Fact Sheet • TEGEMEO AGRICULTURAL MONITORING AND POLICY ANALYSIS (TAMPA II) PROJECT – KENYA

1. Cooperating Institutions

Tegemeo Institute/Egerton University (Tegemeo)
Kenya Agricultural Research Institute (KARI), 1996-1999 period
Agency for International Development, Bureau for Economic Growth, Agriculture and Trade, Office of Agriculture and Food Security (EGAT/AFS) (USAID/Kenya)
Department of Agricultural Economics, Michigan State University (MSU)

2. Researchers Involved

Tegemeo Institute/Egerton University Researchers and Support Staff: Wilson Nguyo (Director, Tegemeo Institute), Gem Argwings-Kodhek, James Nyoro, Joseph Owuor, Winnefred Luseno, Mary Kiiru, Mercy Kamau, Julius Kilungo, Tony Sisule, Eliot Mhgenyi, Bette Landan, Bridget Ochieng, Francis Karin, M. Gitau, and Francis Sumba

MSU Faculty and Staff: Thomas Jayne (Co-Principal Investigator), Eric Crawford (Co-Principal Investigator), David Tschirley, Michael Weber, Jean-Charles LeVallee, Takashi Yamano, and Margaret Beaver

Kenya Agricultural Research Institute Staff: Lawrence Mose, Daniel Karanja, and P.W. Maingi

MSU Graduate Students: Gerald Nyambane, Daniel Karanja, Thomas Awuor, Maria Wanzala, and Melody McNeil

USAID Project Managers: Margaret Brown, Julius Kilungu, and Maria Mulei

3. Objectives of the Research and Policy Outreach Activities

The collaborative partnership between the Tegemeo Institute for International Development (Tegemeo) and Michigan State University's Department of Agricultural Economics (MSU) has three primary objectives:

•   to build local Kenyan capacity in the design, implementation, and analysis of household-level data collection for policy analysis and priority-setting purposes;

•   to provide baseline information and subsequent monitoring of smallholder production patterns and crop mix, input use, marketing behavior, measures of farm productivity, farm and off-farm incomes, food purchases and

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consumption, and other basic household-level information necessary to assess the impacts of changes in the agricultural policy environment on selected socio-economic and regional groups in Kenya; and

- to identify strategies for promoting the productivity of smallholder agriculture, growth in smallholder real incomes, and food security. The research/policy analysis focuses broadly on three themes:

  1. analyzing the effects of alternative national agricultural marketing, pricing, and trade strategies on commodity trade flows, smallholder welfare, producer and consumer price levels, and household food security;

  2. identifying strategies to promote productivity growth and competitiveness throughout the entire food system, through the strengthening and coordination of markets – most notably for commodities, inputs, and finance, in a sustainable manner; and

  3. identifying strategies to promote commercialization and raise smallholder real incomes through public and private investments that raise rural productivity as well as reduce the cost and instability of staple food in deficit areas.

A key premise of the Tegemeo/Egerton/MSU collaboration is that before 1997, many agricultural policy issues in Kenya were being debated on the basis on national production trends, price movements, and synthetic crop budgets. There was an undeniable shortage of solid information on rural household behavior, which provided no empirical foundation for discussion of effects of policy on various types of rural households. The national statistical office (Central Bureau of Statistics) has not published statistics from an agricultural survey since 1992, several years before comprehensive agricultural market reforms were implemented.

One of the TAMPA Project's primary objectives was to develop the local capacity in Kenya to design and implement large-scale household surveys capable of providing an empirical foundation for discussions of agricultural policy effects. Tegemeo Institute has a longstanding capacity in doing field research, mostly collection of composite farm budgets, production and marketing information, but had not implemented a large-scale nationwide household survey, nor developed the software capacity to enter, clean, and analyze such data. Since 1997, Tegemeo Institute has increasingly developed the capacity to implement large-scale household surveys and generate solid analysis using this data base. This has increased the stature and exposure of the Institute, and has created important research opportunities for local faculty and students at Egerton University.

One key premise of the TAMPA project was that Kenyan policy makers and analysts lacked access to a representative picture of farmer, consumer, and trader behavior and welfare. The last government published report (from the Central Bureau of Statistics Agricultural Survey) on the agricultural sector was based on data from 1992, before the implementation of key agricultural sector reforms. In the absence of up-to-date information on how rural and urban households were responding to the reforms, much of the policy discussion in the mid-1990s in Kenya was on the basis of conventional wisdom about the way that the rural economy worked.

Starting in 1997, Tegemeo Institute and MSU have conducted and analyzed large household-level surveys and trader surveys which have begun to provide a more objective vantage point for discussions on agricultural policy and poverty reduction strategies. The TAMPA household data have been made available for wide use by other users and researchers in Kenya. In more recent years, and with this newly-acquired empirical base of information, Tegemeo has expanded its outreach activities, and has attempted to foster a process of dialogue and consideration of empirical findings among the stakeholders in the agricultural sector.

For over a decade now, Kenya's agriculture and the national economy continue to perform poorly. Agricultural productivity is low and declining, and its competitiveness in both domestic and export markets has worsened. As the pace of globalization picks up with the implementation of the trading rules of the Common Market for Eastern

and Southern Africa (COMESA), East African Community (EAC), and World Trade Organization (WTO) to which Kenya subscribes, the survival and profitability of Kenya's agriculture will require marked improvement in productivity and competitiveness. This poses a major challenge for agricultural policy. At the same time, poverty has been increasing and deepening. Although agriculture provides about 25% of the nation's gross domestic product, a further 25% of GDP is derived from agricultural services such as transportation, processing, and marketing. Seventy-five percent of the population is directly or indirectly employed in agriculture. Poverty reduction, therefore, is dependent on marked improvement in agricultural productivity and growth. This growth must have a direct impact on household income. The need for reliable information and data based on empirical research and sound analysis for policy decision making is even greater and more urgent than ever before.

4. Research Approach

Methods

The project emphasizes the monitoring and assessment of smallholder welfare through household-level data, collected annually, or in some cases, biannually. The first survey, implemented in 1997 and containing 1,548 households, was designed to obtain nationally and provincially representative baseline data on household indicators in each of Kenya's provinces containing significant crop cultivation. A second survey, revisiting a subset of 615 of these households, was completed in October 1998. A third survey round, revisiting the full sample of households visited in 1997, was implemented in June 2000. This panel data set provides the ability to track changes in household behavior and welfare in numerous areas of the country over a three-year time frame. Future surveys will be geared to monitor subsequent evolution of crop and livestock production and income patterns over the next phase of research under TAMPA II (projected time frame 2001-2005).

Various analytical approaches have been utilized under the project to suit the research objectives presented above. Please refer to the research output section of the Web page (http://www.aec.msu.edu/agecon/fs2/kenya/index.htm) for project reports, which contain details on methods specific to each study.

Research Issues

Current knowledge gaps about the behavior of smallholder households hinder the identification and adoption of empirically-based food policies and targeting programs to promote food security and productivity growth. By closing these knowledge gaps through the household-level information, the proposed project provides the empirical foundation to inform future government policy, donor programs, and NGO activities related to raising smallholder productivity and real income growth and food security.

Several key research activities undertaken to date have included:

Activity #1:   Analysis of farmer production patterns and their determinants.

This activity has been important for understanding how food price stabilization programs, trade controls, and changes in marketing margins associated with liberalization, would affect farm production and marketing incentives in various regions, and substitution effects between crops. Household level data has also enabled the project to identify factors associated with household agricultural productivity. This information has been important in the task of identifying the key constraints on smallholder productivity growth and strategies required to relieve them.

Activity #2:   Analysis of interactions between food markets and cash crop production.

Emerging evidence indicates that there are strong economies of scope between food and cash crop production. Cash crop promotion has often been associated with the successful coordination of input delivery, credit, and crop

sale for food crops. However, there has been little effort to date to comprehensively review and identify, based on a wide range of case studies, how donors and governments would actually promote such synergies.

The reliability and efficiency of food markets critically affect farmers' willingness to forego food production in favor of higher-valued cash crop and activities. If food markets do not make reliable supplies of food available at tolerable prices, farmers may not exploit the potential opportunities for increased incomes and foreign exchange that higher-valued cash crops may provide. This activity has been important in identifying how production of higher-valued crops and nonfarm activities has responded to changes in the price and stability of food supplies.

We are also beginning to learn more about constructive and meaningful ways by which the private sector can configure its operations in the post-liberalization environment to promote smallholder agricultural productivity. Recent research is showing that there are a wide variety of arrangements through which private marketing and processing firms have related to smallholders, each differing in their level of investment and support of smallholder production. The findings indicate that there are major differences in performance (i.e., intensity of input use, crop productivity, and smallholder incomes) across different types of cash cropping arrangements involving private firms and smallholders. The more successful cash cropping arrangements between smallholders and private firms have a markedly positive effect on food crop productivity and smallholder incomes. This emerging empirical work is beginning to strongly indicate that commercialization of smallholder agriculture, featuring high-valued cash crops, may have major spillover benefits for food crop productivity.

However, the ability to capture these synergies appears to depend crucially on how the private sector configures its operations vis à vis smallholders. The emerging evidence indicates that the ultimate impact on smallholder productivity differs according to the ability of the private sector and the state to craft institutional/contractual arrangements that contribute to mutual win-win situations for both farmers and the marketing firms. These arrangements cover items such as the level of infrastructural investments made by firms in support of smallholder production, farmers' access to credit and inputs, contractual and enforcement mechanisms that allow the firm to recover its credit and inputs extended to farmers, the process that determines the level of prices and price risk borne by farmers, and strategies to maximize processing capacity utilization. In the post-reform environment in Africa, the private sector and governments are still learning about what kinds of arrangements are sustainable and potentially productive enough to justify risking large capital outlays. A major task for future research is to understand better how successful commercialization arrangements linking smallholders and marketing/processing firms have been structured so that their successful ingredients can be replicated and incorporated more broadly into commercialization strategies in other regions.

Activity #3: Policy-related impediments to agricultural productivity growth in Kenya.

The main hypothesis of this research is that a smallholder's ability to further increase crop productivity and commercialization will require a further shift into high-valued crops and more intensive use of productivity-enhancing inputs. However, there are two key processes at work that impede this transformation. First, a key problem with intensifying crop production relying only on domestic demand is that they suffer from inelastic demand (beyond some point of saturation of the domestic market). This will make sectors relying only on domestic demand vulnerable to large price swings/risks and declining returns if production capacity is geared-up only for limited local markets. This underscores the importance of developing wider market outlets with regional and international markets, and calls for greater focus on developing the infrastructural investments and market linkages with the wider world, which will increasingly involve the participation of bigger firms with deeper pockets, and market-friendly investments by governments.

The second force impeding the transformation to a more commercialized higher-valued crop sector in Kenya is the high cost of food – the price of maize is currently about US$200 per ton in most areas. If food markets are unreliable and impose high costs on rural consumers, then smallholders (especially the resource-constrained ones) will have little incentive to shift to high-valued crops and make their families dependent on unreliable food markets

to acquire their residual food needs. Important policy barriers are still in place that exacerbate this situation (e.g., the current import tariff on maize in Kenya). The key point here is that reducing costs and risks in the food system is a precondition to support transformation and productivity growth through specialization into high-valued crops.

In light of these considerations, this activity has been designed to identify the major policy factors contributing to high food prices in Kenya, and conduct simulation analyses of the effects of removing these policy constraints. Analytical issues have included the impact of permanently removing the maize import tariff on maize price levels; effects on cropping patterns and potential substitution into higher valued commodities; and the net impact on smallholder farm revenue and food expenditure patterns.

> *Activity #4: Commodity and input sub-sector studies (e.g., horticulture, maize, livestock, pyrethrum, etc.) to identify strategies to promote the development and performance of the agricultural system in Kenya.*

These commodity-subsector activities have been designed to assess the performance of various commodity and input systems in Kenya, identifying major constraints and bottlenecks that hamper system performance based on insights from household-level and market-level data analysis. The activity has examined interrelationships between input supply, production, distribution, processing, consumption, and pricing to assess the broader implications of food pricing, marketing, and stabilization policies for the development of the food system.

> *Activity #5: Poverty monitoring and poverty alleviation strategies.*

The Kenya government, in conjunction with its development partners, has embarked on a poverty reduction plan as expounded in the Poverty Reduction Strategy Paper (PRSP). Various donors and NGOs also have initiated efforts to reduce poverty. However, much of the discussion on poverty in Kenya is undertaken with very little empirical data about the nature and causes of poverty at the micro household or village level. This means that the poverty dialogue is couched in very general terms that do not allow for clear measurement of poverty or the effects of poverty alleviation strategies. Tegemeo and MSU have begun work on the measurement and definition of poverty in rural Kenya. This involves undertaking participatory poverty assessments combined with analytical survey data generated through household and enterprise level questionnaires. The resulting data can be analyzed to yield categories of households based on variables such as income, major economic activities, and access to various social amenities including infrastructure. By explaining differences in the level of poverty across households, this analysis may provide important insights for the development of poverty reduction strategies in Kenya.

The government and most NGOs involved in poverty alleviation began implementing poverty reduction programs in 2001. Using data generated under TAMPA I, MSU and Tegemeo produced, refined, and improved methods for estimating household incomes and income components using easy-to-collect proxy variables. This method is referred to here as "income proxy" models, first developed in Mozambique, and now adapted to use in Kenya. These methods also allow the tracking of household assets index meant to track household wealth. By the end of TAMPA I, MSU and Tegemeo had fully developed the models and were finalizing supporting procedures that allow for the generation of statistically defensible estimates of household incomes and income components within two months of data collection, at a small fraction of the cost of collecting and processing full income surveys. By lowering the cost of this work, these methods allow government, donors, and other interested parties to monitor these variables more closely over time. These methods provide the means to cost-effectively gauge how the rural economy is evolving. Having this information from a representative sample on a regular basis, rather than every 3-4 years, should help government and donors design and adapt policies and programs that are more attuned to the real needs of rural households.

An additional component of these household monitoring surveys will be the monitoring of perceptions and opinions on key issues of agricultural and rural development policy. Such information has already proven extremely valuable in national policy discussions. Representative and timely information on how the public views key

economic issues would make the public's views more transparent, and would make it more difficult for policy positions to be taken that in fact are not supported by most Kenyans. Moreover, the survey results can be stratified by education level, region, income level (due to the use of income proxy models), and other characteristics that can be found to distinguish between peoples' perspectives. Depending on sample size, there may be a possibility of discrete choice analysis to identify factors associated with citizens feeling one way or the other about a particular issue. This kind of research and dissemination has in other countries proven extremely useful in policy discussions.

Activity #6: The effects of adult death on agricultural production and household behavior in rural Kenya.

Analysis is continuing on the effects of prime-age adult death caused by the onset of AIDS on rural households in Kenya. Using a two-year panel of 1,422 Kenyan households surveyed in 1997 and 2000, we measured how prime-age adult mortality affects rural households' size and composition, agricultural production, asset levels, and off-farm income. First, the paper uses adult mortality rates from available data on an HIV-negative sample from neighboring Tanzania to predict the number of deaths that might have been expected in the absence of HIV, and compares this to the number of deaths actually recorded over the survey interval in the Kenyan sample. Based on this procedure, only a quarter of the prime-age female deaths in the 25-34 age range and about half of the male deaths in the 35-44 year age range could have been predicted on the basis of the HIV-negative Tanzanian adult mortality rates. In the Nyanza area, the discrepancies were even larger over a broader number of age/sex ranges. This provides a strong indication that AIDS accounts for a large proportion of the recorded deaths for these age/sex categories, particularly in the Nyanza area.

Next, using a household fixed-effects model that controls for time-varying effects, we measured changes in outcomes between households afflicted by adult mortality vs. those not afflicted over the three-year survey period. The effects of adult death are highly sensitive to the gender and position of the deceased family member in the household. Households suffering the death of the head-of-household or spouse incurred a greater-than-one person loss in household size. The death of a male household head between 16 and 59 years is associated with a 68% reduction in the net value of the household's crop production. However, results are sensitive to the age-ranges defined. Female head-of-household or spouse mortality causes a greater decline in cereal area cultivated, while cash crops such as coffee, tea, and sugar are most adversely affected in households incurring the death of a prime-age male head. Off-farm income is also significantly affected by the death of the male head of household, but not in the case of other adult members. The death of other prime-age family members is partially offset by an inflow of other individuals into the family. Other prime-age family members' mortality has less dramatic effects on the households' agricultural production, assets, and off-farm income. Lastly, there is little indication that households are able to recover quickly from the effects of prime-age head-of-household adult mortality; the effects on crop and non-farm incomes do not decay at least over the three-year survey interval.

The paper concludes by discussing the implications of these findings for agricultural research and extension programs as well as for safety net programs designed to cushion the impacts of prime-age adult death.

Efforts are underway in 2003 to estimate the effects of prime-age adult death on child enrollment in primary school. Given the importance of education in the structural transformation process, it is important to understand how prime-age adult death caused by AIDS is affecting the long-term development of human capital in Africa. An initial Tegemeo Working Paper should be available in mid-2003.

Activity #7: The role of rural labor markets in rural poverty alleviation.

For many years, Kenya has been undergoing a process of subdivision of smallholder land parcels. The result is that today, smallholders in the lowest land quartile own on average only 0.1 acres per capita, while those in the top quartile average about 2.7 acres per capita (KAMPAP data). Households with 0.1 acres per capita cannot possibly sustain themselves through agriculture, and must depend substantially on off-farm income, including wage labor. Rural labor markets are thus crucial to poverty alleviation in Kenya, yet little empirical analysis has been done

regarding these markets. Types of rural employment available, wage rates, and factors influencing wage rates are some of the issues to examine.

This research topic will first use the 1997 KAMPAP and 2000 TAMPA data sets to critically describe land allocation and the role of rural wage labor in smallholder income strategies, including how this role differs among income-rich and income-poor households, and between land-rich and land-poor households. It also will examine how the role of wage labor changed for these households between the two periods and assess the extent to which rural labor markets have contributed to poverty alleviation. Finally, it will identify specific strategies that the government could adopt to increase wage labor opportunities in rural areas and, especially, to increase the access of poor households to those opportunities.

5. Research Implementation

Collaborative research between Egerton University, MSU, and KARI began in April 1997 under the Kenya Agricultural Monitoring and Policy Analysis Project (KAMPAP). Research between Egerton and MSU continued in January 1999 with the second phase of research under the Tegemeo Agricultural Monitoring and Policy Analysis (TAMPA I) project. Funding for this collaboration was renewed under the TAMPA II Project, with a four-year time from July 24, 2001 to July 23, 2005.

The proposed project stresses the "joint-products" approach, whereby research findings, local training and capacity building, and dissemination of policy implications to decision makers are all joint outcomes of an ongoing applied research process. Activities have revolved around three principal axes:

1. **Collaborative Research**. Consistent with the "joint product" approach, Tegemeo, KARI, and MSU collaborate to provide input into the design of the research program;
2. **Capacity Building**. The opportunity for analysts at Tegemeo, KARI, and MSU to develop research capacity and skills in the process of undertaking collaborative analysis is an important goal of the "joint products" approach; and
3. **Policy Dialogue.** The project emphasizes ongoing dissemination of policy-relevant research results. Methods used to achieve this goal include: (a) stakeholder workshops, in which a broad range of commercial interests in a particular commodity subsector are organized to discuss researchers' analysis and policy implications; (b) more formal conferences and workshops; (c) dissemination of interim reports on key results to relevant government agencies, USAID, and other Kenyan and donor organizations to help inform discussion on agricultural production, marketing, and trade policy; (d) presentation of results at parliamentary meetings and other government policy fora; and (e) contribution to broad local understanding by presenting project findings in local Kenyan fora including newspapers, magazines, and through other local media.

A more recent approach taken under the TAMPA project has been to increasingly conduct outreach and policy dialogue activities through stakeholder meetings and participation in internal government discussions on key commodity policy issues. In some cases, Tegemeo has acted as vehicles through which various stakeholders have contributed to policy papers and other documents drawn by government. The directors of such organizations have periodically disseminated important draft policy documents to Tegemeo for comments and suggestions, which are then passed back to the directors. This process is designed to provide informal assistance to government policy makers in a low-key way, which in some cases enables policy makers to draw upon Tegemeo's work to a greater extent than would otherwise be the case.

Another area where Tegemeo is concentrating its effort to influence policy is that which involves education and sensitization of policy makers. Tegemeo has organized seminars and workshops with the parliamentary committee such as the Agriculture, Lands and Environment committee. In these meetings, parliamentarians are exposed to

research findings estimating the potential gains or the negative effects of certain policies that are usually under consideration before such issues are presented to the floor of parliament for discussion. So far, Tegemeo has made presentations on maize, coffee, tea, sugar, and cotton at such parliamentarian meetings. Prior to the presentations to parliamentary committees, Tegemeo concentrated on organizing seminars for parliamentarians from areas producing certain commodities. Seminars have been held with the parliamentarians from the coffee and maize growing areas.

Recently, the government has requested that Tegemeo participate in the formulation of a Rural Development strategy to complement the development of the Poverty Reduction Strategy Paper currently being formulated. Tegemeo is contributing to both documents. Tegemeo is also assisting the private sector contribute to the debate on the ongoing consultation to finalize the poverty reduction strategy paper.

Tegemeo and MSU have also written several articles in the print media that touches on key policy issues relating to both producers and consumers. Articles have appeared in the *Daily Nation*, *East African Standard*, the *People*, the *East African* weekly newspaper, *Market Intelligence* bi-weekly magazine, and others. These articles have solicited public debate as evidenced by letters to the editors in these same newspapers, effectively opening up key policy issues to mainstream consideration and debate.

6. Outputs to Date

Outreach and Extension Presentations

November 2002. The Kenya Dairy Board (KDB) organized a seminar on Milk Marketing and Management of Surplus Milk on 7 November. The seminar was attended by key stakeholders in the industry including consumers. Task forces were formed to consider issues related to milk collection networks, strategic reserves, and market promotion. Tegemeo continues to work closely with KDB and provides frequent analytical support, often based on analysis using the TAMPA II data. Milk now provides a source of livelihood and income for over 600,000 small-scale farmers in Kenya.

September 2002. The Effects of Adult Death on Rural Households in Kenya. Presentation by Jayne to the Ministry of Health, Ministry of Agriculture, and NGO representatives, 19 September, USAID/Kenya, Nairobi.

September 2002. Nyoro provided information to members of Parliament, especially the Parliamentary Committee on Agriculture and Natural Resources, on various agricultural related bills, including Coffee Farmers and their Members of Parliament Seminar which was organized by Abantu in Mombasa, 10 September.

August 2002. Based on Tegemeo dairy industry study, using the Tegemeo/MSU household survey data, a stakeholder seminar was held on 27 August in Nairobi. The seminar was opened by the Director of Agriculture and participants included farmers, processors, distributors, representatives of the Kenya Dairy Board, USAID, Ministry of Agriculture, and local researchers. The meeting achieved a general consensus on the need for a comprehensive dairy industry association that could lobby policy makers and influence the development of policies and laws governing the industry.

August 2002. Argwings-Kodhek and Nyoro made a presentation to a Joint Donor Group at the European Union offices on key agricultural input marketing policy options in Nairobi, Kenya, based on analysis generated from TAMPA I and II.

July 2002. Nyoro presented a paper by Nyoro, Jayne, and Kelly on regional fertilizer policy options at the ECAPAPA Fertilizer Policy Workshop, 12-14 July. Entebbe, Uganda. This paper was included in ECAPAPA's *Fertilizer Policy Proceedings* in 2002.

July 2002. At the request of the Permanent Secretary in the Ministry of Agriculture, Tegemeo staff participated in a preliminary study of the prevailing situation on Rural Finance in Kenya. A stakeholder seminar was held in July in Nairobi.

May 2002. Argwings-Kodhek provided information to members of Parliament, especially the Parliamentary Committee on Agriculture and Natural Resources, on the Sugar Bill, organized by Abantu Foundation in Mombasa, 18-20 May.

September 2001. Egerton University/Tegemeo/MSU Conference on Agricultural Competitiveness and Trade for Growth and Poverty Reduction, Agricultural Finance Corporation Institute, Langata, Kenya, 6 September. Presentations and discussion of Tegemeo/MSU work on fertilizer marketing, and issues of competitiveness in the maize, dairy, pyrethrum, and horticulture sub-sectors.

May 2001. Nyoro participated in Ministry of Agriculture Forum on the Kenya Rural Development Strategy, as input into the Poverty Reduction Strategy Paper, Nyeri, Kenya. Tschirley and Jayne also participated.

March 2001. Argwings-Kodhek participated in Ministry of Treasury retreat at Maasai Mara to coordinate activities leading up to presentation of the national Budget, Poverty Reduction Strategy Paper, and the National Development Plan (2001-2007).

February 2001. Nyoro presented comments on sessional paper and bill on restructuring of the coffee industry to the Kenyan Parliamentary Committee of Agriculture, Land and Natural Resources, Nairobi.

February 2001. Jayne and Nyoro presented findings on Maize Pricing and Trade Policy at informal seminar involving USAID staff, FAS/Kenya, and FEWS/Kenya.

November 2000. Argwings-Kodhek and Nyoro participated in the preparation of the Kenyan Poverty Reduction Strategy Paper and the Kenya Rural Development strategies.

November 2000. Kilungo organized a regional Pastoral Evaluation workshop attended by pastoralists, livestock traders, and government.

October 2000. Kilungo participated in the Research Advisory Workshop for KARI in connection with formulation of KARI's agricultural research policy.

June 2000. Jayne presented Kenya's Maize Policy Challenges: A Regional Perspective at a seminar organized by USAID/Kenya, Duduville/Nairobi.

March 2000. Nyoro presented findings on challenges facing the coffee industry in an informal meeting organized by the Center for Governance and Development, Nairobi.

February 2000. Kamau organized and presented findings to stakeholder meeting on the way forward in export-oriented smallholder horticulture, Nairobi.

February 2000. Kenya's Maize Pricing and Trade Policy Challenges: Issues and Options. Jayne presented research findings to USAID mission director and staff at an informal seminar, ICIPE campus, Duduville/Nairobi.

December 1999. Argwings-Kodhek and Nyoro presented research findings at the Tegemeo Institute/Egerton University Maize and Wheat Stakeholders Seminar, Nairobi. Seminar involved 30 local stakeholders in the maize and wheat industries in Kenya, to identify key problems facing the sectors and strategies for addressing them.

December 1999. Kiiru organized and presented findings at stakeholder seminar on the Way Forward to Revitalize and Sustain the Pyrethrum Industry.

December 1999. Nyoro and Argwings-Kodhek participated in Stakeholder Seminar on wheat and maize industries in Kenya, Nairobi.

November 1999. Nyoro presented findings at stakeholder seminar on the challenges facing the coffee industry and the way forward.

October 1999. Nguyo and Kamau coordinated and moderated stakeholder workshop that reviewed Kenyan horticultural policy and recommended new proposal for policy consideration.

September 1999. Luseno organized and presented findings at stakeholder workshop on Rethinking Livestock Marketing in Kenya, Isiolo, Kenya.

August 1999. Argwings-Kodhek and Nyoro participated in seminar with parliamentarians from maize and wheat-producing areas, Kakamega.

June 1999. Argwings-Kodhek and Kiiru presented findings to the Parliamentary Committee on Agriculture Lands and Natural Resources on restructuring of the sugar industry in Kenya.

May 1999. Nyoro presented findings to the Parliamentary Committee on Agriculture, Lands and Natural Resources on restructuring of the tea industry in Kenya.

March 1999. Jayne briefed Jock Conley, USAID/Kenya mission director, on grain marketing policy issues in Kenya**.**

March 1999. Nyoro attended meeting of Parliamentarians representing coffee and tea-producing districts on the problems facing the coffee industry and strategies to revitalize it, Nyeri, Kenya.

November 1998. Contemporary Issues Determining the Future of Kenyan Agriculture: An Agenda for Policy and Research. Paper presented by Argwings-Kodhek at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi.

November 1998. Jayne presented findings from the AFR/SD-funded cross-country synthesis report Successes and Challenges of Food Market Reform: Experiences from Kenya, Mozambique, Zambia, and Zimbabwe at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi.

November 1998. Baseline Characteristics of Smallholder Agriculture and Non-Farm Activities for Selected Districts in Kenya. Paper by Jayne, Argwings-Kodhek, Nyambane, and Yamano presented at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi.

November 1998. Improving Consumer Welfare: Issues for Government Action in the Evolving Grain Marketing Systems in Eastern and Southern Africa. Paper by Jayne, M. Mukumbu, M. Chisvo, Tschirley, B. Zulu, R.

Johansson, and D. Soroko presented at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi.

November 1998. Karanja presented results from the report Maize Productivity and Impact of Market Liberalization in Kenya at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi. Partial funding for this report was provided by AFR/SD.

November 1998. Maize Productivity and Impact of Market Liberalization in Kenya. Paper by Karanja, Jayne, and Paul Strasberg presented at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi.

November 1998. The Influence of Gender and Cash Availability on Fertilizer Use on Maize. Paper presented by Mose at the Conference on Strategies for Raising Smallholder Agricultural Productivity and Welfare, Tegemeo Institute/Egerton University, Nairobi.

May 1998. Monitoring for Improved Agricultural Policy Making. Paper presented by Argwings-Kodhek at the Conference on Raising Agricultural Productivity, Nairobi.

May 1998. Jayne presented findings on Agricultural Commercialization Strategies at the Conference on Raising Agricultural Productivity, Nairobi. The conference was jointly organized by Tegemeo Institute/Egerton University, KARI, and MSU. Partial funding for this work, being conducted in Kenya, Mozambique, Ethiopia, and Zimbabwe, was provided by AFR/SD.

May 1998. Factors Affecting the Distribution and Use of Fertilizer in Kenya: A Preliminary Assessment. Paper presented by Mose at the Conference on Raising Agricultural Productivity, Nairobi.

May 1998. Trends in Regional Agricultural Productivity in Kenya. Paper by Nyoro and Jayne presented at the Conference on Raising Agricultural Productivity, Nairobi.

May 1998. Determinants of Agricultural Productivity in Kenya. Paper presented by Owuor at the Conference on Raising Agricultural Productivity, Nairobi.

May 1998. The Role of Commercialization in Food Crop Productivity: The Case of Kenya. Paper by Strasberg, Jayne, Yamano, Nyambane, Karanja, and Nyoro presented at the Conference on Raising Agricultural Productivity, Nairobi.

February 1998. Jayne presented FS II research findings at the USAID Agriculture, Environment, and Private Sector Officers' Workshop, Kampala, Uganda. The talk focused on alternative policy options for stimulating agricultural productivity growth and food security in Africa.

October 1997. Evolving Grain Marketing Issues in Kenya. Argwings-Kodhek and Jayne presentation at USAID/Kenya.

August 1997. Argwings-Kodhek contributed chapter for *Our Problems, Our Solutions: An Economic and Public Policy Agenda for Kenya*. Book produced for Institute of Economic Affairs.

November 1996. Jayne invited contributor of material on Kenya presented in World Food Summit *Technical Background Documents,* Food and Agriculture Organization of the United Nations, distributed at World Food Summit, Rome.

Books and Edited Volumes

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Other Forms of Outreach

Tegemeo Institute, with support from MSU, also worked directly with the Agricultural and Natural Resources Parliamentary Committee making comments and presentations on policy papers and bills on various commodities before they were discussed in Parliament in 2000 and 2001. This interaction between Tegemeo and the Parliamentary Committee has contributed to formulation of the stakeholder-driven agricultural policies in Kenya (notably coffee and tea). Education and sensitization of the committee has also been done through organized seminars and workshops with the parliamentary groups representing coffee, tea, sugar, and maize, as well as directly with the Agriculture, Lands and Environment Committee itself.

In such meetings the parliamentarians have been exposed to the potential gains and the negative effects of certain policies that are usually under their consideration before such issues are presented to the floor of Parliament for discussion. So far, Tegemeo, with support from MSU, has made presentations on maize, coffee, tea, sugar, and cotton. Prior to the presentations to parliamentary committees, Tegemeo concentrated on organizing seminars for parliamentarians from areas producing certain commodities. For example, seminars were held with the parliamentarians from the coffee and maize growing areas.

Tegemeo and MSU have also worked together to produce useful contributions to policy debate in Kenya. Examples of these are the discussion of joint research in local mass media, e.g., the 2001 Robert Shaw article in the *Daily Nation*, (faxed under separate cover to Tegemeo) citing work by Nyoro, Jayne, and Awuor on maize marketing issues. The 1999 article in the *East Africa Standard* by Jayne, Nyambane, and Argwings-Kodhek also generated substantial subsequent discussion in Letters to the Editor and in articles by local columnists.

Another key contribution of MSU to Tegemeo's development has been to give Tegemeo international exposure through the TAMPA Project website, which makes Tegemeo working papers and reports available worldwide for viewing and downloading. The TAMPA Project Website has received 849, 1,763, and 2,064 "hits" in 1999, 2000, and 2001, indicating a growing international interest and demand for Tegemeo/MSU research output in Kenya. The TAMPA I site is: http://www.aec.msu.edu/agecon/fs2/kenya/index.htm

Training and Capacity Building

MSU's main role in TAMPA I, which is continuing in TAMPA II, has been to build Tegemeo's capacity to collect, process, and analyze household-level data to inform policy issues in Kenya.   This objective has been pursued through (a) on-the-job training in the process of carrying out Tegemeo's activities under TAMPA I; (b) periodic short-term training programs at MSU; (c) long-term training in the form of funding for MS and Ph.D. programs for Tegemeo and Egerton staff; (d) collaboration with Tegemeo staff in the preparation of analysis and working papers; and (e) linking up Tegemeo to broader research and outreach initiatives in the Eastern and Southern Africa region. Each of these are discussed in turn.

(a) *On-the job training in the process of carrying out Tegemeo's activities under TAMPA I and TAMPA II:* Over the course of the project, MSU researchers have conducted SPSS training programs (the software program in which the data is entered and analyzed) and training in household data entry, data cleaning, data documentation, and data analysis for all Tegemeo Research Assistants and interested Research Fellows. Beaver has visited Tegemeo roughly twice each year over the three-year project period to conduct one to two week-long training programs with Tegemeo. This has been augmented by visits from Tschirley and Jayne,

working intensively with individual Tegemeo research fellows and research assistants on activities consistent with the annual work plans, set out jointly by Tegemeo and MSU each year.

(b) *Periodic short-term training programs at MSU:* MSU organized and paid for several short courses at MSU, involving intensive SPSS training using the Kenya household data. Tegemeo and Egerton staff that have benefitted from such training include: Argwings-Kodhek, Nyoro, Landan, Ochieng, Mghyeni, Sisule, Owuor, and Kiiru.

(c) *Long-term training in the form of funding for MS and Ph.D. programs for Tegemeo and Egerton staff:* Tegemeo and Egerton staff who have received/are receiving MS or Ph.D. funding support from MSU since 1998 include: Awuor (MS), Kiiru (Ph.D.), Mghenyi (MS), Lilian Kirimi (Ph.D.), and Julius Kirimi (MS).

(d) *Collaboration with Tegemeo staff in the preparation of analysis and working papers*: The nature of this collaboration is determined mainly through the joint development of annual work plans, in which researchers determine mutual interests and then collaboratively implement these work plan activities. As subcontractors, our approach has been to collaborate with any Tegemeo researcher expressing an interest in this, whether it be minor (such as reviewing draft reports produced by a Tegemeo researcher) or more extensive (such as close collaboration in conducting joint research). Some Tegemeo researchers have preferred to conduct their work independently, while others have sought close collaboration. The research output listed in Section 6 of this Fact Sheet contains many examples of MSU/Tegemeo collaboration on research output.

(e) *Linking up Tegemeo to broader research and outreach initiatives in the Eastern and Southern Africa region:* Illustrative examples include:

• Nyoro and Jayne collaborated on an ECAPAPA-sponsored activity, the Strategic Regional Planning Workshop for Agricultural Input Policies with Specific Reference to Fertilizers, 15 July 2002, in Nairobi, Kenya. This led to the report by Nyoro, Jayne, and Kelly, A Framework for Analyzing Fertilizer Development Strategies: Implications for Policy Analysis in Eastern and Southern Africa, which drew from TAMPA I-sponsored research activities in Kenya, as well as parallel research in Zambia and Rwanda. These kinds of synergies are important in providing broader exposure for Tegemeo activities in the region.

• MSU's inviting Tegemeo to co-host the Fourth Tri-annual Agricultural Transformation Workshop, funded by USAID/Washington. This project is designed to bring African policy makers, researchers, and business persons from across the continent together to identify key challenges and recommendations for promoting agricultural development. MSU, which was selected as the main implementing agency of this activity, approached Tegemeo Institute and ECAPAPA (the Eastern and Central Africa Programme for Agricultural Policy Analysis) to co-organize the activity. The Conference, which took place 27-30 June 1999, provided useful synergies with the TAMPA project, both in terms of increasing international exposure for Tegemeo's local research, and in terms of exposing Tegemeo researchers to research insights and experience from other countries. Several Tegemeo researchers contributed to the conference, based on research activities they were engaged in under TAMPA I. The interactions also led to several concrete research collaborations with researchers in other countries, such as the Jayne, Govereh, Mwanaumo, Nyoro, and Chapoto *World Development* article cited in Section 6 above.

In addition, the second phase of the Tegemeo/MSU collaboration (Tampa II, which began in June 2001) reflects a heavy commitment to generating rural/farm income estimates using proxy variables and capacity building for Title II NGOs to implement household surveys. Tschirley began this work in Mozambique in 1997, in response to requests by NGOs for assistance in tracking household incomes in their intervention areas. Tschirley and staff from the Mozambique project worked with NGOs in Mozambique during 1998 to collect the needed data and develop the models, and train the NGOs. These models have been used by the NGOs since that time. In 1999, the USAID mission in Kenya approached MSU about the possibility of doing similar work in that country. Tschirley made an

initial trip to Kenya to assess the possibilities, dialogued with Tegemeo about their interest in doing such work, and decided jointly with Tegemeo to respond positively to the mission's interest. Because the NGOs work in pastoral areas and other areas that are substantially different agro-ecologically and economically from the main areas where the Tampa survey was conducted, it was decided that MSU and Tegemeo would 1) use the Tampa data to develop a model for use by the USAID mission in tracking trends in the main crop producing regions of the country, and 2) work directly with NGOs to develop models more appropriate to their particular areas. Kiiru took the in-country lead on this work, with assistance from Mghenyi.