

TRANSFORMING AGRICULTURE THROUGH CONTRACTED EXTENSION SERVICE DELIVERY SYSTEMS: THE CASE OF KENYA'S AGRICULTURAL PRODUCTIVITY AND AGRIBUSINESS PROJECT

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ABSTRACT

Transformation of small holder agriculture from subsistence farming to agribusiness focused systems, is paramount towards attainment of Kenya's vision 2030 and the Millennium Development Goals. This requires extension service delivery systems that focus on addressing challenges within agricultural product value chains (APVC) continuum. The existing extension systems have not contributed much towards this transformation due to their limited capacities, including inadequate expertise and diversity. The Kenya Agricultural Productivity and Agribusiness Project (KAPAP) is implementing an innovative service delivery model, whose approaches include a Community Driven Development (CDD), demand driven and public private partnerships through contracted Service Providers (SPs). The aim of the model is to contribute towards increasing smallholder farmers' productivity and incomes. The implementation of the model brings together sector players as implementing agents; while the SPs consortia were competitively selected. The services delivered to farmers' common interest groups (CIGs) include high level value chain interventions such as organising farmers for marketing, and linking them to markets and other service providers. Payment for services is done using farmer grants and is pegged onto achievement of set income indicator benchmarks negotiated and agreed upon between farmers and their SPs. The implementation of the model is guided by operational procedures, designed to ensure that a harmonised process is followed within the targeted counties. A total of 109 SPs consortia were contracted in January 2012 to offer services to 118,865 farmers (Males = 57%; Females = 43%) organised into 4,355 Common Interest Working Groups (CWGs). The achievements made by end of 15 months show an increase in production for the 36 target enterprises and farmer incomes. The farmers earned a total of US\$ 44,118 million at a service delivery of US\$ 1,124,706, giving an econometric return to investment of 39.4. The achievements of this model qualifies it for inclusion among other feasible extension approaches or "islands of success" that have the potential to transform the agricultural sector in Kenya and in other developing nations with minimal modifications.

Key Words: Community driven development, innovative extension delivery

RÉSUMÉ

La transformation de l'agriculture des petits exploitants de la subsistance en agriculture de marché est primordiale pour atteindre les objectifs de la vision 2030 au Kenya et les Objectifs Millénaires de Développement (MDGs). Ceci nécessite des systèmes de vulgarisation visant à adresser les contraintes tout au long des chaînes de valeurs. Les systèmes de vulgarisation existants n'ont pas contribué grand-chose à la transformation de l'agriculture de subsistance en une agriculture de marché à cause de leur capacité limitée y compris l'absence d'une expertise adéquate et diversifiée. Le projet « Productivité Agricole et Agribusiness » au Kenya (KAPAP) est entrain d'exécuter un modèle innovateur de prestation de services suivant une approche incluant un développement piloté par les communautés, répondant directement à la demande et basée sur un partenariat public-privé à travers des contrats avec les prestataires des services et fournisseurs des intrants. L'objectif de ce modèle est de contribuer à accroître la productivité agricole et augmenter les revenus des petits exploitants. L'exécution de ce modèle regroupe les différents acteurs dans le secteur comme agents d'exécution tandis que tous les prestataires des services et fournisseurs d'intrants sont sélectionnés sur des bases compétitives. Les services fournis aux

associations des producteurs sont entre autres des interventions dans la partie supérieure au long des chaînes de valeur tel l'organisation des producteurs pour la commercialisation de leurs produits ; leur connection avec les marchés et fournisseurs de services et d'intrants. Le paiement des services est généralement à travers des subventions aux producteurs basées sur un contrat de performance économique à évaluer sur base d'indicateurs précis préalablement négociés et approuvés en même temps par les producteurs et les fournisseurs de services et d'intrants. L'exécution du modèle est guidée par des procédés opérationnels conçus pour assurer qu'un processus harmonisé est bien suivi dans l'ensemble des zones du projet. Un total de 109 groupement de fournisseurs de services et d'intrants était contracté en Janvier 2012 pour offrir des services à 118,865 producteurs (Hommes=57% ; Femmes=43%) organisés en groupes partageant les mêmes intérêts. Les résultats obtenus après 15 mois d'exécution du projet indiquent une augmentation de la production pour les 36 entreprises visées et une augmentation du revenu des exploitants. Les producteurs ont gagné un total de 44,118 million de dollars US contre un coût des services ou intrants fournis de 1.124.706 dollar US, indiquant un retour économétrique à l'investissement de 39,4. Les succès de ce modèle le qualifie pour son inclusion parmi les approches efficaces de vulgarisation « îlots de succès » ayant le potential de transformer avec des modifications minimales le secteur agricole au Kenya et dans d'autres pays en voie de développement.

Mots Clés: Développement communautaire, vulgarisation innovatrice

INTRODUCTION

Inadequate extension service provision is a major barrier to East Africa's agricultural sector realisation of its full potential. Ram Basavaprabhu and Manveer (2009) reported that despite the progress in quality and quantity of research in Kenya that has resulted in good technologies, the information and communication support to farmers remains conventional and inadequate. A World bank evaluation report (Pre'cis, 1999) noted that the Kenyan extension systems lack focus on farmer empowerment and were based on traditional top-down and supply driven approaches that give little or no voice to the farmer. The situation remains unchanged even today; that is, the agricultural extension systems lack appropriate strategies for capacitating their target farmers to demand for services. Equally important, is the fact that they are often not sensitive to the needs of women and youth farmers who make up one-third and 81% of the farming communities respectively. These largely public-based systems are also constrained by a declining human and financial capital, lack of private sector input, poor coordination among various players and lack of accountability.

The extension messages communicated, mostly focus on agronomic practices rather than the complexities along the value chain which include value addition, processing and marketing of produce and products. Lack of marketing strategies is not only a disincentive towards

increased production, but continues to affect the sustainable economic growth of the agricultural sector. The purpose of this paper is to share emerging lessons from the implementation of the KAPAP model with stakeholders and the broader global readership. The objectives of KAPAP were to (i) empower farmer organisations and other stakeholder to influence planning, design, funding, implementation, monitoring and evaluation of extension services; and (ii) contribute to the development of agribusiness along commodity value chains through value addition and marketing.

METHODOLOGY

The KAPAP Model. The KAPAP model was designed from the strong desire to reform the public extension services and to address the challenges faced by the various approaches to extension services, used in Kenya over the past two decades (Anderson and Feder, 2003; Kibett *et al.*, 2005). The lessons learnt from such models and in particular the national Agriculture and Livestock Extension Programme (NALEP) and KAPP 1, were taken into account in the new design.

The key principles of the KAPAP model are participation, demand driven, pluralism, transparency and accountability in resource management, and cost-effectiveness with inbuilt mechanisms to ensure sustainability (KAPAP, 2013). The model is innovative in that as reported

by Connolly (2004) from his review of twelve case studies, there are no external prescriptions that are applicable to all countries. As such, the KAPAP model has been designed in an innovative way to meet the demands of small holder farmers in Kenya and the conditions set by the World Bank that the service interventions be undertaken through contracting in the context of community driven development (World bank, 2009). This, coupled with the need to address the attainment of the set performance indicators for the project provided the building blocks of the model. The key assumption was that the farmers would adhere to the set guidelines in the management of the grants and would be willing to invest in their priority value chains.

Area of implementation. The implementation of KAPAP's Extension Service Delivery model (KESDM) was done in twenty out of the 47 counties including; West Pokot, Trans-Nzoia, Busia, Kakamega, Butere Mumias, Siaya, Homa Bay, Kisii, Nakuru, Nyandarua, Nyeri, Embu, Meru, Makueni, Taita Taveta, Kwale, Kilifi, Tana River, Garissa and Wajir. The implementation that started in 2011 is expected to end in 2014. Only 2 divisions and 2 locations in each division were targeted in the first phase of the project, with projections of out-sculling to cover the whole county in the follow up phases. The implementation of the model brought together representatives from all sector players (sector Ministries, KARI, KENFAP) who form technical teams; namely, the County Technical Team (CTT) and Divisional Technical Team (DTT). These teams had at least 6 members each. The coordination in counties was done by a County Service Units (CSU) team of three officers (Coordinator, M&E officer and accountant) at the grassroots, and KAPAP secretariat (KS) of 13 member personnel at the national level. County Agricultural Steering Committee (CASC) composed of the heads of departments within the implementing agencies oversee the implementation processes.

The target farmers were enlisted into Value Chain (VC) specific Common interest Working Groups (CWGs) at the location level. Prioritisation of the target VCs was done using participatory approaches where the participation

of men, women and youth farmers was ensured. The common interest was the increased productivity and incomes as indicated by the service providers in the opportunity flagging poster that were to be accrued when a farmer invested in a particular VC. The membership to the CWGs was left open throughout the implementation period in order to attract as many interested farmers as possible. All the CWGs aggregated at the location level to form Common Interest Groups (CIG).

The CIGs received extension services from Service Providers (SPs) consortia that were competitively selected by the County Agricultural Sector Steering Committee (CASSC) through use of an expression of interest approach and evaluation of proposals developed by the successful SPs. A set of criteria was used to ensure that the selected SPs possess the right qualifications in terms of professionalism, diversity of expertise, capacities to address the farmers needs along the value chain continuum, as well as adequate grass root partners that reached out to all the targeted location with trainings and demonstrations

Value chain specific farmer management structures were established at various levels (CIG officials, location, division and county value chain official) to empower beneficiary communities to take charge of implementation of the Value Chain based Development Plans (VCDP), collect data, keep records and track the progress towards achievement of the set benchmarks. The County value chain officials managed the farmer grants that were availed by the project to the farmers to meet the SPs contract fees.

The implementation process of KAPAP was guided by operational procedures that were designed to ensure a harmonised process within the target counties. The development of the procedures took into account the key attributes of the extension model, agribusiness, beneficiary empowerment and participation, social and environmental concerns; and adoption of good practices that avoided perpetuation of dependency syndrome among beneficiaries.

The steps followed in the implementation process are described below:

- (a) mobilisation of the implementing agencies by the CSU office to constitute implementing teams at the county and divisional levels (CTT and DTT);
- (b) mobilisation of communities by the CSU team, CTT and DTT through farmer meetings or *barazas* to create awareness on the Project and to sensitise communities to participate in the project activities;
- (c) carrying out a Community Resource Assessment (CRA) by the DTT to establish the baseline status, identify priority enterprises, challenges, and farmers' needs towards increased productivity and incomes. Both secondary and primary data sources were used and participatory approaches and tools were used during primary data collection to ensure farmer involvement. The data collected were synthesized into problem statements that were used as the launch pads for competitive and accountable service delivery system;
- (d) identification of the appropriate service provider *consortia* was done using the normal government procurement procedure that included; advertisement through an "Expression of Interest (EOI)" that highlights the issues to be addressed in each value chain and the requirements for the service provision. The EOI responses were vetted and the selected SP firms developed and sent detailed technical and financial proposals to the CSU office in the County they intended to offer services. Vetting of EOI and proposals was done by County Agricultural Sector Steering Committee (CASSC) and CTT;
- (e) flagging of opportunities by each selected *consortia* involved development of investment opportunity posters for each target value chain by the SP and mounting the posters in appropriate places within the county accessed by the farmers. A community *baraza* was held at least two weeks after placement of the posters to enable farmers express interest and enlist into Common Interest Groups (CIGs). Gender/social concerns were taken into account during these activities by ensuring that men, women and youth farmers participated and their voices were taken into account. A number of follow up meetings were held to accomplish start up activities that included; negotiations on service delivery road map, putting in place the necessary CIG management structures, developing the group constitution and CIG registration with the department of social services; and
- (f) holding a participatory planning workshop (PPW) at the County level to plan the implementation of the service delivery process that was attended by CSU office, the DTT/CTT, SPs and CIGs representatives. The activities undertaken during this workshop included:
 - (i) negotiations on service delivery road map which involved identification of the value chain challenges and opportunities;
 - (ii) development of Value Chain based enterprise Development Plan (VCDP) and their time-bound implementation schedules. This involved drawing a work plan on the trainings and demonstrations to be undertaken;
 - (iii) development of the specific enterprise development budgets negotiating on the cost of services and setting of the payment benchmarks;
 - (iv) setting up the farmer grant management structures that involved the farmers' representatives electing their County value chain officials. The 30% gender rule as stipulated in the Kenya constitution was adopted during these elections as well as all CWG/CIG elections to ensure the vulnerable groups get elected; and
 - (v) signing of contracts between the SP consortia and County value chain officials. This involved development of a contract document that summarises the agreements made during the negotiations in the set format by the CSU office that is signed by the SP and VC officials and witnessed by the CSU coordinator.

Implementation process. The implementation started with the transfer of farmer grant funds from KS to value chain specific bank accounts, opened and managed by the County value chain

officials. These funds were used for payment of services offered to the CIGs by their service providers. Payment was done in installments of 10, 20, 30 and 40% that were pegged on achievement of predetermined outcome indicator benchmarks (productivity and incomes realised by a CIG), as agreed during the PPW. Payment of the first installment was done immediately after signing the contract to enable SPs meet their operational costs in order to start the implementation. The rest of the payments were based on actual outcomes achieved by the beneficiaries as a result of SPs' interventions. As such, the SP had to concentrate on high value interventions that earned higher and quicker returns to the farmers in order to receive his/her payment.

Monitoring and evaluation. The monitoring and evaluation (M&E) exercise involved the beneficiaries as the owners and managers of the grant. Each farmer kept records on his/her productivity and sales, and was expected to avail these data to the CIG secretary for onward transfer to the CSU M&E officer through the laid down farmers' structures. The same data were used by the County value chain officials and the SPs, assisted by the CSU to monitor the achievement of the set benchmarks. A project Management Information System (MIS) was designed at the start of the project to capture and document gender disaggregated data in regard to beneficiaries' details (farmer's names and contacts, baseline status), and their progressive achievements on production and incomes. The data collected from the farmers was entered into the MIS system at the CSU office and exported to KS. The other M&E structures included inbuilt tools within the implementation processes, regular monitoring exercises by KS and CSU, as well as quarterly and annual reports by the CSU and SPs.

Major achievements. A total of 109 SP *consortia* were contracted in January 2012 to offer services to the farmer beneficiaries in the 20 target Counties along the value chains of 36 priority agricultural enterprises (Table 1). The total contract fee (farmer grants) for the first 12 months contract period was U\$1,826,176. However, by the time of

this study, majority of the SPs had not achieved all their set benchmarks and were still offering services to their farmers. The following section outlines the achievements made within 15 months implementation period.

Number of participating farmers. A total 4,355 common interest working groups were formed with an initial membership of 63,839 (males = 58.2%, females = 41.8%) that gradually increased to 118,865 (males = 57%, females = 43%) (Table 1). Trans-Nzoia county had the largest membership of 14,124 members (males = 63%, females = 37%) and Homa Bay the least with 1,817 (males = 57%, females = 43%). Local Poultry had the highest membership of 22,537 (males = 45%, females = 55%); followed by dairy cattle with 20,338 members (males = 61%, females = 39%).

Grants payments to the SPs. The total payment to the 109 service providers by the end of the 12 months contract period, as per the set benchmarks, was U\$ 880,744 representing 48% of the total cost. However, the payment rate improved to 62% (U\$ 1,125,352) at the end of 15 months period (Table 2). Only 24 SPs *consortia* had received all their payments, with the best performing County being West Pokot

Earnings made by the beneficiaries. The total earnings achieved by beneficiaries by the end of 15 months period was U\$44,118 million out of the expected U\$ 93,259 as agreed upon in the contracts. The SPs interventions were (i) organising farmers for collective marketing leading to more bargaining power and better prices; (ii) linking farmers to better markets or buyers; (iii) introducing new marketing approaches such as sale of bananas by weight rather than bunches; and (iv) value addition on produce. Table 3 shows the annual baseline and the total earnings of 14 enterprises during the contract period.

Volume of produce sold. The increase in earnings, alongside capacity building towards the end of 15 months period, increased quantity and quality of produce and linking farmers to input suppliers (seed and feeds), veterinary services and credit facilities which triggered an increase in production

TABLE 1. Beneficiary membership across CSU, value chains/enterprises for the implementation of the KAPAP in Kenya

CSU	Beneficiaries across counties by gender				Beneficiaries across value chains by gender				
	No. CWGs	No. of farmers	M%	F %	Value chain	No. CWGs	No. of farmers	M%	F %
Busia	306	6,582	53	47	Green grams	57	1,556	41	59
Butere-Mum.	187	5,581	51	49	Groundnuts	135	3,145	45	55
Embu	274	5,171	61	39	Soya beans	41	973	47	53
Garissa	55	1,648	49	51	Cassava	76	1,856	46	54
Gucha	359	8,456	63	37	Peas	69	2,266	59	46
Homa Bay	137	1,817	58	42	Sorghum	89	2,245	54	46
Kakamega	204	3,928	54	46	Maize	69	5,503	64	36
Kilifi	207	3,865	45	55	Cassava	76	307	38	62
Kwale	204	6,098	60	40	Peas	69	94	33	67
Makueni	191	6,564	42	58	Sorghum	89	5,609	72	28
Meru Central	194	5,432	50	50	Maize	69	8,385	56	44
Nakuru	120	2,785	58	42	Black beans	16	712	62	38
Nyandarua	319	10,218	63	37	Grain Amaranth	8	697	67	33
Nyeri	340	10,107	51	49	Mango	222	1,631	73	27
Siaya	417	7,962	57	43	Banana	384	6,940	51	49
Taita Taveta	174	6,622	60	40	Passion fruit	36	202	46	54
Tana River	138	2,115	85	15	Pawpaw	29	797	46	54
Trans Nzoia	300	14,124	63	37	Citrus	41	3,320	71	29
West Pokot	184	6,102	83	17	Potatoes	194	1,172	95	52
Wajir	129	3,688	32	68	Sweet potatoes	8	2,537	45	55
118,865	4,439	118,865	57	43	Afr Be Chilli	68	1,923	49	51
					Tomatoes	128	5,002	63	37
					Bulb onions	16	20,338	62	38
					Local poultry	781	2,426	39	61
					Rabbit meat	76	5,178	75	25
					Shoats meat	127	7,021	78	22
					Dairy cow	568	829	41	59
					Dairy goat	136	990	20	80
					Fish	318	715	37	63
					Apiculture	387	417	71	29
					Aloe (20)	20	1,556	48	52
					Dairy camel	36	3,145	76	24
					Camel meat	26	973	63	37
					Gums & resins	15	1,856	67	33
					L. Vegetables	137	2,949	48	52
					Farm forestry	14	109	76	24
					Rice	8	141	63	37
					Beef	11	475	159	67
					Beans	4	175	79	55
					Sunflower	316	141	58	42
					Avocado	96	89	48	52
					Total		118,865	57	43

CSU = County Service Units, CWGs = Common interest Working Groups, M = Male, F = Female

TABLE 2. Grants payments to the extension service providers and beneficiary earnings at the end of 12 months during implementation of the KAPAP in Kenya

Installments (%)	No. of consortia paid	Amount paid (US\$)	Total earnings at each payment (US\$)
10	109	176,475	Paid on signing the contract
20	84	294,121	11,827,443
30	58	247,062	14,617,729
40	24	141,186	9,018,724
Total	-	858,844	35,463,896

TABLE 3. Earnings made by the beneficiaries for selected enterprises during implementation of the KAPAP in Kenya

Enterprise	CIG membership	Baseline annual earnings (thousand US\$)	Total Earnings achieved in 15 months (thousand US\$)
Apiculture	7,021	306	790,240
Bananas	8,385	1,850	4,091
Bulb onions	1,172	1,273	1,942
Dairy cow	20,338	7,568	6,372
Fish	5,178	192	544
Groundnuts	3,145	180	459
Local poultry	22,535	567	1,935
Mangoes	5,609	610	887
Rabbit meat	1,923	87.9	51.5
Aloe vera sap	829	3.36	28.3
Soya beans	973	15.4	110.3
Sorghum	2,245	162	70.4
Local vegetables	2,949	10,069,833	111,751,930.6
Maize	5,503	187,857,080	474,680,346

CIG = Common Interest Groups

TABLE 4. Baseline data and production levels for selected agricultural enterprises. Achieved in 15 Months during implementation of the KAPAP in Kenya

Enterprise	Unit measure	CIG membership	Annual baseline production	Produce sold in 15 months
Apiculture	Liters of honey	7,021	320,632	304,054
Bananas	Bunches	8,385	1,224,330	2,441,697
Bulb onions	kg	1,172	2,784,876	2,861,948
Dairy cow	Liters	20,338	24,026,454	17,908,696
Fish	kg	5,178	310,853	714,811
Groundnuts	kgs	3,145	297,548	330,356
Local poultry	Numbers	22,535	258,697	901,273
Mangoes	Numbers	5,609	20,740,344	15,955,400
Rabbit meat	kg	1,923	2,165	6,332
Aloe vera sap	kg	829	342	2,392
Soya beans	kg	973	55,245	156,731
Sorghum	kg	2,245	86,274	310,899
Local vegetables	kg	2,949	677,656	2,827,313
Maize	90 kg bags	5,503	309,858	1,894,067

CIG = Common Interest Groups

TABLE 5. Return to investments for selected enterprises during the implementation of KAPAP project in Kenya

Enterprise	CSU	RI
Grains	Trans-Nzoia	261
Bulb onion	W. Pokot	200
Fruits/l.veges	Siaya	175
Dairy cow	Nyandarua	145
Snow peas	Nyandarua	127
Dairy cow	Gucha	113
Banana	Embu	103
Fruits/veges	Nyandarua	95
Fruits/veges	Gucha	80
Fruits/veges	Nyeri	45
Dairy cow	Nyeri	40
Apiculture	Busia	0.69
Apiculture	Homa Bay	1.01
Soya bean	Butere	1.49

CSU =County Service Units, RI = Return to Investment

TABLE 6. Return to investments and ranking for the target counties during the implementation of KAPAP project in Kenya

CSU	RI	Rank
Trans-Nzoia	187.18	1
Nyandarua	146.55	2
Siaya	98.78	3
Nakuru	52.46	4
Gucha	46.88	5
W.Pokot	35.17	6
Meru Central	28.41	7
Nyeri	23.83	8
Kwale	22.31	9
Tana River	21.02	10
Embu	17.93	11
Kilifi	17.19	12
Taita-Taveta	16.17	13
Makueni	14.74	14
Butere Mumias	11.90	15
Busia	11.57	16
Kakamega	7.10	17
Homa Bay	5.04	18
Wajir	1.19	19
Garissa	0	20

CSU = County Service Units, RI = Return to Investment

for the various enterprises (Table 4). Sorghum production increased by 72%, maize by 83.6 % and local poultry by 71.6%.

Returns to investments. An assessment of the overall cost effectiveness of the KAPAP model, using ratio of cumulative earnings of US\$ 44,118 million and the total cost of service delivery of US\$ 1,124,706, shows a Return to Investment (RI) of 39.4. Table 5 shows RIs across value chains and Counties, with maize in Trans-Nzoia reporting the highest RI (261); followed by bulb onions in West Pokot County (RI = 200). Apiculture in Busia County showed the lowest RIs (0.69). A ranking of the 20 project County units on the basis of their RIs shows Trans-Nzoia leading (RI = 187.18); followed by Nyandarua (RI = 146.55) (Table 6).

DISCUSSION

The findings from this study qualify the KAPAP service delivery model as a pragmatic model with attributes of pluralism, demand-drivenness, innovativeness, accountability and cost effectiveness. The model also has potential to improve the welfare of smaller holder farmers, reduce rural poverty and increase food production, a characteristic now widely accepted for judging the effectiveness of a good extension service delivery system. The design of such a system must also include a combination of strategies towards better access to resources and markets (CTA, 2011). The design and achievements of KAPAP meet all the qualities and indicators of good practice as identified in a Tegemeo's study (Muyanga and Jayne, 2006), where market linkage that is a key focus in the KAPAP model had scored the lowest for the extension systems assessed during that study.

Judging on such qualities, the model and its achievements have contributed highly towards the development of Kenya's agricultural sector and improvement of small holder farmers' livelihoods.

The approach used in this model is pluralistic as it brings together all the agricultural sector

players as implementing agencies (Ministries, KARI and KENFAP) and draws its service providers from both the public and private sector in form of consortia. The approach is also innovative in that payment of services is pegged on outcome indicator benchmarks, and the management of farmer grants and data collection are done by the beneficiaries.

This innovation, not only enhances accountability by addressing the challenges of public based systems where their failures are attributed to lack of accountability to clientele (Jock and Gershon Feder, 2003); but also empowers farmers to take charge of assessing the quality and effectiveness of the service.

The processes used to identify priority value chains and beneficiaries (mobilisation, CRA, flagging and enlisting into CIGs) were participatory, enabling the model to avail to farmers a basket of options in regard to targeted enterprises, and in ensuring that the extension services were demand-driven and met the farmers' needs. This approach has enhanced the participation of farmers as shown by the growth in CIG membership from the initial 63,839 (Males = 58.2%, Females = 41.8%) to the current 118,865 (Males = 57%, Females = 43%). This, together with gender mainstreaming efforts during prioritisation of value chains and use of a group approach, have resulted in improved participation of women in the project, unlike in past extension systems most of which lacked gender disaggregated data. This participation shows a gendered pattern reported earlier by NALEP (2009), that men prefer enterprises of strategic nature that result in high returns to investment. For the KAPAP model, bulb onions and tomatoes had the highest male membership (95% and 72%, respectively); while female membership was highest in subsistence level enterprises such as grain amaranth and black beans (67% and 62% respectively).

The model has also succeeded in addressing value chain continuum challenges by organising farmers to access inputs and markets as well as value addition and processing initiatives, particularly in dairy, honey and groundnuts. These achievements are attributed to the tapping of the elusive capabilities and talents from the private sector under the Public Private Partnership

(PPP) arrangements to complement what exists in the public sector. The agribusiness focused interventions resulted in an increase in beneficiary incomes as reported for all the enterprises; the most notable being maize (baseline-US\$ 2,210,083, achieved-US\$ 5,368,077) and local poultry (baseline-US\$ 566,717, achieved-US\$ 1,193,428). The percent increase in these earnings, (i.e. 196% for maize and 111% for poultry) far surpasses the 5% target in the projects results framework (Project Appraisal Document, 2009). The overall impact of these earnings towards poverty reduction and improvement on beneficiaries' welfare cannot be over emphasized.

The increased incomes reported here contribute towards transforming smallholder agriculture from subsistence to agribusiness ventures by making the targeted enterprises economically viable. This transformation fits well in the current recognition that subsistence farming should be viewed as a temporary phenomenon that needs a transition through availing small holder farmers with high-quality agricultural advice (CTA, 2011). However, to ensure sustainability of these impacts, further interventions are needed to formalise the market linkages established through the SPs interventions, by signing of legal agreements such as tender documents between CIGs and the buyer or through contracted farming.

The KAPAP model's focus on markets has triggered increased production as envisioned in the design process, resulting in a drastic increase in production of traditionally subsistence enterprises such as peas in Nyandarua and sorghum in Meru central, whose production levels changed by 84.9 and 72%, respectively. The impact of this on the household and national level food and nutritional security cannot be underestimated. Lack of remunerative markets and marketing channels has been an impediment to farmers' efforts towards increased production.

The model is also cost effective as shown by its return to investment of 39.4. This is not a mean achievement for agricultural development in a developing country like Kenya that depends on donor funding for its development efforts. It is important to note that just as recommended by the Journal of Extension (undated, www.joe.org): most extension costs within the model were

incurred upfront and the cost-benefit multiple will continue to increase as the interventions are adopted in a sustainable manner. This cost effectiveness was also enhanced by the use of the CIG approach that enabled the project to reach a large number of farmers within the 15 months, compared to the past individual farmer based extension. The increase in benefits to members is expected to trigger an increase in the CIG membership.

The achievements of KAPAP's extension model, as discussed in this paper, qualify the model's inclusion among other feasible extension approaches or "islands of success" that with minimal modifications, have the potential to transform the agricultural sector in developing countries in Africa. However, just like in most other approaches reviewed in the World Bank Discussion Paper no 45, the KAPAP model is not a 'magic bullet'; as such requires appropriate strategies to ensure its sustainability beyond project period.

Exit plan for KAPAP extension service delivery model. In recognition that farmers in Kenya are accustomed to accessing agricultural extension services free of charge from the public extension systems, NGOs and private sector actors, the KAPAP project envisages sustainability challenges on its model beyond project funding. From this realisation, the project designed some safe exit strategies that include establishment of legal entities and empowerment of beneficiaries to adopt farming as business. With the assistance of their service providers, the beneficiaries have been facilitated to develop co-operative based and value chain specific business plans that focus on pursuing high level interventions. These include enhancing access to inputs and markets, as well as diversification of products through value addition and processing. The membership for such co-operatives target both the CIGs and other new members to be recruited through out-scaling efforts within each County.

Cooperatives are legal business entities and the registration and buying of shares by the beneficiaries will foster ownership and contribute highly towards the sustainability of the service delivery system as well agricultural sector transformation. The beneficiaries and their

leaders have also been empowered through capacity building and participation in farmer fora spearheaded by the Kenya Federation of Agricultural Producers (KENFAP) to enable them articulate their issues and take charge of their needs including extension service delivery.

The project set aside some funds to co-finance the implementation of these business plans, while the rest of the funding will be raised through share holding capital from members and other financial arrangements. It is also expected that the business plans will attract funding from the County government and other funding agents within their localities. Further exit plan strategies will be identified during the models evaluation exercise that will be implemented before the end of project.

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