

UNITED REPUBLIC OF TANZANIA



Agricultural Public Expenditure Review (PER) for Inputs Support Programme, for FY
2012/13

Version Date: October 2012

1.0 Background

Many countries in the world implement policies to support their farmers increase crop production and productivity. Some of these policies can be in form of subsidy. Tanzania depends mainly on agriculture for economic growth and had reintroduced agricultural inputs subsidies in 2003/2004 to support technology adoption by smallholder farmers in the country. This move was necessitated by the fact that the utilization level of improved agricultural inputs was very low by regional and international standards. As a result the country experienced low and declining production and productivity. Maize production and productivity in the Big Four regions of the Southern Highlands namely Ruvuma, Mbeya, Iringa and Rukwa began to decline because the soils required greater use of fertilizers. Concurrently, the country was facing serious incidence of tick and tick borne diseases in the livestock population. In addressing that particular animal health problem, the Government through the Ministry of Livestock Development in collaboration with Development Partners, farmer groups, communities and individuals started to rehabilitate dips that were in bad condition 2003/04. However, use of the dips was hampered by high price of acaricide, absence of dipping by-laws governing compulsory dipping, irregular supply of acaricide, lack of dipping knowledge, and seasonal availability of water and lack of dip testing facilities when the dip wash is not performing to its expectation. Hence, in 2006, the Government introduced the acaricide subsidy and to date there are about 1,864 dips that are in good condition although some are not operating.

Nevertheless, the smart targeted agricultural inputs support programme yielded encouraging results. But early challenges were encountered in targeting the right farmers. The initial strategy involved the Government getting into contract with transporters to subsidize them in transporting the fertilizers and also part of the consignments. This system was weak in accounting for the fertilizers. To address this issue, the Government initiated a pilot in two districts in 2007/08 to test the use of vouchers. The pilot was scaled up as National Agricultural Inputs Voucher System (NAIVS) in 56 districts in 2008/09 providing vouchers to about 740,000 households, or about 30% of the estimated 2.5 million eligible farmers. Owing the success stories of the pilot NAIVS, development partners in particular the World Bank became interested to support the Government in implementing the NAIVS.

The World Bank began supporting the scaling up and implementation of the NAIVS through the Accelerated Food Security Project (AFSP). The development objective of the AFSP is to contribute to higher food production and productivity in targeted areas by improving farmers' access to critical agricultural inputs. The project is in line with the Government's longer-term objective of promoting adoption and efficient use of critical productivity enhancing inputs. The AFSP is supporting a phased scale up of NAIVS to cover the remaining farmers over the

three years from 2009/10. Vouchers went out to 1.5 and 2 million households in 2009/10 and 2010/11, respectively.

The Government and the World Bank have invested heavily in the NAIVS. It is thus rational to conduct an expenditure review of the NAIVS in its entirety to assess whether there has been value for money for the inputs support programme, and whether there is a strong enough justification for continuation of the programme. This review will be done in the context of the recent initiatives including the Tanzania Agriculture and Food Security Investment Plan (TAFSIP) of the Comprehensive Africa Agriculture Development Programme (CAADP), the Southern Agricultural Growth Corridor of Tanzania (SAGCOT), Feed the Future and Bread Basket initiatives; all of which are a string of interventions aiming at the central theme of commercializing agriculture for supporting the nation's economic growth and poverty reduction. All these initiatives will be coordinated within the framework of the envisaged phase two of the Agricultural Sector Development Programme (ASDP – II).

2.0 Justification

The Government and development partners have invested over Tsh. 350 billion in input subsidies over the last eight years, accounting for as much as 34% of the budget of the Ministry of Agriculture Food Security and Cooperatives (MAFC) and 4% of the budget of the Ministry of Livestock and Fisheries Development (MLFD). Roughly 85 percent of this investment has been in the NAIVS. The remainder has supported a series of smaller commitments to subsidize seed of cotton, sunflower and sorghum, tea and coffee seedlings, agrochemicals for cashew and cotton and veterinary medicines. A thorough cost benefit analysis of the performance of NAIVS is a high priority for both the Government and Development Partners, particularly the World Bank. MAFC, other Agriculture Sector Lead Ministries (ASLMs) and Development Partners also seek a broader review of the justifications for and payoffs to agricultural input subsidies in the form of a Public Expenditure Review (PER).

The review will provide information on the agricultural sector performance particularly in terms of production, productivity and profitability from recent investment in the smart targeted agricultural inputs support programme. Given the fact that tick and tick borne diseases (TBDs) are number one killer diseases accounting for more than 70 percent of all

livestock deaths annually, it is imperative to determine an investment return of the accaricide subsidy amounting to over Tsh. 15.7 billion. The review will also assess the implementation of the inputs subsidy programme, focusing in particular on the efficacy and effectiveness of the NAIVS design and lessons learnt in implementation mechanisms, with a view to adjusting the design and scale up of the program in subsequent years. In this regard, the review will utilize the findings of a detailed PER of NAIVS which is currently being undertaken by REPOA as indicated in Section 5.

In addition, the review will assist in identifying and outlining the strategic focus of agricultural inputs interventions, priority actions and public budget allocation and expenditures.

3.0 Objective of the Review

The overall objective of the 2012/13 PER is to assess the performance of the smart targeted agricultural inputs support programme, and determine the best options/systems in its future implementation in the context of the envisaged ASDP II. The review will assess how the programme has contributed to increased production, productivity and profitability of the Tanzanian farmer, the sustainability of these investments, and the options for scaling up the programme to cover a much larger farming population in the country.

The public expenditure review analysis will encompass four components:

- The first component will provide background history and rationale of input subsidies in Tanzania. The size and proportion of each input subsidy program (i.e. NAIVS and subsidy programs for other crops such as cotton, cashews, sorghum, and for livestock) in both the Ministry of Agriculture and Ministry of Livestock budgets and trends in program expenditure plans and practice. How much accaricide (by types) were purchases in the last five years?
- The second component will delve into the details of design and implementation of each input subsidy program, estimate costs of each subsidy, and discuss the challenges faced in implementation, and issues of sustainability of technology adoption.
- The third component will include a discussion of performance indicators, measures of success relating to productivity gains, food security, income, and

profitability gains experienced by farmers, and a review of the accomplishment for each subsidy. Were mortality rates caused by TBDs reduced? Are gains in technology adoption likely to be sustained?

- The fourth component will estimate the level of investment return (value of production gains relative to investment costs), and a discussion of investment trade-offs from various implementation decisions going forward such as expanding coverage, using electronic vouchers, and alternative targeting strategies. It would also include a review of trade-offs in budget allocation between alternative subsidies and between the subsidy and non-subsidy components of development expenditure.

The findings of the public expenditure review will identify areas for improvement within the design and implementation of each input subsidy program. Equally important, they will provide evidence of the economic gains of the programs.

4.0 Scope of Service

4.1. Agricultural Inputs Support Programme Review

- List each input subsidy sub-program implemented in the last 10 years, with annual data on cost/budget allocations, geographical coverage, and data on the number of farmers affected by each subsidy program. Summarize the objectives and performance targets of each sub-program.
- Undertake trend analysis of use of improved agricultural inputs for the past 10 years with regards to all the major sub categories of inputs i.e. Certified Seeds, Fertilizers and Agrochemicals for crops and livestock subsectors,
- Assess performance of the programme in contributing towards increased production and productivity in crops and livestock subsectors.
- Assess the synergies and complementarities for implementing other sector initiatives (Feed the Future & Bread Basket Initiatives) with the programme to enable better planning and coordination of resources.
- Assess challenges, opportunities and suggest way forward.

4.2. **Public Expenditure Review**

- Undertake a value for money impact on food security, strategic grain reserve, cross border trade, farmers' income and other externalities analysis of the agricultural inputs support programme. How cost-effective is the subsidy across agro-ecological zones?
- How have input subsidies affected the development of commercial agricultural input markets?
- Undertake budget analysis trend for the past 10 years on the programme for both other charges and development expenditure by looking into planned versus disbursements and expenditure and determine reasons for deviations on planned expenditure
- Determine the optimal level of expenditure required for the inputs support programme within the framework of the envisaged ASDP II and the Five Year Development Plan (FYDP)
- Propose efficient and cost effective method for implementing the programme in the future.

4.3. Based on the assessment above and drawing from sector studies available during the period under review, make recommendations on:

- Inputs supply priorities in crops and livestock subsectors,
- Policy interventions necessary for enhancing the agricultural inputs support programme and its performance.
- The best options/systems for the implementation of programme.
- Priority expenditure areas in the programme to generate impact both at local and national levels.
- The required public budget allocations for the programme in the envisaged ASDP II framework.
- Propose the required alignment with other sector initiatives both at the national and local level.

5.0 Proposed Approach

We envisage a two step process in conducting a comprehensive Agricultural PER exercise of the various targeted agricultural inputs support programmes.

- The first step would involve a detailed PER study focussing only on the NAIVS to be undertaken collaboratively by REPOA (Policy Research for Development), MAFC and World Bank. The NAIVS PER study will be more detailed due to the substantial amount of primary and impact survey data on NAIVS collected recently by REPOA. This will include a more detailed assessment of cost and return data, and a scenario analysis of public expenditure decisions affecting rates of return. This study is expected to be completed by February 2013. Please see **Annex 1** for details on the terms of reference of the NAIVS PER.
- The second step would involve a broader summary assessment of all input subsidy programs that would utilize the results from the more detailed NAIVS PER study, as well as the findings from additional analysis of other input subsidy programs (including support to livestock, and crops not covered under NAIVS) that would be undertaken as a complementary endeavor.
- There will be two teams for carrying out the PER exercise as a whole: a) The NAIVS PER team comprises of MAFC, World Bank and REPOA, and b) a team to draft the broader PER study that has yet to be identified.

Two funding commitments will be required. REPOA is already being funded to complete an impact assessment of the NAIVS, but needs financial assistance for a PER specialist to work with MAFC on the review of public expenditure data, the assessment of public expenditure scenarios and the drafting of the NAIVS PER report. A second commitment is required for one or more consultants to draft the summary study of all agricultural input subsidies currently funded by agricultural sector ministries.

5.1 Data collection, review and analysis

The assignment will require the use of participatory methodologies in close consultation with the majority of stakeholders in the sector. This will involve the consultant(s) collecting and reviewing secondary and primary data, review of sector reports, and any analytical reviews undertaken during the period under review (2004/05 – 2011/12).

As outlined in Annex 1, the NAIVS PER study will utilize data from comprehensive baseline and follow up impact surveys undertaken by REPOA, and expenditure data from the government to do a detailed cost-benefit analysis of NAIVS. The advantage of NAIVS review is that there is substantial detailed data for evaluating returns on this investment. The impact assessment surveys include control populations on key indicators and allow independent assessment of gains attributable to this particular investment.

For the other input subsidy programs, the emphasis will be on reviewing secondary sources of data, complemented by primary data collection through field visits to each of the major crop growing region receiving a particular subsidy. Information gathered through qualitative interviews with farmers and farmer groups can be used to estimate perceived impact on agricultural productivity, and profitability gains experienced by farmers from each subsidy program. Data collected through focus group discussions and in-depth interviews with farmers and other agents can also provide information on challenges faced in implementation and sustainability of technology adoption for each subsidy program, as well as suggestions for subsequent program improvement.

5.2 Workshops

There will be four workshops:

- An initial first workshop will take place in mid-November to jointly work on the NAIVS PER data analysis, and the first NAIVS PER draft report.
- A second workshop would take place in mid-December to discuss the work plan of the larger PER study, indicating team composition and allocation of tasks.
- There will be a third workshop in mid-February to present the findings of the final NAIVS PER study to national stakeholders.

- There will be a fourth and final national stakeholders' workshop in mid April where the findings from the larger PER study will be presented.

5.3 Final report

There will be an initial report on the NAIVS PER written jointly by REPOA, World Bank and MAFC. In addition, there will be final, more comprehensive, PER report which will incorporate the results from the more detailed NAIVS PER study, as well as results from the analysis of other types of input subsidies. The final report will be prepared taking into consideration all the comments made by the sector stakeholders. It will contain summary of the major conclusions, agreed milestones, programme priorities, required policy discussions and recommendation for future improvement of performance of the smart targeted agricultural inputs support programme.

6.0 Consultant Expertise and Qualification

Minimum academic qualification for the consultant(s) should be Masters Degree in the following relevant fields: Economics, Agricultural Policy, Agricultural Marketing, Public Finance and Budgeting and Business Administration. The consultant(s) should be knowledgeable of the agricultural sector and have at least 5 years of professional experience in similar assignments with experience of Medium Term Expenditure Framework. The consultant(s) must be fluent in written and spoken English, with demonstrated ability to produce high quality analytical reports.

7.0 Expected Outputs

The main output is a comprehensive PER document addressing the objectives in section 3.0 and 4.0 above, along with a detailed NAIVS PER study. This document will provide the informed policy decision on the input support will also be a key input in the 2013/14 agricultural budget planning. The final document will include a clear summary from the workshop conclusion and recommendations for strategic programme priority actions, expenditure and best ways to address sector growth contribution, poverty reduction, food security and GDP..

8.0 Reporting Requirements

The consultant for the larger PER study shall provide the following reports:

- Five (5) copies of the Inception Report shall be submitted to the Client within ten (10) days after contract signature;
- Five (5) copies of the Field Report shall be submitted to the Client within twenty (20) days after contract signature,
- Five (5) copies of the Draft Final Report to be submitted to the Client within forty eight (48) days after contract signing. The Draft Report shall eventually be presented to the Agricultural Stakeholders Meeting.
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- The Final Report shall be presented in Ms Word and provided in hard and soft copy in CD(s) to the Ministry of Agriculture Food Security and Cooperatives.

Time Frame: The study is estimated to take ten (10) weeks starting from Early October 2012.

9.0 Responsibility of the Client

The Client will provide the following:-

- All relevant documentation, data and information regarding the execution of assignment.
- Arrange for Agricultural Stakeholders Meeting
- Avail full time technical personnel from ASLMs to assist in the execution of the assignment.
- Assist in any matter arising that is within the capacity of the client to respond.

10.0 Responsibility of the Consultant

- Adhere to the terms of reference
- Produce high quality report that will provide solutions to problems and challenges facing the programme
- Build capacity of ASLMs to conduct future PERs
- Finish the assignment within the set timeframe.

11.0 Payment Schedules

The consultant will be employed under the Lump-sum contract and shall be paid according to the following schedule:

- Ten (10) percent of the contract amount shall be paid to the consultant upon submission of the Inception Report.
- Forty (40) percent of the contract amount shall be paid to the consultant upon submission of the Field Report.
- Fifty (50) percent of the contract amount shall be paid to the consultant upon submission and acceptance of the Final Report.

Annex 1:

Public Expenditure Review of National Agricultural Input Voucher Scheme (NAIVS)

Terms of Reference

1. Background and Context

The Government of the United Republic of Tanzania is implementing the National Agricultural Input Voucher Scheme (NAIVS) as part of its efforts to achieve greater food security by increasing food production and productivity. The World Bank supports the scaling up and implementation of the NAIVS through the Accelerated Food Security Project (AFSP). The development objective of the AFSP is to contribute to higher food production and productivity in targeted areas by improving farmers' access to critical agricultural inputs. The project is in line with the government's longer-term objective of promoting adoption and efficient use of critical productivity enhancing inputs.

The NAIVS focuses on maize and rice, the main staple crops in Tanzania. The target areas are the high agro-ecological potential areas for these crops, but it has expanded to areas throughout the country that grow these crops. The NAIVS provides vouchers for a 50% subsidy on a package of fertilizers and improved seeds directly to farmers growing rice and maize in target areas. The eligibility criteria include all households in the selected regions cultivating less than 1 hectare of maize or rice, with the highest priority being given to female headed households and resource-poor farmers who have not used fertilizer in the past five years. Beneficiaries are eligible to receive the vouchers for a maximum of three years. The voucher distribution is to be complemented by a number of critical activities to ensure its success, including an awareness campaign, supporting the expansion of agro-dealers network, strengthening the national seed systems, and monitoring and evaluation. The implementation arrangements for the NAIVS include two key features: a participatory and transparent targeting mechanism using a farmer-elected Village Voucher Committee (VVC), and strengthening and deepening the network of private sector agro-dealers to promote sustainable access to agro-inputs in rural areas.

2. Rationale

Given the large investment planned for the NAIVS over the program years (\$299 million, of which the major share is from AFSP), accounting for 34% of the proposed budget for the Ministry of Agriculture, Food Security and Cooperatives (MAFC), an assessment of

investment returns of NAIVS is a high priority for both the Government and the World Bank. MAFC, REPOA and the World Bank are thus jointly undertaking the Public Expenditure Review (PER) analysis of the NAIVS.

3. Objectives of the Public Expenditure Review Analysis

The public expenditure review analysis will encompass four components. First, what were the technical gains derived from the programme? What were the level of productivity gains, production gains, income gains and food security gains derived from the program)? How much displacement of commercial seed and fertilizer purchases occurred? Was national, regional and local food security improved? Are gains in technology adoption likely to be sustained?

Second, what was the relationship between program expenditure plans and practice? What are the full direct and indirect costs of the programme? Were budget allocations timely and adequate to implement the planned programme?

Third, what was the level of investment return? That is the value of production gains relative to investment costs under varying assumptions about pricing and opportunity costs.

Fourth, the team will conduct a series of sensitivity analyses to evaluate how the investment returns are affected by various implementation decisions. For example, what are the economic impacts of expanding the scheme to lower rainfall regions of the country? How are the economic returns affected by varying assumptions about the sustainability of technology adoption of program graduates? How might the returns be affected by alternative targeting strategies – e.g. targeting of poorer households as opposed to middle income farmers?

The findings of the public expenditure review will identify areas for improvement within the design and implementation of the program. Equally important, they will provide evidence of the economic gains of the program.

4. Main Activities

The Department of Planning and Policy of the MAFC will provide detailed budget and expenditure data on NAIVS required for the estimation of subsidy costs and the costs of administering the program (training, implementation, transportation etc.) at various levels

(central/district/ward/village), and participate in data analysis and report writing. This includes data from the Ministry's own budget as well as data from the Prime Minister's Office – Regional Administration and Local Government (PMO-RALG) – such as the costs of extension support explicitly linked with the implementation of this program.

REPOA collected baseline survey data in early 2011, and a follow up survey was conducted in August 2012. REPOA is responsible for undertaking survey data entry and cleaning, analysis of survey and cost data, and PER report writing.

REPOA, MAFC, and World Bank staff will communicate regularly and collaborate with each other for the purpose of knowledge-sharing and coaching on data analysis needed for the public expenditure review. This analysis will culminate in a joint presentation workshop with REPOA, MAFC, and the World Bank.

The analysis will be published in a PER report jointly written by REPOA, MAFC and World Bank.

5. 5. Deliverables

The process will result in the delivery of (i) government budget and expenditure database (from MAFC and PMO-RALG), (ii) impact survey database (from REPOA), and (iii) Final NAIVS PER report that is a joint product of REPOA, MAFC and the World Bank.

6. Outline of the NAIVS PER Report

1. Introduction

Justifications for input subsidies and the NAIVS program in particular
Amount being spent on NAIVS, size and proportion of Ministry of Agriculture budget
Comment on political economy of subsidies – once established, hard to reduce
Objectives of this PER

2. Context 1 – Why was the NAIVS established?

Production and productivity trends for maize and rice
Input adoption trends
Constraints to increasing adoption rates
History of input subsidies in Tanzania
Objectives & hypotheses underlying the NAIVS

3. Context 2 – How is the NAIVS organized and implemented

Targeting strategies
Implementation procedure
Linkage of World Bank support with efforts to strengthen seed supply and agro-dealer services
Performance indicators for NAIVS

4. Challenges of NAIVS Implementation

Challenges of timely payments
Targeting and displacement
Loss, misallocation and misuse of vouchers
Support from local government institutions
Measuring yield gains
Valuation of yield gains
Payment of agro-dealers

5. Financial Returns to the farmer

Profitability of fertilizer and seed
Determinants of profitability

6. Big Six or National Program

Justifications for concentrating on the ‘big 6’ maize and rice production zones and later extension to national coverage

- Gains/Losses associated with the extension to national coverage
- Operational costs
- Productivity gains
- Production/food security benefits

7. Do graduates continue to purchase seed and fertilizer

Those with previous experience with fertilizer
New users of fertilizer
Principle constraints to sustainable commercial seed and fertilizer use

8. Complementary gains in input supply systems

Seed systems development (in context of higher demand)

Agro-dealer development
Investment by seed and fertilizer companies

9. Returns to Investment

IRR

Sensitivity analysis

10. Options for Improving Investment Returns

Targeting questions: type of farmer; regions of the country, crops

Enhancing agronomic performance – fertilizer use efficiency

Reducing implementation costs – electronic vouchers?

Challenges of agricultural credit supply for staple grains

Building sustainable input markets

11. Summary

Implications for public investment

7. Team Composition and Tasks

Person	Designation	Institution	Activity	Estimated Time
Donald Mmari and Team	Director of Research	REPOA	Undertake Impact Survey Data Entry and Data Cleaning Lead Survey and Expenditure Data analysis Lead PER Report Writing	60 days
David Biswalo and Team	Assistant Director of Planning and Budget	MAFC	Provide Detailed Budget and Cost/Expenditure data Undertake budget database development and answer queries related to government expenditure data Work collaboratively with REPOA and World Bank on PER analysis and report writing	30 days
Aparajita Goyal	Economist	World Bank, Washington DC	Work closely with REPOA and MAFC to facilitate the process of PER analysis and report writing Visit twice in the next four months to provide training and guide the data analysis and PER report.	30 Days
David Rohrbach	Senior Ag Economist	World Bank, Tanzania	Facilitate and supervise	15 days

8. Timeframe: September 2012-February 2013.

15 October 2012	databases in place
15 November 2012	initial draft of the analysis; first rough draft of the PER report
19-23 November 2012	joint analysis of data and discussions of the sensitivity analysis
15 December 2012	first full draft report
15 January 2013	second full draft report; discussion with limited set of program stakeholders
15 February 2013	report finalized and presented at open national stakeholders meeting

Next Meeting:

Mid-November to work together on early results from the data analysis, and the first PER draft report.