

ZAMBIA

Report on 2012 National Agricultural Innovation System Assessment



Submitted by: Utiang P. Ugbe (Consultant)

Sponsored by



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Acronyms

AgBIT	Agribusiness Incubation Trust Ltd
CC	Cooperative College
CDT	Cotton Development Trust
CVRI	Central Veterinary Research Institute
GTAZ	Grain Traders Association of Zambia
IITA	International Institute for Tropical Agriculture
MoAL	Ministry of Agric & Livestock
MU	Mulungushi University
NRDC	Natural Resources Development College
PAM	Programme Against Malnutrition
UNZA	University of Zambia
ZARI	Zambia Agriculture Research Institute
ZATAC	Zambia Agribusiness Technical Assistance Center

Sector Affiliation of Participating Organizations in NAIS 2012 Study in Zambia

Sectors	Number of Participating Organizations
Agric Extension (Public Funded)	2
Agric Extension (Independent Funded)	1
Agric Research (Public Funded)	2
Agric Research (Independent Funded)	1
Agric Education/Training (Public Funded)	4
Agric Education/Training (Independent Funded)	
Civil Society	
Agro-Business (Public Funded)	1
Agro-Business (Independent Funded)	2
NGO/Non-profit	
Policy (Public Funded)	
Policy (Independent Funded)	
Total	13

Chart 1:

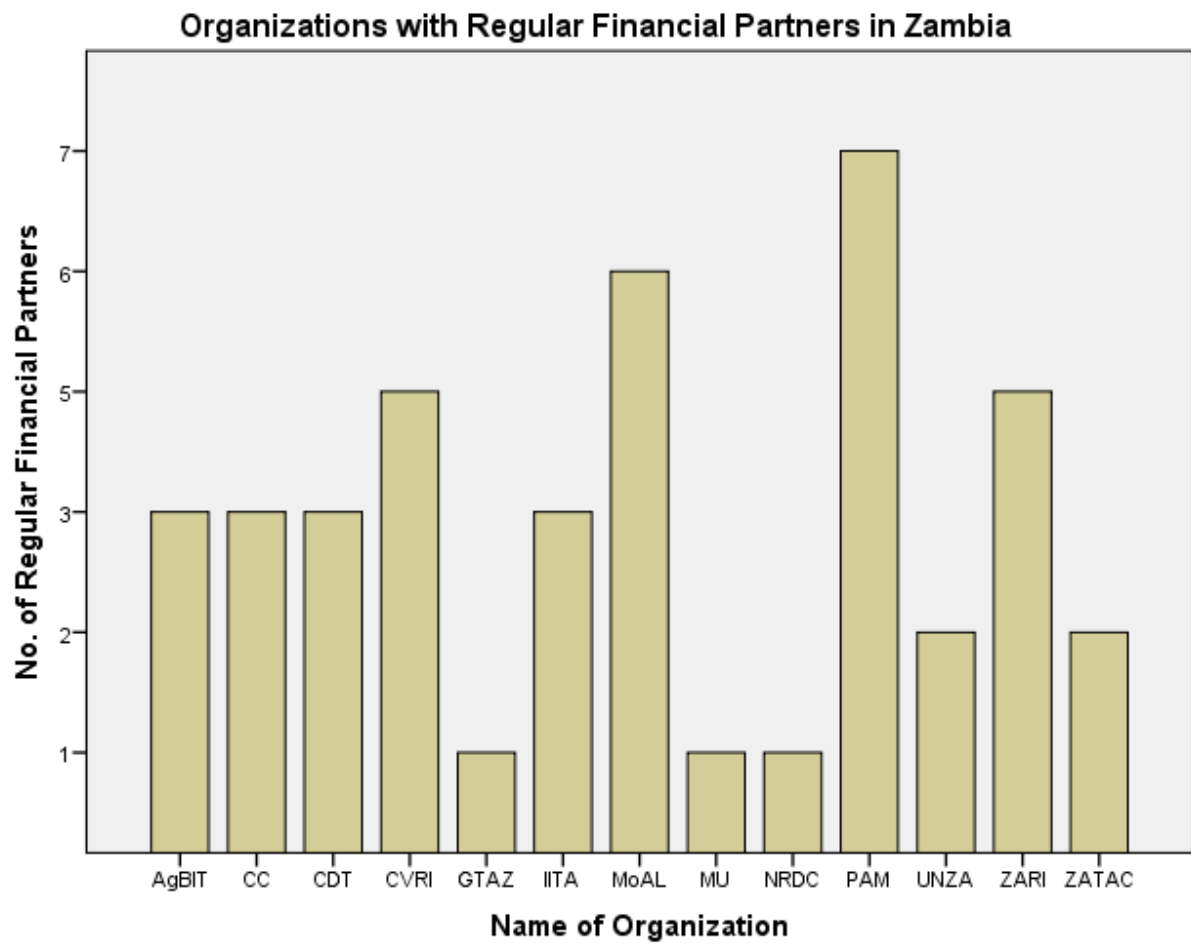


Chart 2:

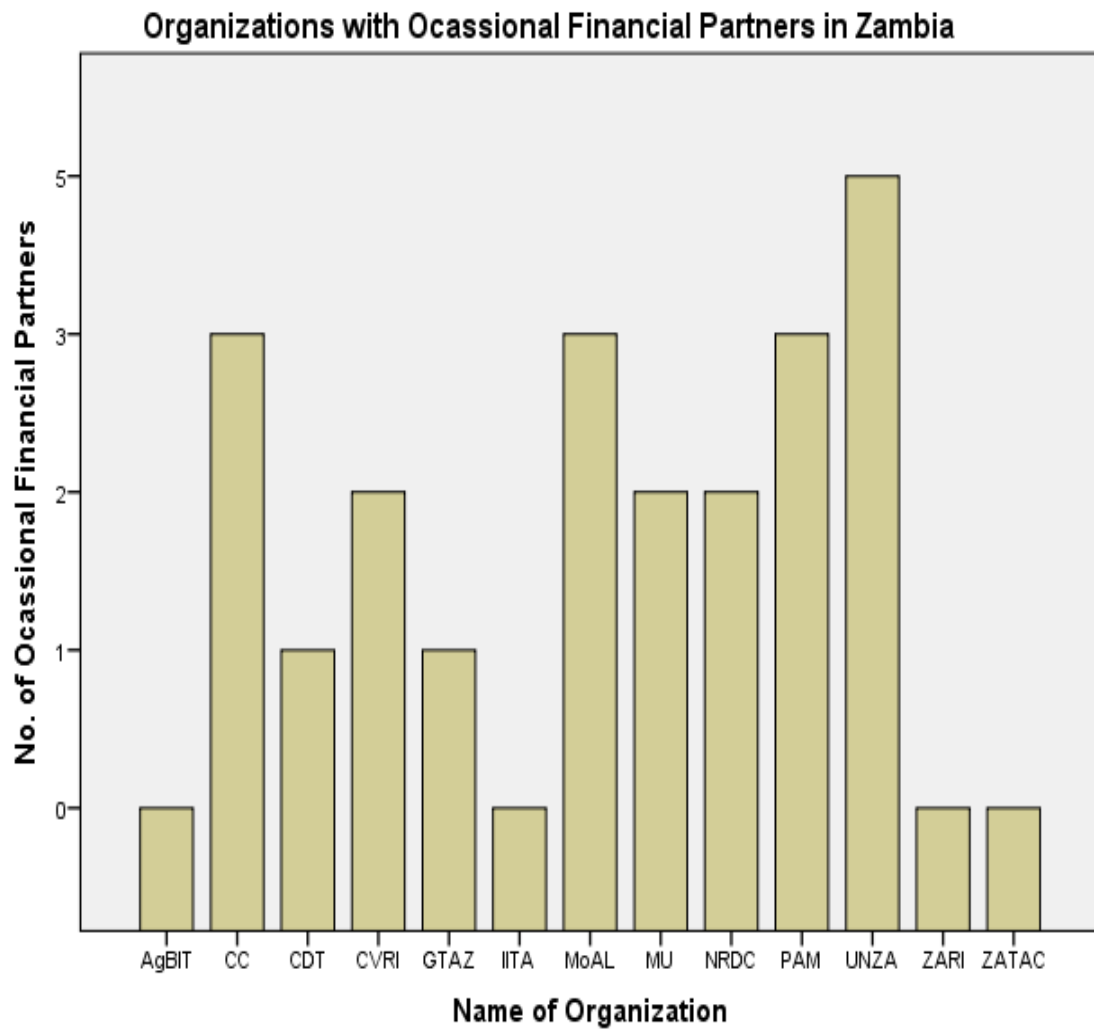


Chart 3:

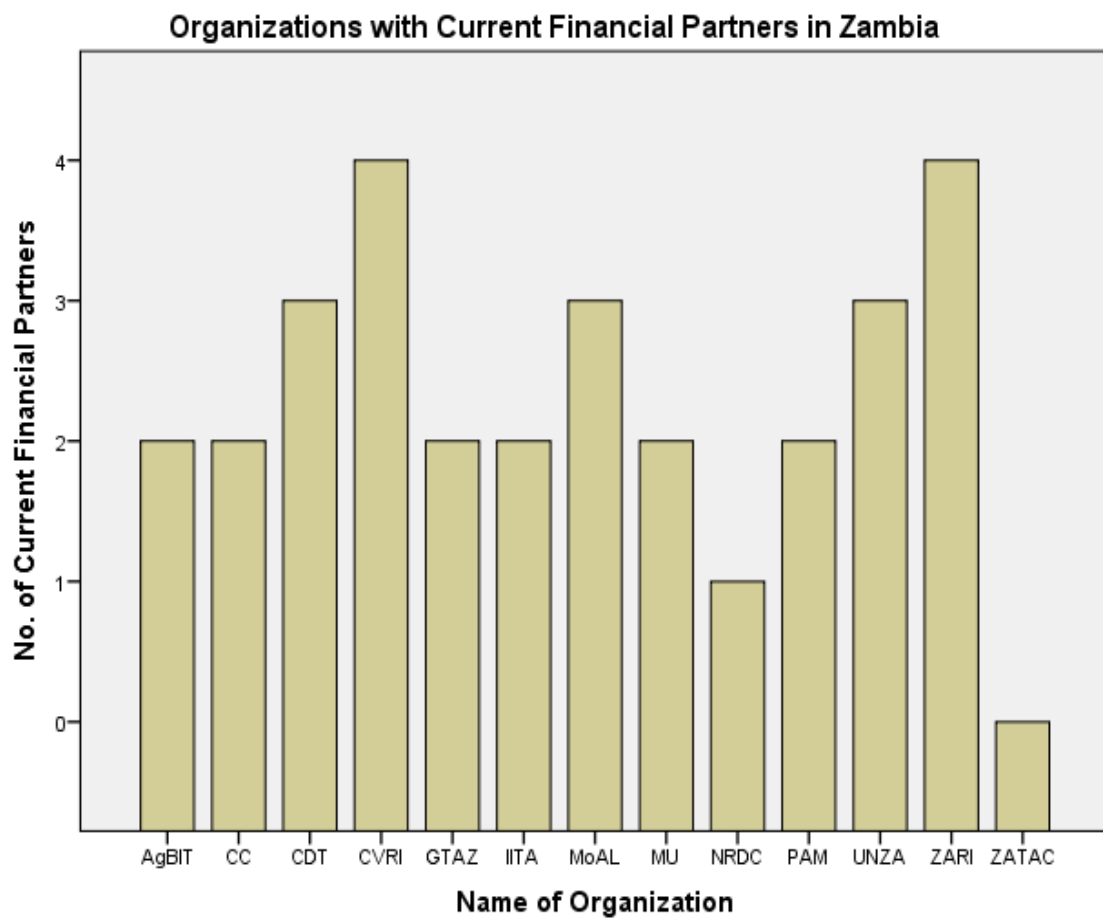


Chart 4:

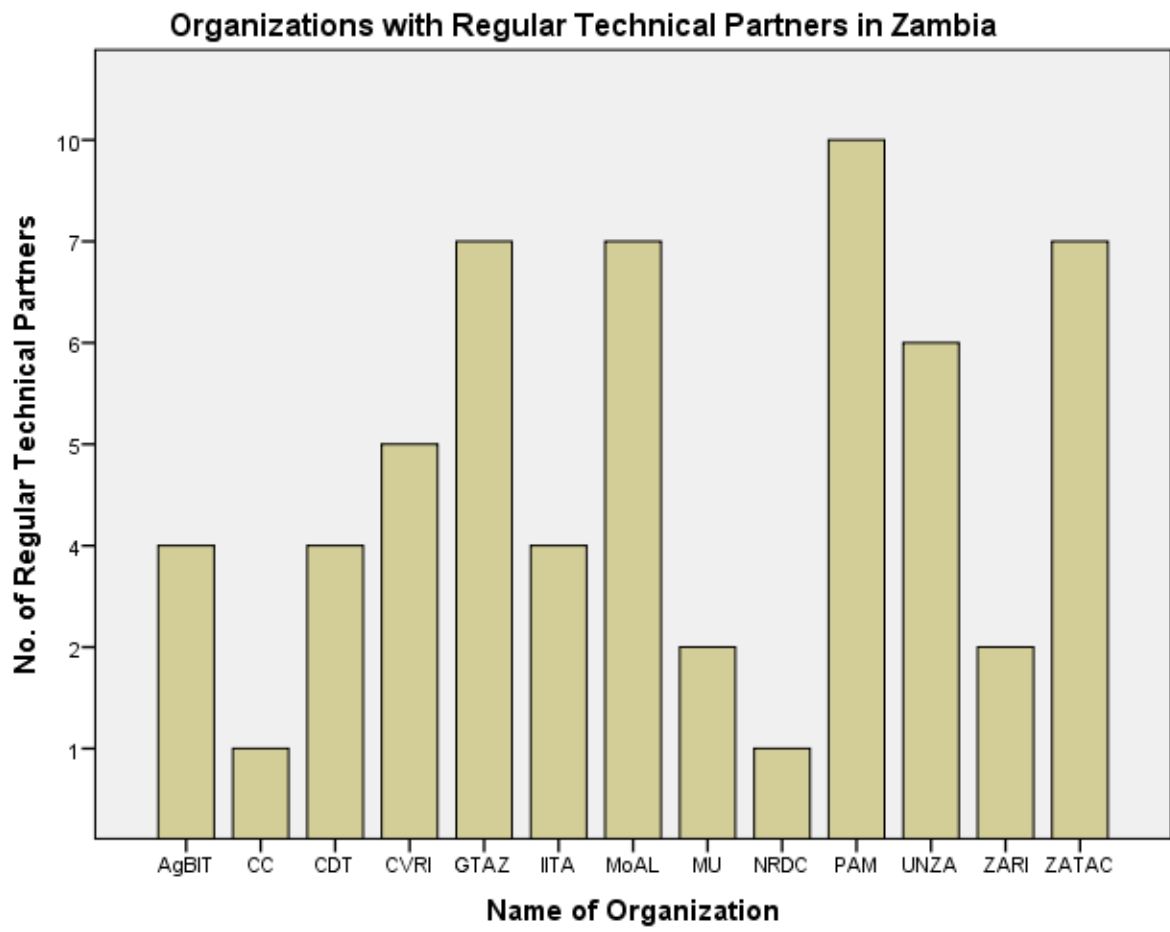


Chart 5:

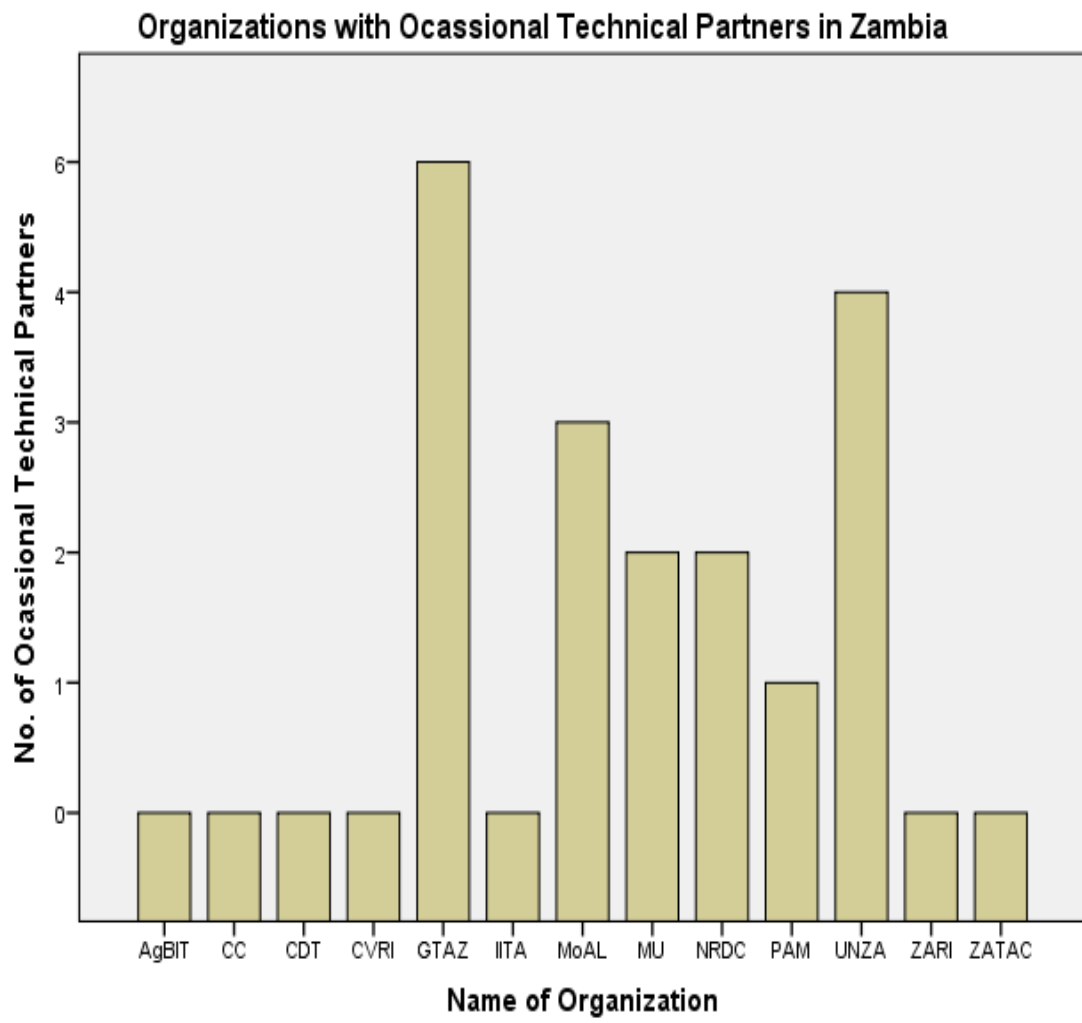
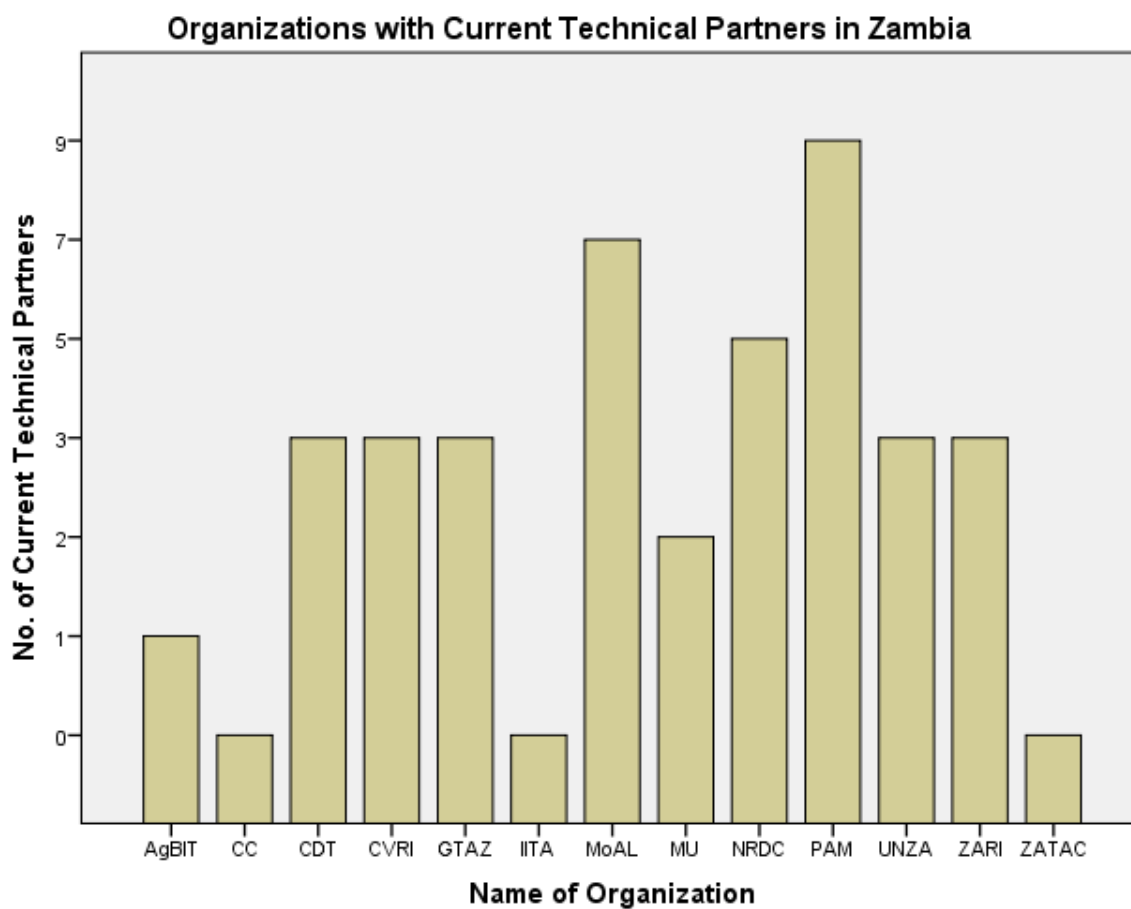


Chart6:



Graph 1: Zambia Agricultural Expenditure Share of Total Expenditure 1980 - 2007



Source: ReSAKSS 2010.

1. National Agricultural Profile

Agriculture has contributed about 20% of Zambia's GDP in recent years.¹ The national staple crops include maize, cassava, rice, millet, sorghum, sweet potatoes, beans and groundnuts all produced by rain-fed, smallholder farms. Cash and export crops produced include soya beans, groundnuts, cashew nuts, sesame, maize, cotton, tea, coffee, sugar, paprika, tobacco, marigold, herbs and spices. Commercial maize production, though having a strong potential for growth, appeared to have fallen by 80% (from 350,000 tonnes to 60,000 tonnes) in 2011-2012.²

Though lucrative, the production and productivity of the cash and export crops are dependent on the performance of rain-fed, smallholder farms, subject to adverse weather conditions, poor access to financing, and global market volatility. Export-oriented floriculture is also strongly emerging, with over 60 varieties of fresh roses accounting for 95% of production in this subsector, and earning the country about US\$40 million in foreign exchange.

Zambia is landlocked, although it has abundant fresh water that can support commercial agricultural irrigation, with a resource such as River Kariba, the world's largest reservoir by volume (180 cu km).

2. Institutional Arrangements

The key objectives of Zambia's National Agricultural Policy are: (1) nationwide and year-round household food security; (2) adequate supply of raw materials for a sustained agro-based industrial development; (3) increased agricultural export to enhance agricultural sector's contribution to the national balance of payments; (4) generate income and employment through increased agricultural production and productivity and (5) ensure conservation and sustainable management of natural resource base for use by future generations.³

Zambia's national agricultural policy document expresses a strong recognition and support for the roles of non-state actors (e.g. private sector, farmer groups and NGOs), participating in the provision of extension and rural advisory services, either directly or through the provision of capacity building assistance to local structures. There is a strong history of this trend in the country. For example, the Zambia Agribusiness Technical Assistance Center (ZATAC) was established and nurtured for many years with funding from the USAID. The centre became an independent organization providing a range of technical and business advisory services, including extension, to clients in the agriculture sector.

Other smaller independent groups (e.g. community-based organizations) were also offering freelance services to farmers and post-harvest processors across the country. While the emergence of these freelance services was necessitated by inefficiencies associated with state-run agricultural extension and advisory services, their existence indicated their potential viability as microenterprises.

The Grain Traders Association of Zambia (GTAZ), has nationwide membership comprised of local groups, Zambian and multinational companies. Its operations include procurement, selling, storage, fumigation, logistics, commodity brokerage, input finance, and cross-border

¹ Government of Zambia (2010). – National Policy on Agriculture. Review Paper.

² New Agriculturist - <http://www.new-ag.info/en/country/profile.php?a=2621>

³ Government of Zambia (2004). Ministry of Agriculture and Cooperatives (MACO): National Agricultural Policy 2004–2015.

trade. The commodities traded include maize, cowpea, soybean, wheat, groundnuts, sunflower, rice, sorghum, beans, and cotton cake. GTAZ also assist in the procurement of agro-input such as fertilizers, seeds and agrochemicals. However GTAZ did not appear to have the high level leverage on national agricultural policy as compared to KENFAP in Kenya. Furthermore, GTAZ did not appear to have fully tapped into the opportunities to provide extension and advisory services to its affiliate farmers across the country, even though the relatively inefficient state-run extension services presented the need for complementary services by non-state actors.

Lessons from programme experiments carried out by DFID-funded Research Into Use Programme, in six sub-Saharan African countries including Zambia, suggested the need for ‘innovation brokers’ or intermediaries to facilitate transactions, interactions and reconciliation among various competing interests and entities within a commodity value chain. Agro input producers could benefit from the services of these freelance extension providers. These types of brokerage roles are essential to innovation, but fall outside the routine of state-run extension services. Their emergence in Zambia could be indicative of “innovation” occurring in the domain of agricultural extension and rural advisory services. However, capacity development support, similar to previous investments on ZATAC by the USAID, and on innovation platforms by the DFID-RIU Programme, should be continued by donors and other support agencies, including FARA, until the services becomes self-sustaining.

3. Analysis of Responses in Zambia

While the respondents defined agricultural innovation from their respective perspectives reflecting emphasis on new knowledge, research, new technologies and new forms of interactions, there was a general convergence of views on how to engender innovation in the sector. The approaches suggested included (i) promotion of science based education to enhance practical application of science; (ii) public-private-partnerships in projects involving joint provision of agricultural extension and advisory services; (iii) tax breaks for agro-investors; (iv) targeted human resources development in pivotal disciplines by both the public and private sectors; (v) provision of low-cost credit to commercial ventures that promote innovation; (vi) vigorous communication of successful innovation trials to motivate and encourage others; and (vii) guaranteed markets for value-added agro-products in both domestic and export markets.

4. Recommendation

- 4.1. It is recommended that FARA should support the nurturing of a cadre of ‘innovation brokers’ in Zambia, to complement the roles of the emerging freelance service providers such as ZATAC and GTAZ. The National Coordinator for 2012 NAIS study in Zambia could be supported financially by FARA to convene and nurture a group that would explore broad based strategies for strengthening the capacity of freelance innovation brokers in the country.
- 4.2. FARA should also revamp a defunct SCARDA structures in Zambia and refocus the efforts to address one or two specific innovation challenges that could be identified, in order to build confidence among the participants as part of a broad-based multi-stakeholder agricultural innovation coalition.

**SUMMARY VIEWS OF PARTICIPATING ORGANIZATIONS
NAIS 2012 STUDY ZAMBIA**

	Agricultural Innovation Defined in terms of	Indicators of Agricultural Innovation	How to achieve envisaged Agric Innovation	How to achieve Private sector strong participation
MU	An holistic approach where all players in the agricultural product value chain are involved and all benefit	Adoption of innovation technologies; commercialization of innovation technologies; efficiency in agricultural productivity; & profitable agricultural production	Formation of interactive for a like innovation platforms will enable the country achieve innovations; the platforms will bring all stakeholders in the value chain; there is need for collaboration between research education & private sector; favourable policies to support agric innovation	Support programmes to the farmers that foster innovation
CC	Introduction of technologies which can boost productivity to small scale farmers	Access to affordable technologies	Promote science based education for primary schools; devote more resources to technical training (post secondary) & agricultural research institutions; support linkages between the industry and research institutions	Development of rural infrastructure – feeder roads; enactment of polices which empower farmers – land ownership
NRDC	A system comprising all the facets of value chain of particular agricultural product	From farmers profit; adoption of agric innovation technologies; need to give the small scale farmers a platform where they bring out or share knowledge on agric innovations	Create commodity value chain; create linkages with research/training and the private sector	Agricultural innovation need to be nicely packaged & should show business opportunities to attract private sector investment
	A situation where stakeholders in different agricultural value chain come together to share information; A way of doing things to do with production; Anything you do that impacts on	Increase in agricultural production and productivity; Increased quality of agricultural production; Sustainable production methods; Agricultural technologies developed; Technologies that help	Increased/improved funding to agricultural research; Motivation of staff ,Strengthened research, extension and farmer linkages; Revamping and intensification of Farmer Field Schools, Farmer	Agriculture research must be tailor made to meet the needs of farmers; Formal/informal interaction of stakeholders to identify gaps to benefit the private sector – private sector will invest where there are

	production; Production methods, distribution and consumption methods	to mitigate the impact of climate change; Diversified production base for both livestock and crops Conservation agricultural practices Adoption/ improved uptake of technologies; Improved incomes and livelihoods among rural households/ farmers; Balanced participation in terms of all players in the value chain (including men and women) Participatory research; Inclusive involvement of farmers	Training Institutes, Livestock Demonstration Centres, etc.; Reform farmers' cooperatives so that they are able to respond to the needs of the farmers; Government should implement a subsidy programme that is well targeted and have a specific time period; Government must seriously invest in Research and Development (R&D) as well extension rather; Government should improve its Financial Management principles; Government must adhere to the annual agriculture budgetary allocation declaration of 10% SADC and 15% CAADP of GDP Improve on: capacity building, human capacity according to the establishment register; the disbursement of funds allocated in the budget to agriculture as opposed to annual releases of less than 50%	returns; Private sector should be encouraged to invest in agricultural research as a social responsibility; Value chain approach must be encouraged
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	Agricultural Innovation	Indicators of Agricultural Innovation	How to achieve envisaged Agric Innovation	How to achieve Private sector strong participation	How to achieve Private sector participation in Extension & rural Advisory services
Unnamed Respondent	New or improved systems & processes that bring efficiency	Productivity; Differentiation; Adaption; Quality product; Adoption rate	Consultative process; Dissemination; Training/skills (focus on entrepreneurship); dissemination – PS driven research (relevance)	Access to markets/ local/ region; Address gaps in value chains (government/PS); Comprehensive approach to value chain development;	Building capacity of extension staff; harmonization of messages/approach; strong market linkages-able to sell/export; contract farming/outgrower/cost

				policy consistence; strengthen PP/Public funds for try & skills; develop funding mechanism for country commercialization research outputs	sharing; must be profitable (ROI); Risk management
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	MoA/LIVESTOCK	NRDC-MU	MU	ZATAC
Agricultural Innovation Defined in terms of		An holistic approach where all players in the agricultural product value chain are involved and all benefit		In terms of extension, it could be embracing the non-tradition system that encourages or allows space for various extension and related actors to interface and share experiences and best practices
Indicators of Agricultural Innovation		Adoption of innovation technologies; commercialization of innovation technologies; efficiency in agricultural productivity; & profitable agricultural production		Interfacing of stakeholders; linkages between public & private sectors; Private sector extension services increasing; Research, public & private sector extension collaboration; private sector support to research & extension
How to achieve envisaged Agric Innovation		Formation of interactive for a like innovation platforms will enable the country achieve innovations; the platforms will bring all stakeholders in the value chain; there is need for collaboration between research education & private sector; favourable policies to support agric innovation		Policy to support the new thinking if not catered for already; Creation of awareness among stakeholders; Identify national institutions to lead the promotion of innovation system; Create incentives for private sector participation
Core vision of Organization	Sustainable agric development leading to	To create centre of excellence in agricultural training	To be a formidable agricultural training	ZATAC Ltd was created with a vision to commercialize and diversify SME

	both national & household food security		institution with perfect infrastructure, market driven curriculum, motivated & highly qualified staff proving excellent training, consultancy & research to suit its high corporate image	production in Zambia, with an emphasis on value-added agro-processing and value-chain development
Core Mission	Provision of extension & advisory services to small scale farmers	To produce high caliber, innovative human resource would push the agenda of food security	To train high caliber human resource, conduct research & consultancy & undertake business ventures in order to promote agricultural development that will ensure food production, wealth creation & proper natural resources management responsive to the needs of the local & international communities	To help increase incomes and improve quality of life of Zambians through alliances built between competitive markets and Zambian enterprises (primarily owned and operated by individual or group small and medium agro-entrepreneurs). In pursuing this, ZATAC Ltd provides technical, financial and managerial services to its clients
Primary clients	Small scale farmers	School leavers; in-service school leavers; small scale farmers; up-coming farmers		farmers/farmer groups as agro - entrepreneurs and of SMEs. cooperatives, associations, farmer unions, and others SMEs in various agricultural and other related subsectors
Primarily accountable to	Government	Ministry of Agriculture & Livestock; Ministry of Education		Partners, farmers/other client groups and the board of ZATAC
Achievement extent	Nil	Introduction of open & distance learning, Day school & Parallel programme; partnered with other institutions to foster quality		Have more than 10 years of technical services provision to a range of agro-based client individual and group businesses since transformation from being a project to company ltd as an exit and sustainability

		education & training		strategy of technical services provision
Organizational strengths	Wide extension network	A brand name in agricultural training at diploma level; unique & strategic location; qualified & dedicated staff; programmes offered are unique with emphasis on entrepreneurship	Training infrastructure; professional experience staff; farmland; PPP with Zambia Export Growers Association	<ul style="list-style-type: none"> a) years of experience in implementing agribusiness development programmes b) Founded on value chain approaches to agribusiness development. c) Worked with more than 500 SMEs and cooperative/ association businesses since inception, creating more than 18,000 sustainable jobs. We have a large base of farmers that other stakeholders can tap into in terms of things like leveraging their businesses or programs. d) Proven track record of working with all value chain actors e) Increase youth participation f) Capacity development, entrepreneurial trainings of clients
Organizational weakness	Shortage of extension officers; inadequate funding; high extension worker/farmer ratio	Inadequate funding from government; inadequate infrastructure; staff retention	Poor links with extension – public & private; poor funding for research & outreach; run-down training facilities & equipments; few trained staff in extension methodologies; high staff attrition due to age structure	Being a not-for profit organization ZATAC largely depends on partner institutions on behalf of which projects are implementing. Only direct costs are supported by most partner organization which reduces the ability of ZATAC to extend technical support to many clients requiring this.
Capability to deliver	Improved funding; recruit more extension staff		Increase funding to educational & training institutions; government to come with attractive packages for staff & also fund research & development in the institutions; infrastructural development	Linkages with other actors could be one way of sharing the burden so that through these partnerships more businesses could be developed to a point where they become key business clients for partners at a later stage. For instance the technical assistance has played a big role in increasing the SME sector which in turn demands services from institutions like banks.

				Hence it would in the interest of such institutions to support ZATAC efforts through some sort of partnerships that help to grow the SME sector. Many more of such examples involving other potential players can be given.
Relevance of Organization in Agric Innovation	Farmer (stakeholder) participation in agricultural innovation is very important & our department is very close to the farmers, therefore very relevant		The multiplier effect when students graduate, they transfer knowledge & skills to the farmers; students learn hands-on experience when they go for industrial attachment; students learn entrepreneurial skills so they can create jobs	<p>In SME transformation and value chain development basically anchored on our five core competences:</p> <p>Provision of enterprise development services (business plan development, training in business plan development, business plan appraisal and backstopping business plan implementation, intermediating technical assistance and technology transfers, etc); Linking farmers and other small and medium entrepreneurs to growth-oriented value chains that lend themselves to significant SME participation and fairly serve as reliable and profitable markets; Undertake both supply-side and demand-side market development work to competitively match farmers and other small and medium entrepreneurs to both input and output markets; Linking farmers and other small and medium entrepreneurs to sustainable commercial financial services;</p> <p>To undertake supply chain and market analysis work and dissemination workshops that help improve local and national understanding of market developments aimed at improving the business environment and agribusinesses support systems for farmers and other small and medium</p>

				enterprises.
Partnering Private sector	In the value addition chain		Inviting collaborative partners to demonstrate the agricultural innovation in the institutions; formation of consortia which are promoting agricultural innovations will enable the students to participate & obtain skills in agricultural innovation; to partner with the private sector on research themes generated by the private companies	Participating in value chains to fill a gap in a need. The input market requires private sector to come in and supply the various inputs required by our SMEs and farmer groups in their production process. In the output market, private sector can come in to support our clients by signing supply contracts with them for their produce. Institutions like banks that often struggle with efficiency concerns when it comes to serving the smallholder sector can take go around this challenge by servicing well organized cluster clients of ZATAC to reduce their transaction costs etc.

	PAM	Unnamed Respondent	Unnamed Respondent	Unnamed Respondent	Unnamed Respondent	Unnamed Respondent
Core vision of Organization	Facilitate attainment of prosperous livelihood among small scale farmers/vulnerable groups	Cotton farmers with improved livelihoods through application of production innovations	To be a centre of excellence providing scientific leadership in generation and transfer of improved and appropriate agricultural technologies	Reduce trade barriers for members locally & abroad	To become a leading research partner in facilitating agricultural solutions for hunger and poverty	A Zambia with highly productive herds and flocks free of animal health challenges
Core Mission	Attainment of improved food and nutrition security and increased household incomes	Generate cotton production technologies that benefit all	To contribute to the welfare of the Zambian people through the provision of agricultural services, technologies and knowledge that enhance	To enhance businesses of members	To increase agricultural productivity, food security and income among the small holder farmers	To support the livestock disease control and eradication programmes through provision of quality

			household food security and equitable income generating opportunities for the farming community and agricultural enterprises while ensuring the maintenance of the natural resource base			diagnostic services and research activities
Primary clients	Vulnerable groups, small scale farmers	Cotton farmers, cotton ginner, cotton spinners	Farmers; Colleges and Universities; Policy makers	Members of association, banks, farmers, processors, consumers & wholesalers	Small holder farmers	Farmers; Regional Laboratories; Veterinary Field Services; Training Institutions
Primarily accountable to	Financiers; Stakeholder forum,; Board	Accountable to the Government Republic of Zambia and individual donors	Government of the Republic of Zambia through the Ministry of Agriculture and Livestock	Members, board of executive	The Consultative Group for International Agriculture Research (CGIAR)	Government of the Republic of Zambia through the Department of Veterinary Services
Achievement extent	Very successful, much progress has been made	Advanced: managed to generate and disseminate improved cotton varieties	Very far - looking at the number of technologies and human capacity developed over the years	Policy inconsistencies on marketing of agriculture produce	Increased productivity – the organization has developed improved technologies to mitigate the impact of climate change, poor soils through conservation agriculture (CA), intercropping, breeding short maturing varieties	The organization has provided diagnostic services, research and animal vaccines but a lot still needs to be done to achieve he vision

					<p>resistant to pests and diseases. Value addition – cassava and soyabean processing and utilisation technologies</p> <p>Nutrition – IITA has gone a step ahead in increasing household nutrition through mitigating the impact of aflatoxin (major cause of liver cancer) in groundnuts and maize. Zambia has been empowered to conduct the analysis of aflatoxin levels in groundnuts and maize. Reduced aflatoxin will also open international and regional market opportunities for Zambian groundnut crop.</p> <p>Capacity building – IITA has achieved a lot in building the capacity in ZARI</p>	
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					both institutionally and human capacity building	
Organizational strengths	Strong network of partners/ stakeholders; country wide coverage; High competence in areas of food security & nutrition	Clear mandate Dedicated trustees Improved infrastructure such as the irrigation system 400 ha of available land	Human resource - highly trained and with a lot of experience; Infrastructure - spread across the country in all provinces; Both local and international collaborators	Best industry practices & cost effectiveness; privately sourced monies; improved dialoguing; recognition	Technical capacity – very strong technical capacity to develop technologies that would transform the agricultural sector	Infrastructure – buildings; Skilled manpower; Availability of equipment
Organizational weakness	Limited funding; limited research activities	Inadequate funding from government Fluctuations in the market prices for cotton	Inadequate and often erratic funding especially for operational activities Poor conditions of services for staff	Consensus building	Lack of permanent infrastructure – currently using rented premises (dwelling house)	Policy changes such as funding affecting continuity and institutional memory; Inconsistent funding affecting planning; Low staff housing leading to high levels of absenteeism for staff living far away from research station
Capability to deliver	Strengthen research unit and collaboration with research institutions; engage more staff	Improve mechanisms to effectively collect cotton levies from farmers	Improved/increased allocation of funds for operational activities; Put in place an IPR and ICM/T strategy	Capacity enhancing; Skills & training; Learning organization	Build its physical capacity	Increased funding for diagnostic and research operations; Capacity building of available staff; Increased investment in staff housing; Consistent

						policies in agriculture research and development funding
Relevance of Organization in Agric Innovation	Very relevant in promoting crop/food diversification, especially in view of climate change	It is the only institution with the mandate and capability to conduct cotton research in the country	It is the major contributor of agricultural technologies in soils and crops in the country; Better place to influence the research and development agenda	Very relevant – Bulk deliveries into traders/processors; Innovative approaches to marketing	Very relevant	Biggest challenge of livestock sector is animal diseases hence any effort to reduce incidence of livestock diseases will improve productivity directly
Partnering Private sector	Training, farmer organization and development of new food and animal product	Collaborative planning and implementation of cotton research activities	Collaborative planning and implementation of research activities; Development of Memorandum of Understanding; Meeting the needs of various stakeholders	Consultation among members; Publicity promotion & advocacy	Since value addition is one of our strategic objectives private sector could partner with IITA and manufacture/sell labour saving devices e.g. oil extractors for groundnuts, groundnut shellers, cassava chippers, cassava milling machines; Also use of cassava flour in confectionaries	Meeting the private sector/ farmers at their point of need