

iAGRI Research Project

Title: Institutional Analysis of Agricultural Input Service Delivery in Tanzania. The Case of National Agricultural Input Voucher System

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Abstract

Tanzania like many other countries developing countries in Africa has passed through various policy regimes in agricultural input service delivery. However, little has been achieved so far. Access to fertilizer and improved seeds as well as their application among small holder farmers

remain a daunting challenge. The purpose of this paper is to analyze Tanzanian agricultural input service delivery from an institutional perspective. For this purpose, the National Agricultural Input Service Delivery System (NAIVS) will be used as a case study. The analysis will be done by critically assess the process of institutional design, institutional framework adopted for implementation of NAIVS, contract enforcement under input services delivery scheme and finally policy environment and incentive structure. These issues will be discussed in light of the importance of social cohesion in designing institutions, imperfect information among the actors and its resultant effect on transaction costs and risks, the role of existing institutions and how they affect the adopted institutional framework and the role of rewards and punishments in shaping actors behavior along the chain. The major findings in this study are as follows; during the design of NAIVS there were no deliberate efforts to disturb the existing institutional framework which put the farmer in a subordinate position. Here the emphasis is on the interplay between power dynamics and interests in the design of institutions and thereafter institutional framework adopted for implementation. Secondly, the design of institutions took place in an environment of no social cohesion characterized by lack of trust, rationality and reciprocity. Thirdly, there is a dichotomy between programme goals and the means or instruments to achieve stated goals. Fourthly, imperfect information among the actors' particularly small holder farmers has led to huge transaction costs and risks in the implementation of the programme. Finally, there is still a prevalence of state centered approach in the design and implementation of agricultural development initiatives. This tendency limits internalization of policies and strategies for increasing productivity, food security and incomes among small holder farmers. The paper recommends that for agricultural development initiatives to become effective there must be deliberate efforts to sensitize, mobilize and organize farmers to become effective participants in such arrangements. Design of institutions in agricultural development programmes need to first and foremost disturb the existing institutional structure which are responsible for making the farmer poorer before introducing new institutions for programme implementation. The institutional framework for agricultural development initiatives must strive to have SMART indicators for effective monitoring and evaluation. Blanket solutions approach need to be replaced by more context specific tailor made policies to suit a given environment. Delivery of agricultural inputs to farmers is not a panacea for agricultural challenges but other initiatives like development of agricultural infrastructure, marketing systems, establishment and

strengthening of farmers' organizations, and research and development should also be given priority.

1.0 Background

The concept of institutions covers a diverse set of constructs. This stems from the fact we are confronted with different interpretations of behavior. Berger and Luckmann (1967) argued that institutionalization occurs when there is a reciprocal typification of habitualized actions by types of actors. Put differently any such typification is an institution. Institutions consist of cognitive, normative and regulative structures and activities that provide stability and meaning to social behavior (Scott, 1995). Institutions are rules of the game in a society or more formally are humanly devised constraints that shape human interaction (North, 1990). However, the definition to be used in this paper is by Vatn (2005) which appears to capture all aspects in the above definitions. He defined institutions as conventions, norms and formally sanctioned rules of a society. They provide expectations, stability and meaning essential to human existence and coordination. Institutions regularize life, support values and produce and protect interests. Also, the analysis of institutions under NAIVS will primarily focus on the rules, regulations and procedures as prescribed in the circular for implementation.

Agriculture is the mainstay of the national economy of Tanzania in terms of food production, employment generation, production of raw materials for industries, and generation of foreign exchange earnings. It contributes significantly to GDP (over 25% of the total GDP at 2001 prices of 16,829 billion TAS, employment (about 70% of active labor force of 13 million) and supports livelihoods of over 90% of Tanzanians living in the rural areas. It accounts for 46% of total value-added and about 22% of total exports (NBS, 2011).

The use of modern inputs particularly that of improved seeds and fertilizers, is closely linked to higher agricultural productivity and food security (Evanson and Gollin 2003). However, the use of modern fertilizer and seeds in Tanzania is abysmally low. Tanzania like other developing countries reiterated the importance of modern inputs in a number of agricultural policy documents. The agricultural and livestock policy of 1997, The Agricultural Marketing Policy and The Agricultural Development Policy for instance emphasize on the use of modern inputs for

agricultural development. In line with that the government of Tanzania established National Agricultural Input Voucher System (NAIVS) in 2008 with an aim of providing coupons for purchase of subsidized fertilizer and seeds to over 1.5 million targeted poor rural households across the country to increase production, agricultural productivity and area under cultivation. However, the system is reported to face serious implementation challenges. This therefore calls for a thorough investigation on the institutional framework adopted, its performance and factors conditioning performance of NAIVS.

1.1 Problem Statement

Since independence Tanzanian government has been providing input subsidies to farmers without significant improvement in productivity. However, the level of fertilizer use in the country (8 Kg /ha) is one of the lowest in the world; compared to sub-Saharan Africa (13 kg/ha), and developing countries (94kg/ha) (Minot and Benson 2009). The NAIVS established in 2008 is also facing serious implementation and management challenges. Institutions are critical components in addressing challenges facing agricultural input service delivery and agricultural improvement in general (IFPRI, 2010). The effectiveness of public investment in agricultural input service delivery is reduced by problems of bad governance.

Also, research and literature on the role of institutions in agricultural input service delivery is not exhaustive. NIE presents framework for analyzing the role of institutions on economic performance. However, most of the analysis tends to focus on natural resources management (Mbeyale, 2009; Msuya, 2010; Poulton and Lyne, 2009) and market exchange of agricultural goods and services (Kirsten et. al., 2009; Temu, 2009, Mwangi and Meinzan-Dicke, 2009). The present analysis gives market a prominent role in Africa's agriculture development by focusing on how the institutional environment affects market exchange of agricultural goods and services. The fact that development and operation of agricultural markets in poor rural economies is fraught with difficulties prompted agricultural economists to focus on market exchanges of agricultural goods and services. There is a need to apply NIE theoretical framework in analyzing specific agricultural policies and programmes because understanding agricultural policy challenges facing developing countries requires an institutional lens.

The existing research in agricultural input service delivery in developing countries and particularly in Tanzania is centred around distribution, access and application of agricultural inputs (ACT and Match Maker Associates, 2012), the supply of inorganic fertilizers to smallholder farmers (IFPRI, 2010), inputs subsidy programs on developing private sector agro-inputs markets (Msolla and Masangasi, 2010), the concept of smart subsidies (Minde and Ndlovu, 2007) and challenges associated with policy and taxation in agricultural inputs supply value chains (ACT, 2012). Therefore this study is an attempt to bridge the information gap by applying NIE framework on the analysis of ISD in order to identify key institutional design features for successful inputs delivery and recommend on efficient input service delivery in Tanzania.

1.2 Description of NAIVS

Tanzanian government renewed subsidizing inputs since 2003. In his 2003 budget speech, the Minister of Agriculture and Food Security announced the reintroduction of fertiliser subsidies. Subsidies were worth TShs 2 billion in 2003/04, increasing to TShs 32 billion in 2008/09 and, with the help of a WB loan, TShs 138 billion (USD 92 million) in 2009/10, when the system expanded to include paddy. The current voucher scheme was introduced in 2008, replacing the original scheme of 2003, which was turned into a rent-seeking exercise (Cooksey, 2012).

In 2008/09 the National Agricultural Input Voucher Scheme (NAIVS) targeted 700,000 farmers in ten regions to receive 155,000 metric tons of subsidised fertiliser and 65,000 tons of seeds (Niyabitanga, 2008 and URT, 2010). Nearly 1.5 million farmers were targeted in 2009/10. In 2010/11 NAIVS was scaled up to 74 districts in 20 regions targeting 2,000,000 direct beneficiaries (URT, 2011).

Input vouchers are distributed through a series of committees from the national to the village level. The MAFC manages and oversees the entire process, establishes the volume of vouchers to be distributed ‘in line with regional requirements’, prepares guidelines for the scheme’s implementation and a directive on farmers’ eligibility. MAFC also prepares guidelines for setting up voucher supervisory committees at regional, district, ward and village levels. The Minister of Agriculture chairs the MAFC committee and the Permanent Secretary is the secretary. The regional committee, which is chaired by the Regional Commissioner, manages the scheme at the

regional level and is charged to assure that areas whose irrigation infrastructure is in good condition are given priority in voucher distribution. The district committee, chaired by the District Commissioner, is responsible for identifying rice and maize farmers eligible for the scheme.

The Ward committee, chaired by the WEO, is the link between the village and the district. Finally, the village committee prepares a list of farmers engaged in growing at least one hectare of maize or rice and identifies those who qualify as beneficiaries for the voucher scheme. There are three vouchers, two for fertilizer and one for seeds. Agents provide inputs to farmers in exchange for vouchers and cash. The vouchers represent half the retail value of the inputs. Vouchers are checked by the DALDO before the agents present them to the National Microfinance Bank (NMB) for payment. Thus identifying beneficiaries of subsidies is micromanaged by the state's politico-administrative system, with the private sector brought in to handle the finances and physical distribution (URT, 2012).

1.3 Objectives and Approach

The major objective of this paper is to analyze Tanzanian agricultural input service delivery from an institutional perspective. Specifically, the paper intends to;

- Critically assess the process of designing institutions under NAIVS
- Critically assess the institutional framework for implementation
- Asses contract enforcement under NAIVS
- Analyze the policy environment and incentive structure under NAIVS

1.4 Theoretical perspectives

1.4.1 Structural constructivism

There are quite a number of positions in the literature concerning how to understand behavior and institutions. What happens in society can be explained only by social structure- the institutions. People both influence and are influenced by institutions. They are both acting agents in the meaning forming the structures of society and influenced by the very same structures. The

paper draws heavily from the assumptions of structural constructivism and new institutional economics. The reason for choosing the two theoretical frameworks is that they both provide crucial concepts for the analysis of the institutions. Structural constructivism as propounded by Rousseau ([1762] 1968), Durkheim ([1893] 1964, [1895] 1938), Parsons (1937,1951) and Berger and Luckmann (1967) assume that institutions not only constitute choice sets or external society but they also influence individuals with regards to their abilities, ideals and needs. They influence perceptions, values, preferences and capabilities and therefore choices that individuals can make. Therefore, society becomes imprinted in individuals (Vatn, 2005). Berger and Luckmann pointed out three important phases in the process of institutionalization. Externalization refers to a condition where subjectively constructed routines take form and are expressed. Objectivation refers to the situation where others observe the routines as existing facts. Internalization is a point where habits are reproduced. This process is often called socialization. These positions will form part of our discussion with NAIVS institutional analysis at a later stage. However, social constructivism can be further divided into two main sub traditions (Vatn, 2005). The cognitive tradition emphasizes on how institutional frameworks shape our ends and also how we pursue them. Simply they focus on social construction of actions and reciprocal expectations of roles. Normative tradition emphasizes that institutions structure life not only via reciprocal expectations but they also carry messages concerning what is right to do. The institution defines appropriate action. It takes the form of an expectation and behavior and not following what is expected may be sanctioned. However, Bromley (1989) argued for formally sanctioned rules in cases where interests are conflicting and the collective find it necessary to empower the regulation of this conflict by the formalized control of its collective power, like the authority of the court system of a state. They combine certain situation with an act that is required or forbidden and which is governed by third party sanctioning. Violating what is prescribed implies formalized punishments such as being fined, imprisoned and so on.

1.4.2 New Institutional Economics

The theoretical framework adopted in this study draws heavily from the assumptions of New Institutional Economics (NIE) and Agency theory. The New Institutional Economics is a vast and relatively new multidisciplinary field that includes aspects of economics, history, sociology,

political science, business organization and law (Kherallah and Kirsten, 2001). This new direction of economics considers that the cost or risk of transacting determined by institutions and institutional arrangements is the key to economic performance. It is therefore argued that the institutions of a country such as legal, political, and social systems determine its economic performance (Coase, 2000). Institutions are considered as the mechanisms used to structure human interactions in the face of uncertainty, and they are formed to reduce uncertainty and risk in human exchange (Dorward, 2001). Approaches using New Institutional Economics (NIE) explore institutional structures at different levels and examine efficiency and welfare with respect to these structures. The purpose of the NIE is both to explain the determinants of institutions and their evolution over time, and to evaluate their impact on economic performance, efficiency, and distribution (Nabli and Nugent, 1989). In fact, by influencing enforcement mechanisms, transaction costs and co-ordination possibilities, institutions can have the effect of either facilitating or retarding economic growth. The specific contribution of NIE arises from its recognition that economic actors face a particular problem as a result of imperfect information about the behavior of other actors in transactions and institutions play an important role in addressing these problems (with varying benefits for different actors in a transaction and for wider participants in an economy (North 1994, 1995). The NIE focus on imperfect transaction information and its analysis of associated institutional issues (related to nonstandard behavior of actors, lack of complete markets or well-defined property rights, and high information costs) is particularly relevant to the challenges of agricultural development in poor rural economies in Africa. The literature on the economics of information which includes seminal papers by Akerlof (1970), Stigler (1961, 1967), and Stiglitz (1985a, b), Greenwald and Stiglitz (1986), Arnott et al. (1993) argues that lack of perfect and freely available information leads to risk and uncertainty in transactions. Recognition that imperfect information leads to substantial transaction costs in most forms of economic activity has profound implications for welfare economics and hence economic development and management policy.

These concepts reciprocal typifications, cognitive, normative and formally sanctioned rules sub traditions, externalization, objectivation, internalization, imperfect information, transaction costs, are equally important in the analysis of agricultural input service delivery in Tanzania. The concepts will also form the basis of arguments and discussions throughout the paper.

2.0 Methodology

2.1 Study Area

The study was conducted in Nkasi and Mvomero districts located in Morogoro and Rukwa regions. The areas were selected as they grow both food and cash crops with high degree of crop diversification between the two. Also, differences on agro ecological conditions were another motive for the choice of study the area. Table 1 shows selected villages and number of respondents in the study area.

Table 1: Sampled Wards, Villages and number of respondents in each village

District	Ward	Village	Number of respondents
Mvomero	Nyandira	Nyandira	30
		Kibuko	30
	Mlali	Mlali	30
		Kipera	30
	Mtibwa	Kidudwe	30
		Lukenge	30
Nkasi	Namanyere	Kipundukala	30
	Nkomole	Mkole	30
	Isale	Isale	30
	Chala	Chala C	30
	Nkwamba	Tambaruka	30
	Nkandasi	Kasu	30

2.2 Research design

In this study case study and cross sectional research design with both qualitative and quantitative methods was adopted. Case study was used because of its potential usefulness; it is down to earth and attention holding (Mbeyale, 2009). In scientific study, case studies in combination with statistical methods have been used to develop or test hypotheses, confirming or criticize diverse theories (Odell, 2001). A case study can be used in generating or contributing to a body of

knowledge or new suggestion for improvement. However, the design faces generalisation challenges but given the combination of methods used in this study, the research design can epistemologically be in harmony with readers experience and thus a natural basis for generalisation (Mbeyale, 2009). A combination of methods was used to triangulate the information so as to increase reliability and precision (Odell, 2001). Also, the cross sectional design allows data to be collected at a single point in time and is commonly used in descriptive studies for determination of relationships of variables (Bailey, 1998; Babbie, 1990).

2.3 Sampling procedures

Simple random and purposive sampling procedures were used in selecting study units. Purposive sampling was used to identify wards and villages for the study. Simple random sampling was used to select beneficiaries and non beneficiaries of subsidised vouchers. The method is useful in studying large and diverse populations where the costs are reduced because of sequential clustering (Singleton *et al.*, 1993; Kothari, 2004). Nine wards were purposely selected to participate in the study from the two districts. Thereafter twelve villages were selected from the nine wards. Also, thirty respondents from each village involved were selected. A sub sample of 30 respondents is the bare minimum for studies in which statistical data analysis is to be done regardless of the population size (Bailey, 1994); hence a survey sample of 360 respondents was used in this study. In this research data was collected from smallholder farmers, extension officers, voucher committees, district agricultural officers, village chairperson, voucher committees at different levels, WEOs, VEOs and agro-dealers.

2.4 Data collection methods

In order to address the study objectives the proposed study collected both primary and secondary data. Also, a combination of both qualitative and quantitative methods was employed for triangulation. The combination increased validity of results. Also, reconnaissance survey was conducted so as to enable the researcher familiarise with social settings of study area, selection of case study villages and pre testing data collection tools.

2.4.1 Quantitative data collection

Quantitative data was collected through questionnaires with both closed and open ended questions.

Questionnaires:

Questionnaires were used to get information concerning the policy environment, farmers' participation in the design of institutions as well as implementation of the programme, institutional framework adopted and issues on contract enforcement.

2.4.2 Qualitative data collection

Qualitative research provides a more in depth description and understanding of events and actions (Babbie and Mouton, 2001). Also, exploratory studies requires techniques that offer a room for researcher to engage in a seemingly informal conversation that encourages respondents free participation to enable the researcher elicit relevant information. PRA tools like

Focus Group Discussions:

In each village, one focus group discussion was conducted in order to gather information on policy environment, farmers' participation in the design of institutions as well as implementation of the programme, institutional framework adopted and issues on contract enforcement. Also, information on socioeconomic, physical and institutional environment, identify informal institutions that govern their behavior and performance of institutions, activities and actors.

Checklist:

Checklist was used in this study so as to gather information concerning the policy environment, farmers' participation in the design of institutions as well as implementation of the programme, institutional framework adopted and issues on contract enforcement. It also provided information on activities (training, monitoring and evaluation, and selection of beneficiaries, agro dealers and voucher committee members) and feedback mechanisms.

2.4.3 Secondary data collection

Secondary data was collected by reviewing documented information relating to NAIVS including official government and non governmental organizations' documents, newspapers, district agricultural offices and other relevant sources. Secondary data brought information concerning the institutional framework of NAIVS, performance of NAIVS, incentive structure, participation of farmers and policy environment.

2.5 Data Analysis

2.5.1 Qualitative data analysis

Content analysis was used to analyze data obtained from focus group discussions, direct observation and checklist. Data collected through community mapping, wealth ranking, scores, seasonal calendar were analyzed right in the field with the help of PRA participants. Desk analysis of secondary data was conducted to analyze institutional framework of NAIVS, performance of NAIVS, incentive structure, participation of farmers and policy environment.

2.5.2 Quantitative data analysis

Data collected from surveys were checked for completeness before coding, entering and verifying for analysis. Quantitative data was processed using statistical package for social sciences (SPSS) software. Data was analyzed by computing descriptive statistics to determine frequencies, percentages and statistical means.

3.0 Results and Discussion

In order to have a coherent presentation of results and discussion, the following aspects will be used so as to guide the process. These include; design of institutions under the National Agricultural Input Service Delivery, the framework adopted, contract enforcement, policy environment and incentive structure. Also, throughout the discussion the following concepts will be widely used as they form the basis of this study. The concepts will include; transaction costs, rent seeking, reciprocal typifications, externalization, objectivation and internalization, interests, power, cognitive, normative and regulative aspects of institutions. It should also be noted that the focus of analysis in this paper will be at village level. This is because the segment of the voucher supply chain most vulnerable to manipulation and corruption is at the village level (URT, 2010). Also, Cooksey and Kelsall (2011) for instance highlight the inability of the executive to control

lower-level looting and elite capture by state officials in an administrative system lacking a central coordination mechanism for key rent transfers. However, this does not imply abandoning analysis of NAIVS at other levels of operations as they are also equally important for having holistic perspective in the analysis.

3.1 Design of Institutions

As we have seen, institutions refer to humanly devised constraints aimed at shaping actors behavior so as to achieve desired goals. From the definition one sees the role of institutions in shaping human behavior so as to reach certain goals - in our case increased production, productivity and incomes among small holder farmers. This is what the framework proposed under NAIVS was supposed to achieve. As Scott (1987) put it institutional frameworks define the ends and shape the means by which interests are determined and pursued. However, the challenge we have with NAIVS institutions or rather its institutional framework is that they may have well defined the ends but failed to shape effective means to achieve those ends. This dichotomy between the relationship between ends and means is important in this paper.

The design of institutions under NAIVS provides a typical example of state dominated policy regimes towards agricultural development planning. The design denotes a heavily state-centered development strategy focusing on the provision of public goods and overconcentration of resources for central government ministries and a secondary role for farmers, markets and private actors (Cooksey, 2012). The ministry of agriculture and food security assumed a central position in the design and implementation of the programme. Principally, the whole set up of institutions was based in Dar es Salaam with a view of rectifying behaviors and understanding of actors motivations in remote rural areas of Tanzania. This was a false start as key actors (farmers and other non state actors) were left out of the loop. Literature on the advantages of participatory approaches to development planning is so vast for one to question the significance of this attempt by the ministry.

It is the position of this paper that farmers were supposed to be involved in creation of such institutions important to their well being. Social constructivist for example Berger and Luckmann argued that creation of institutions responsible for creating social order must be done in conditions of social cohesion. Furthermore, Ostrom (2000) put it clearly that for a long time

the development of institutions occurred under conditions of great social cohesion. This is important because people would feel they are part of a social construct, therefore willing and able to safeguard its interests. Again, Barlow et. al. (1992) emphatically argued that the creation of rules must occur in a situation where trust, reciprocity and obligation had to be important elements. These are issues are also important for the analysis of agricultural input service delivery in Tanzania. It is therefore reasonable to argue that the unilateral decision making model adopted by MAFS contributed significantly for the failure of mechanisms for contract enforcement under NAIVS.

In an attempt to gather empirical data on discussion concerning the role of social cohesion in the creation of effective institutions, farmers' knowledge regarding NAIVS was tested. Knowledge was chosen as a test because it reflects internalization of a certain aspect under study. It was assumed that when one is knowledgeable he or she would become an active participant and hence contribute significantly for a course. Here basic questions on description of NAIVS, its objectives, criteria for becoming a beneficiary, what does the right package consist as well as responsibilities of various implementation committees were asked. There were six (6) questions in total each allocated 2 points. If a respondent was to score below six (6) he/she was regarded as not knowledgeable, if scored 6-9 points was regarded as less knowledgeable and if scored 10-12 was considered knowledgeable. Table 2. shows the level of knowledge among small holder farmers with regards to the national agricultural input voucher system. As you can see from Table 2 majority (60.1%) of respondents were not knowledgeable regarding the system whereas few (29.7%) were less knowledgeable and the remaining few (10.2%) were knowledgeable.

Table 2: Farmers knowledge on NAIVS (N=360)

Score	Percentage
Knowledge	10.2
Less knowledge	29.7
No knowledge	60.1
Total	100

Results from Table 2 revealed non participation of farmers in the design as well as implementation of the programme. It further reveals that three important aspects of norm

building; externalization, objectivation and internalization could not take place. The rules of the game were therefore not internalized among farmers (beneficiaries). This situation permits quite a number of rent seeking behaviors among actors along the chain partly because of the ignorance on the side of farmers. So that signifies a wrong start with NAIVS as a mechanism to bring subsidized inputs to small holder farmers. If farmers were organized and awareness created among them it would have reduced transaction costs of the programme. The challenges facing the programme are partly caused by the design of institutions. The millions of small-scale Tanzanian 'farming' households have very little direct influence on national policy making. The majority of rural households remain relatively autonomous of the state as both recipients of state provided services (public goods) and other private benefits, or as taxpayers (Cooksey, 2012). In return this trend contributes significantly for the failure of majority of agricultural development initiatives in Tanzania and other parts of the world.

3.2 The institutional framework adopted

Institutional frameworks define the end and shape the means by which interests are determined and pursued (Scott, 1987). In our case the end is ensuring that farmers and particularly small holder farmers increase productivity, food security and income (URT, 2012). However, evidence from both the field and literature suggest otherwise. These triple goals were supposed to be achieved through the circular on implementation of NAIVS. The circular was more or less prepared by the ministry. The institutional framework proposed by MAFC has six levels of implementation. These include; the ministry, national voucher steering committee, regions, districts, wards and villages. This set up with multiple levels of principal-agent relationship complicates implementation of NAIVS. Furthermore, the institutional arrangements with quite a number of actors at different levels made NAIVS to become prone to rent seeking behaviors along the chain (Cooksey, 2012).

The key question here is what caused the failure of the means (institutions) to achieve desired outcomes. We understand that distribution of inputs to farmers is not a panacea to agricultural development challenges facing a country like Tanzania. Also, increasing productivity, food security and incomes among small holder farmers is not a matter of allocating subsidized inputs alone. Indeed there are a number of crucial aspects for that to happen. However, since the paper

aimed at understanding input delivery challenges in Tanzania from institutional perspective therefore the analysis will focus on the institutional framework adopted to attain those triple goals.

Before looking into what went wrong, let us have a brief overview on few of the outcomes described in the circular. First, distribute quality seeds and fertilizers on time to targeted households through laid down procedures. Second, ensure effective utilization of seeds and fertilizer to increase productivity, food security and incomes. Finally, the village voucher committee should ensure completion of fertilizer equation.

Distribution of quality seeds and fertilizer on time to targeted households: This is among the areas which NAIVS failed to achieve. Results from FGD in all 12 villages revealed farmers complaints on the quality of seeds and fertilizer. Also, timely delivery of inputs was a major problem across surveyed villages. In many villages farmers got input two months after the start of the season. Again, distribution of fertilizer is normally done during a period where majority of the farmers do not have money. Inputs are distributed during a time where villages are in financial hardships. Also, in all villages surveyed farmers expressed dissatisfaction with Minjingu claiming that it does not provide intended results. This also shows problems of top down approaches to agricultural development planning. MAFC proposed blanket solutions to the problem of inputs among the farmers. Minjingu is distributed all over the country despite differences in agro ecological conditions. Also, results from FGD shows that farmers prefer DAP believing from their past experiences that it produces results. Table 3 shows farmers perception as who is benefiting from subsidized inputs. Majority (44.1%) of the beneficiaries were better off farmers and only a few (20.7%) poor farmers get access to such public transfers. The evidence shows that targeting efficiency of NAIVS is so poor. Benefits from the state accrue disproportionately to better-off farmers (REPOA, 2007).

Table 3: Farmers perception on the beneficiaries of NAIVS (N=360)

Parameter	Percentage
Poor farmers	20.7
Average farmers	35.2

Better off farmers	44.1
Total	100

Ensuring effective utilization of inputs: The circular clearly stipulates that the ministry should ensure effective utilization of seeds and fertilizers so as to achieve NAIVS objectives. Effective utilization of inputs requires some basic skills which farmers do not possess. Table 4 may provide some highlight regarding this item. The table shows that only few (38.6%) percent of the total surveyed farmers received extension services for the past six months. So those farmers who were lucky enough to get the inputs did not get basic skill required for application in order to get intended results. Six out of 12 villages did not have extension agents. The remaining six with extension agents could hardly see them on their farms. Extension officers are perhaps leading the category of public employees who are not satisfied with their job. All extension officers interviewed had no transport to take them to the farms. This becomes difficult to reach farmers in the field.

Table 4: Access to extension services for the past six months (N=360)

Parameter	Percentage
Accessed	38.6
Never	61.4
Total	100

Village voucher committee should ensure effective utilization: The village voucher committee consists of six members and an extension officer. In the circular the committee is responsible to ensure that fertilizer is effectively applied in the fields. The members should work hand in hand with the extension officers in training farmers on effective application of fertilizer. The VVC members work on voluntary basis with an exception of extension officer who is paid by the government. Results from the interviews with members of VVC revealed that they are

demoralized by the fact that they don't get any incentive from what they do. One committee member in Chala C Village, Chala Ward had this to say

"I regret for deciding to volunteer in this committee. I just pray that my time passes because it is just a waste of time as we get nothing out of it. Also, you find a village of 3000 farmers getting 200 vouchers...this is very frustrating as we sometimes don't know who to give or not to give. At the end of the day we end up into conflict or enmity with our people thinking that we have favored the ones who got the vouchers. So what is the point continuing doing it"

Also, the ministry expected a lot from the VVC despite no capacity building or incentive for them. The members are not trained on agricultural best practices leave alone the fact that they do not have incentive to perform such a task.

Having seen the discrepancy between the policy aims and what is happening in the ground let us shift the focus on the framework and try to analyze the proposed structure in the circular.

Ministry of Agriculture, Food Security and Cooperatives: In the circular the MAFC plays a major role in the implementation of NAIVS. This was probably because the circular was prepared by the ministry. Specifically the ministry is supposed to conduct training on implementation and monitoring of NAIVS to farmers through different channels before and during agricultural season, lay down procedures for establishment of various implementation committees at regional, district, ward and village level and ensuring effective selection of beneficiaries. There are a number of activities under MAFC in the implementation of NAIVS but for the purpose of this analysis only three will be dealt with.

National Voucher Steering Committee: This committee is supposed to prepare policy, procedures and instructions, establish criteria for distribution, evaluate implementation report and endorse implementation reports.

Regional Voucher Committee: This is supposed to monitor and evaluate as well as coordinating transfer of information from the districts to the ministry.

District voucher committee: Collect and analyze production information of maize and rice as well as inputs utilization at the ward and village level. They are also supposed to conduct monitoring and evaluation, seminars to village government, VVC on objectives and proper management of NAIVS. The committee is also supposed to ensure that timely availability of inputs and engage NGOs, FIs, Cooperatives and SACCOS to provide loans to farmers. They should also receive complaints and find solutions or send them to RVC. Finally, they conduct monitoring and evaluation at district level and prepare report to RVC.

Village Voucher Committee: The committee is expected to do the following; inform farmers on criteria and procedures to identify beneficiaries, prepare permanent register of households to benefit from NAIVS (this should include both already benefited and to be beneficiaries) and identify beneficiaries through cell leaders before endorsement by the Village council and Village assembly.

The set up for implementation is very risky as chances of rent seeking along the chain are huge. Also, multiple principal-agent structures in the framework complicate management of the programme.

Participation of stakeholders: The beneficiaries in this case the farmers were left out of the loop. MAFC accumulated so much power in decision making along the chain. The ministry lay down procedures to be followed along the chain. This cannot work because creation of such institutions requires cohesion among actors. Furthermore, creation of institutions or institutional frameworks should occur in the conditions of trust, obligations and reciprocity. This will allow internalization of key activities and norms among actors during implementation. Results from FGD for instance reveal that farmers had different idea of how inputs should be distributed. One farmer in Kipera Village had this to say;

“Identification of beneficiaries should be done before distribution and vouchers should come with names from the ministry. And because most of small holder farmers are so poor to afford subsidized price, inputs should be advanced on loan basis or inputs should be distributed after harvest where many farmers including the poor would at least afford the price”.

Another farmer in Kidudwe Village, Mtibwa Ward had the following to say following challenges they face from agro dealers;

“The selection of agro dealers should be done by the farmers at the village or ward level. Agro dealer should be someone among us, from our own village, one who knows our financial calendar, soil type, planting season and one who understands better our local environment”.

These are some of the farmers’ views on how they would prefer the voucher scheme to be. This shows that if the farmers’ views were put on table maybe we could have quite different arrangement for implementation of NAIVS. This tendency of sidelining the farmers and decide for them will take us no where.

Monitoring and evaluation: The system of monitoring and evaluation also appeared to be dominated by the ministry and other state actors. For example, the structure of national voucher steering committee which is chaired by the ministry and the secretary is the permanent secretary of MAFC shows states dominance in allocation of public transfers. This is a sensitive institution under NAIVS as it is supposed to prepare policies, guidelines as well as procedures for implementation. It is also supposed to formulate mechanisms for input distribution, monitoring and evaluation of the programme and finally endorses implementation reports (URT, 2012). We have a serious problem here. How can one become a referee and a player at the same time? This makes a system prone to rent seeking behaviors. The possible abuse of the input system is corroborated by oversight exercises by the Controller and Auditor General (CAG) and the Parliamentary Accounts Committee (PAC). In April 2011, PAC Chairman John Cheyo criticized the Ministry of Agriculture over the management of the inputs and the power tillers (small tractors) programmes.

‘The committee says there are all tale-tale signs of existence (sic) of massive corruption and flouting of rules and regulations governing good business practice in the ministry...’, citing the qualified reports MAFS received from the Controller and Auditor General for the last two financial years. One of the CAG reports referred to states that the:

‘Ministry ordered 2,687,600 farmer’s input vouchers with face value of Shs. 87,684,600,000 at a cost of Shs.646,552,040 out of which vouchers with face value Shs. 18,633,000,000 costing Shs. 135,010,669 were not distributed.’

(Source: Cooksey, 2012)

In this committee we have only one person “representing the farmers” from all over the country. Also, the representativeness of this person is subject to many questions. Different actors have different interests. To put it clearly the interests of small holder farmers are different from those of state agencies. Also, there are differences among farmers themselves, between small holder farmers and large scale farmers or between rice growers and maize growers. How were such critical questions regarding power and interests and conflicts handled in the design of the implementation strategy?

The way monitoring and evaluation is structured under NAIVS led us to conclude that it cannot be effective. The ministry over sees implementation and it is also reviewing and endorses implementation reports. That is why data revealed that farmers find it difficult to air out their concerns. As at the village level for instance, when a farmers encounter a problem regarding NAIVS he/she has to report to the Ward Voucher Committee which also oversees implementation at the village level. One farmer in Tambaruka Village asked on their experiences with feedback mechanism had this to say;

“Basically it is very frustrating as sometimes we witness some irregularities concerning implementation of NAIVS but we have nothing to do. We don’t have anywhere to report and sometimes we find it useless as no feedback is guaranteed. I remember I once sent a complaint to the WVC and I got nothing and then I went to the district only to be told that we farmers in Tambaruka we are full of majungu”

Again, the design of NAIVS did not fully take on board the interests of small holder farmers. This is true given the structure of decision making under NAIVS. Farmers representatives invited to make such important were overwhelmed by the interests of technocrats and other actors. Even the representativeness of these apex farmer organizations are subject to question leave alone their technical expertise in project and programme design. Also the nature of framework with multiple

principal agent locales requires holistic perspective for effective monitoring and evaluation. And this comes as no surprise as majority of the farmers are not aware of the programme (Table 2). Also issues of transaction costs were not well thought in advance.

It is also the position of this paper that rent seeking behavior shadowing NAIVS is partly a result of imperfect information and non-participation on the side of the farmers. Extracts from Cooksey, 2012 below shows emphasize this point.

The CAG's annual reports note numerous irregularities in the management of the voucher scheme. In January 2008, two junior officials in Mbozi District were 'suspended ... for illegally selling ... tonnes of subsidised fertiliser' to Malawi and Zambia. In June 2010, Rukwa Regional Commissioner Daniel Ole Njoolay tasked the Prevention and Combating of Corruption Bureau (PCCB) and Attorney General's office (AG) to carry out investigations into 'massive irregularities, misappropriation of funds and theft of agriculture inputs worth over 8bn/- through the voucher system.' In August 2011, two voucher distribution agents in Rufiji District were arraigned for offering a TShs 10 million bribe to a PCCB officer in connection with an investigation into input voucher fraud in the district. At the same time, an Area Councillor in Moshi Rural District complained that she had "been swamped with complaints regarding the distribution of subsidised fertilise." In Chato District, Kagera Region, no less than 49 people, including three agriculture and livestock officers, 29 village executive officers and 11 village chairpersons) were charged in court for abusing the system. This source points out that 'all the accused are respectable community leaders and government officials who ... are tasked to implement and safeguard the system.' Only farmers who can afford the fertiliser at the subsidised rate are supposed to be deemed eligible by the village committee, headed by the Village Executive Officer, but in some villages all farmers are deemed eligible. Some farmers are said to sign for vouchers they do not receive in exchange for a small cash payment.

In September 2009, the Mbeya District Commissioner complained that 'dishonest agents ... collude with unscrupulous businesspeople who buy the fertiliser and sell it to farmers at a higher price.' One MP is cited as saying that "the subsidised fertiliser was bought by traders and resold to farmers at a profit." Another MP claimed that "poor farmers don't benefit." In a study of the voucher pilot programme in Kilimanjaro Region, Pan and Christiaensen (2011) found that

elected village officials 'received about 60 percent of the distributed vouchers, a factor that significantly reduced the targeting performance of the program, especially in more unequal and remote communities.' Ongoing research in Manyara Region found that in a small and unrepresentative sample of input voucher recipients, 22 out of 26 vouchers (85 percent) were captured by the best-off quartile.

Finally, in August 2011, President Kikwete complained that some officials were 'sabotaging the delivery and distribution of farm inputs' while 'others were forging farmers' signatures to show that they have received subsidised ... fertiliser...'

Also, the role of non state actors is not appreciated in NAIVS implementation. Data from research revealed that lack of effective engagement by NGOs in the implementation of NAIVS. This is not expected in an era where PPP is advocated. NGOs particularly those engaged in agriculture would significantly support the programme by enabling extension officers to provide basic agronomical skills required to small holder farmers who appeared to use fertilizer for first time following the introduction of NAIVS.

Extension workers are not motivated. Most of them live in the district towns and not in the villages. They do not have transport for them to attend farmers. One extension worker is supported to cater for 3000 farmers with no transport or any significant support from the ministry. Table shows farmer response to the question whether they have ever seen an extension worker. This is a big problem because for fertilizer to bring intended goals farmers must be educated on effective utilization of the source.

3.3 Contract Enforcement

This is perhaps a major challenge facing NAIVS. Actors along the chain do not adhere to laid down conventions and norms. There is a significant discrepancy between what is proposed in the circular for implementation and what is happening on the ground. The circular advocated for transparency and sustainability of NAIVS. Also no changes should be made from what has been proposed. It also stresses that any elements deemed to contribute for the failure should be dealt with according to the law (URT, 2012). However, patronage and rent-seeking undermine NAIVS

whereas both public and private sector interests informally capturing the lion's share of the rents created (Cooksey, 2012).

Literature on contract enforcements at least provides us with three level structures to constrain actors' behavior. As we have seen these include cognitive, normative and regulative structures (Vatn, 2005). Therefore for actors to cooperate all these aspects need to be incorporated. Since farmers and other actors along the chain were not effectively involved in the design of rules of the game therefore internalization became difficult. Also, the norms that were stipulated in the act were not adhered by actors. Therefore given that nature of conflicts in the distribution of public transfers under NAIVS there was a need for specific and detailed kind of regulative structure with punishments and rewards.

4.0 Conclusion

Agriculture remains the mainstay of Tanzania's economy. However, efforts for agricultural development have so far recorded dismal achievements. Application of fertilizer and improved seeds is indeed important for increase in agricultural productivity, food security and incomes among small holder farmers. Tanzanian government is struggling with difficulty in ensuring access and utilization of agricultural inputs among farmers. Since independence top down arrangements in agricultural development planning and implementation proved to be futile. The challenge is for the government to mobilize and create awareness among farmers for them to effectively participate in agricultural development interventions. This will significantly reduce transaction costs which appear to reduce effectiveness of public transfers to farmers. Establishment of institutions should occur in an environment with trust, obligations and reciprocity.

5.0 Policy Recommendations

- Policy making in agricultural development interventions should attempt to engage farmers for the initiatives to produce results in the ground. This will partly address coordination challenges and rent seeking behaviors shadowing NAIVS

- Solutions to agricultural development challenges should be context specific. The implementation of NAIVS shows blanket solutions to agricultural planning. For instance the proposal to use Minjingu all over the country as if the country has same agro ecological solutions.
- Promotion of agricultural inputs use alone cannot achieve increased food security and incomes among small holder farmers. Other key issues like the marketing system, research and development as well as infrastructure development and appreciation of the private sectors role
- Also, policy making should attempt to create sort of reciprocal typifications among actors. Here, externalization, objectivation and internalization are crucial for effective institutional frameworks and reduction of dichotomy between policy aims, institutional frameworks for implementation and what is actual happening on the ground.
- The design of policy should address problem of conflicts of interests and power dynamics that might arise in the implementation process. An effective set of rewards and punishments must be in place for realization of policy outcomes. If need be legal constraints should be fully employed to shape actors motives and behaviors.
- Feedback mechanism (monitoring and evaluation) should be effective. The ministry cannot be a player and a referee at the same time. Rather an independent body preferably the beneficiaries should take the lead in monitoring and evaluation of agricultural inputs service delivery schemes. Awareness and tailor made training can be made among farmers to perform such role.

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