all mature chickens from producers and therefore provided the market while waiting for the right volumes to attract the right marketing institutions in place. The project also provided 5 indigenous chicks' hatcheries with a total of Tsh.300 million as matching grants to procure bigger incubators, expand parent stock size, and finance some construction work. This was done when no actor was ready to lend them the necessary capital, and which significantly increased production capacities of the hatcheries.

Playing the above roles as an innovation broker was key in transforming the indigenous chicken industry into a socially and economically viable sector. In implementing RIU, the brokerage role was funded by public funds from DFID and this demonstrates the importance of the public sector in meeting the cost of this role. We recommend that the public sector funds such roles in order to transform sectors where most of the poor participate.

What strategic measures are needed for building successful public private partnerships in commercial expansion of the poultry subsector?

The Indigenous Poultry Commercialisation Project implemented by Research-Into-Use (RIU) in Pwani, Singida, Dodoma and Morogoro regions demonstrated that innovation brokerage, building strong networks and coordination among actors, flexible financing, and solving specific systemic problems facing the sector (e.g. on production and marketing) are the key interventions to releasing commercial potential of the indigenous poultry industry. This policy brief embraces these fundamental needs as strategic areas for public private partnership in transforming the indigenous poultry industry into a viable commercial enterprise.

(i) Promoting innovation brokerage as a form of public private partnership

Innovation brokerage is an emerging institutional arrangement evolving as an effective approach to promote innovation in the contemporary agriculture development processes where serious and numerous challenges including sustainability, climate change, poverty alleviation and agri-industrial development, among others, need to be addressed simultaneously. The innovation brokerage role comprises mainly of three primary functions namely demand articulation, network composition and innovation process management. Demand articulation involves articulating innovation needs and visions and corresponding demands in terms of technology, knowledge, funding and policy, achieved through problem diagnosis and foresight exercises.

Network composition involves facilitating linkages between relevant actors and matchmaking of possible cooperation. On the other hand, innovation process management focuses on enhancing alignment in the often heterogeneous networks, constituted by actors from different institutional backgrounds and reference frames related to norms, values, incentives and reward systems. Furthermore, it includes a host of facilitation tasks that ensure that networks are sustained and become productive, e.g., through the building of trust, establishing working procedures, fostering learning, managing conflict and system capacity building.

RIU demonstrated that to be able to play the innovation brokerage role effectively, the innovation broker role has to be institutionalised and with sufficient access to innovation, information and resources, both technical and financial. In terms of operations, the broker needs a considerable degree of freedom that encourages institutional learning and experimentation in exploring new solutions for traditional problems and system challenges. RIU was therefore not tied to pre-determined input-output schemes and log-frame based performance indicators, but guided more by a well-defined broad vision and a number of flexible milestones which could be revisited anytime as processes advance.

With the broad vision of commercialising the sector through unblocking every systemic challenge observed, the programme focused on the principle of learning by doing, in finding practical solutions to various constraints and challenges experienced in the whole process of developing a functional value chain for indigenous poultry industry. This kind of flexibility is largely lacking in the current government extension systems and can be best exercised by a well-resourced but dynamic non-state actor trusted by both the public and private stakeholders as a neutral player in articulating innovation needs, visions and demands, as well as facilitating institutional linkages and business relationships. The inclination towards private sector is found to be useful as it allows the broker to temporarily fill-in institutional and functional gaps while facilitating establishment of sustainable solutions. This is specifically important where new institutions or functions need to be introduced in a particular sector or system, and where actors have yet been convinced to step in.

Using public resources from the United Kingdom Department for International Development (DFID), RIU was able to address innovation needs of the indigenous poultry industry and championed the commercialisation vision by facilitating multi-stakeholder interactions through the value chain approach, leading to a dramatic increase in production scales and income from the poultry enterprise. At the beginning the broker mobilised rural producers and encouraged them to move into new scales while promising them technical support all the way. Then the broker had to provide financial support to producers and rural input supplier in form of interest free loans because they were yet credit worthy to any of the existed financial institutions.

Furthermore, in order to introduce producers into new practices and innovations, the broker subsidised the initial cost of the basic poultry innovations and allowed all farmers to access and try them. While doing this, the broker had to also foster relevant linkages between different actors and wherever necessary acted as a guarantor where one partner was too weak for a particular partnership, and worked to empower the weaker partner until the partnership became viable without the broker. Since new scale meant increased investment at all levels, the broker worked with all key actors and attracted investment from the private sector which increased the demand and utilization of new knowledge and innovation. It is indeed very clear that without the committed and well-resourced broker to play these roles the sector would not have been transformed.

Therefore, based on the programme results and the growing need to move the indigenous poultry industry to large-scale commercial production for both economic and social good, public financing of such initiatives in the context of public private partnership would be desirable.

(ii) **Building innovation network, strengthening coordination of stakeholders at all levels and building system capacities**

Local poultry production is beginning to receive considerable attention from various stakeholders including scholars, policy makers, researchers and development workers, as an integral part of Tanzania's rural economy, with an essential role in improving household income and nutrition. Among the major areas of interest to the stakeholders are: capacity development through training and provision of information, education and communication (IEC) material to promote new knowledge use in modern poultry management; disease control; improving productivity of local chickens through crossbreeding with exotic or improved cocks; breeding research; extension support; market systems development; as well as financing and provision of incentives to increase investment in the indigenous poultry industry (see table 1). Consequently, effective coordination of the various activities of different stakeholders at all levels will be critical to minimising duplication of efforts and ensuring optimal use of the available limited resources for taking the indigenous poultry industry to new scales of production.

(iii) **Public financing of the indigenous poultry industry through contract farming schemes**

Limited access to liquidity is one of the major constraints to growth and development of the indigenous poultry industry. The inability of households and enterprises to access capital on competitive terms to undertake profitable investments or take advantage of market opportunities means that incomes and growth are lower than they need be. However, the RIU experience showed that public financing through contract farming schemes can stimulate private sector investment in the indigenous poultry industry and increase production scales as well as income from the poultry enterprise. It offers a unique opportunity for public private partnership in unlocking the demand and supply deadlocks (i.e. *chicken-and-egg situations*) currently facing the indigenous poultry value chain, and which have for a long time held back the indigenous poultry industry from realising its potential.

Therefore there is a need for public seed money to run contract farming and to introduce farmers to new production scales e.g. to rare 100 chicks: Introducing poor farmers to the first cycle of 100 chicks is associated with a number of risks that need to be shared between the farmer and the public sector. The first batch is basically for learning just like the first piece of cloth that a tailor uses to learn dressmaking. Although given as a loan, the recovery rate cannot be guaranteed at 100%. A substantial seed capital is also needed to contract farmers in their subsequent cycles until they are strong enough to invest on their own. Currently a sum of about 500,000 TZS is needed to provide services to each contract of rearing 200 chickens. However, this figure is expected to decrease once feed prices are lowered. From the RIU model, the seed money can revolve to reach out many farmers with negligible depletion rates if KukuDeal controls feed production quality and prices. Feed and vaccines are the main success factors in this horizontal impact model.

(iv) **Public investing in solving critical problems facing the entire poultry subsector through reinforcing regulations and actual investment to establish missing infrastructure**

Most rural Tanzanians depend on agriculture for their livelihoods. The sector account for about 45% of the country's GDP and occupies 70% of the Tanzanian population (FAO, 2008). In rural areas, poultry farming is part and parcel of rural economy and plays an important role in contributing to household income and nutrition as it is increasingly considered to be a commercial activity. However, the current development of the poultry industry in Tanzania is based on a vertical integration strategy which is evident in large cities such as Dar es Salaam. In this system, large firms are involved in feed milling, DOC production, broiler and egg production, marketing and processing. While this system has its benefits (high bio-security & export potential) it is not beneficial for the majority of rural poultry producers who produce 79% of the chicken population in the country.

KukuDeal, through MUYEK Development Solutions Ltd plans to continue to implement the commercial horizontal approach to poultry sector development which is inclusive of more smallholder and medium-scale producers and can create a more equitable growth of the sector as well as benefit the majority of the rural populations. At present, high prices and unavailability of feeds (which account for more than 60% of the production costs in a commercial system) is holding back all efforts towards development of the subsector at a national scale. Scarcity and high prices of feeds are a result of shortage of feed ingredients such as maize due to competition with human food needs, inconsistency supply in dry seasons, lack of storage and poor purchasing ability by feed producers. It should be stressed that until a stable supply of quality feed is established, it is senseless to develop the poultry sector.

To increase feed quality, reduce prices and increase its availability, drastic changes in the poultry feed industry are needed to support the growth of the poultry sector. Several trials have been conducted by RIU to test technologies and alternatives that will reduce feed prices, increase quality and availability. This includes substituting the use of maize and fish meal with other crops such as sorghum, pearl millet and soya in poultry feed formulation. These trials have proved that there can be a price reduction from Tsh 30,000 to Tsh 15,000 per 50 kg bag of feed. This will ensure that a poultry farmer is able to make a significant profit.

However, the alternative crops are currently not being grown at commercial levels to meet the projected demands in the sector. For instance, an analysis of poultry feed demands show that as KukuDeal continues to implement the contract farming model, there will be approximately 31,200 tons of sorghum needed annually to produce enough feed for farmers and hatcheries. The total number is based on the premise that 100 chicks consume 12 bags (50kg) of feed over a 4 month cycle. There will be production of 250,000 chicks that will consume 30,000 bags of feeds for 4 months. This is equivalent to 1,500 tons of feeds (78,000 tons per annum). Note: 1 ton of feed includes 400 kg of sorghum; therefore, 1,500 tons of feed will require 600,000 kg or 600 tons of sorghum. Thus with a weekly supply of 250,000 chicks, 31,200 tons of sorghum will be needed annually (i.e. 600 tons x 52 weeks). Current harvest by rural farmers in Manyoni district – Singida is 500-600 kg/acre. With much care and use of professional advice it can reach up to 1,000 kg/acre (1 ton/acre). Therefore in two planting seasons 15,600 acres will be required (average seeds requirement = 4 kg/acre). Thus 15,600 acres will demand 62.4 tons of seeds (31,200 acres will demand 124.8 tons of seeds).

This emphasizes the fact that developing the feed sector requires a very strong support from the crop sector. On the other hand, growth in the poultry subsector increases the demand for feeds and therefore provides a huge market for agricultural products, and more so of crops which do well even in areas experiencing acute shortages of rain. For instance, to feed the current capacity of 250,000 chicks per week to maturity, the sector needs 31,200 tons of millet grains per year cultivated in 31,200 acres using 124.8 tons of seeds per year. This increase will also be required for other feed ingredients such as soybean, sunflower and cotton cake seeds. Based on these needs, it should be stressed that until a stable supply of affordable quality feed is established, it will still not be possible to fully develop the poultry sector.

Recommended Critical Areas for Government Support

Experiences from RIU show that a percentage of support from the public sector is crucial to support and reduce the risks especially of smallholder farmers. For example, the financing mechanism provided through RIU temporarily reduced the level of risks for very poor farmers who could not participate in production. Most risks were initially absorbed by RIU and KukuDeal as they took the financing and operational roles in the value chain. This is among the major factor that allowed the sector to take off on a commercial basis.

The private sector alone is unable to invest in production, storage, and purchasing of ingredients and inputs to support commercialisation of the poultry feed industry and the overall poultry sector. Interventions and partnerships between the government and the private sector are needed in the following areas to realise the goals.

- *Support in production and purchasing of major feed ingredients:* A contract farming model for pearl millet and soybean production is needed to support smallholder rural farmers to initiate production of millet to be used in poultry feed production. Farmers will need initial support in inputs and a guaranteed purchase of their produce upon maturity. The immediate purchase of millet from farmers during the harvest season will drastically reduce prices since crops are sold at lower prices during that time. Currently, private sector investors find small farmers too risky hence they opt to work mostly with medium and large scale producers. If this continues rural producers will not benefit from the envisaged growth.
- *Storage system for feed ingredients:* In order to maintain low prices for poultry feeds and ensure appropriate storage, all the millet have to be purchased from farmers and stored in identified locations. A specific system for storage of grains for animal feed production with the capacity of 500 metric tons has to be in place to create safety and eliminate risks of exporting or diversion into other uses. Feed manufacturers can purchase ingredients directly from these identified storage facilities. This arrangement will also ensure quality of grains used for feeds as it will be easy to monitor and regulate from one source.
- *Input subsidy or voucher scheme for producers of grains for livestock feeds:* Farmers that are producing grains for livestock feeds are not able to access input subsidies in the system. It is necessary that these farmers are included in such support mechanisms since their activities are also contributing to the agriculture sector in the country.

- *Seed multiplication:* The government should support costs in production / multiplication of seeds needed to commercialize pearl millet production. The millet and soybean seed chains must be efficient and capable of meeting the new demand. The current situation is not promising as these are considered as orphan crops.
- *Improvement of feed quality:* The government in collaboration with relevant stakeholders should implement a regular feed testing and quality control system for feeds and raw materials to regulate the quality of commercial poultry feeds that are being sold to farmers. Currently the quality of most commercial feeds is lower than the requirements, resulting in low performance of the chicken and losses to producers.
- *Define and set forth a national vision and strategy for the development of the poultry sector:* The government through relevant lead ministries should initiate and spearhead the process of setting a national vision and strategy for development of the poultry sector. Clear scales and targets needed for the sector's growth should be defined. The plan/strategy should project realistic growth as well as the potential contribution of the sector to the GDP, household incomes and food security. The plan/strategy can also be used to guide private sector, other stakeholders, NGOs and development partners on key areas for investment.
- *Initiate a coordination mechanism for organizations working in the poultry sector:* The central government (Ministry of Livestock Development and Fisheries) needs to coordinate poultry activities in the country to ensure that duplication of initiatives is minimized, and direct resources and interventions in areas that are crucial for the development of the sector.
- *Control LGA Levy imposed on farmers:* In Coast region farmers are being charged Tsh 300-400 per chicken sold by LGA as levy. It's not established whether these charges are formal. Furthermore, it is questionable that poultry farmers are taxed per unit output rather than on total income, or against profit. Moreover, the income collected as levy is not sufficiently ploughed back to improve livestock sector services (in delivering quality poultry extension services) in the particular district rather they are imposing significant losses to poor farmers. The Prime Minister's Office Regional Administration and Local Government (PMO-RALG) should address the issue with respective LGAs.
- *Ensure timely availability of affordable quality vaccines:* Disease control is very important in ensuring that majority chicks get to maturity and bring income to producers. Likewise, breeders and chick producers are required to vaccinate their parent and grand-parents stocks to minimize losses due to preventable poultry diseases. This requires a stable supply of quality vaccines to reach even the most remote producer.

Collaboration between the public and private sector in developing the sector is the only way.

For further reading

- Food and Agriculture Organisation of the United Nations (FAO).2007. Poultry Sector Country Review.
- Research-Into Use (RIU).2010. Market Study for Formulating an Indigenous Chicken Subsector Development Strategy.
- United Nations University. (2009). Working Paper Series No.2009-019.Strengthening Agricultural Innovation Capacity: Are Innovation Brokers the Answer?
- United Republic of Tanzania. (2003).National Sample Census of Agriculture 2002/2003.
- United Republic of Tanzania. (2006). Ministry of Livestock Development. National Livestock Development Policy.
- United Republic of Tanzania. (2009).Prime Minister’s Office. National Public Private Partnership Policy
- United Republic of Tanzania. (2009).Tanzania Investment Centre. Report on Foreign Direct Investment in Tanzania
- United Republic of Tanzania. (2011).Ministry of Agriculture, Food Security and Cooperatives. Trends and Outlook Report on Key Agriculture and Rural Development Indicators.
- United Republic of Tanzania. (2011).National Sample Census of Agriculture 2007/2008.



For more information contact:

MUVEK DEVELOPMENT SOLUTIONS LTD, Kiko Avenue No. 277, Mikocheni A, P.O. Box 105270, Dar es Salaam, Tanzania. Tel. +255 22 2700667/2700671, Fax: +255 22 2700656, E-mail: admin@muvek.co.tz, Website: www.muvek.co.tz