INSTITUTIONAL CONSTRAINTS TO INPUT MARKETING IN ETHIOPIA: THE CASE OF FERTILIZER

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1. INTRODUCTION

Food production levels in Ethiopia have consistently fallen behind consumption requirements in the last three or four decades. One of the major consequences of the poor performance of agriculture is widespread food security problem. An estimated 50 to 60% of the country's population is food-insecure or lives below the poverty line. Food aid accounted for as much as 10.7% of the domestic production during the period 1985 to 1996. Given the population growth rate of 3%, i.e. total population increasing from the current 60 million to 120 million in less than 25 years, the gap between food supply and demand is expected to widen further unless some action is taken urgently (FDRE 1996).

At the root of Ethiopia's food problem is low agricultural productivity. Cereal yield stagnated at 1.2 tones per hectare between 1980 and 1997 (FDRE 1996). With little or no room for significant increase in area under cultivation, the solution to the food problem would depend on measures aimed at stimulating yield which, in turn, is determined by sustainable growth in the use of external inputs, mainly fertilizer. Shorter fallow, continuous cropping and limited effort to recycle crop residues or other organic matter into the soil have meant that farmers must invest in chemical fertilizer to produce for their subsistence requirements.

Recognizing the need to increase the use of fertilizers, the Federal Government of Ethiopia has taken several measures since 1992, including issuance of national fertilizer policy, liberalization of the market to allow private sector participation, deregulation of prices and expansion of extension services. The national fertilizer policy was issued in 1993 with the main aim of ensuring competitive fertilizer market and supporting the national fertilizer and extension systems to generate packages of technologies. Some six private firms have so far joined the government parastatal, Agricultural Input Supply Enterprise (AISE) in the importation, distribution, wholesale and retail of fertilizer. A few other private companies have also started fertilizer distribution and sales. Prices were deregulated in 1998 in an effort to remove

distortions in the market. More importantly, a new system of extension, known as the Participatory Demonstration and Training Extension System (PADETES) was launched in 1994/95 using the approach previously adopted by the Sasakawa/Global 2000 (SG2000). Nearly 3 million farmer-managed demonstration plots (measuring 0.25 to 0.50 ha) were handled through the PADETES in 1997/98 (FDRE 1996).

After the change of the policy and the start of the new Extension Program, fertilizer consumption has increased, jumping from 152.7 thousand tons in 1992 to 281.3 thousand tons in 1998. Nonetheless, the full benefit of the drive to increase fertilizer consumption has not been realized due to various constraints. Recovery of fertilizer loans has also increasingly relied on direct administrative and police interventions.

The aim of this study is to examine the institutional constraints of fertilizer marketing in recent years. The study will focus on institutional factors critical for expanded uses of the input, notably the policy and regulatory framework with respect to fertilizer supply and distribution, allocation of foreign exchange and credit administration.

2. INPUT SUPPLY

In recent years economists have given increasing attention to institutional economics in their attempt to assess the impact of liberalization measures or analysis of markets. Institutional economics shares with neoclassical economics the assumption of rational, maximizing, self-interested, economic agents. However, it relaxes some of the restrictive assumptions to reflect more common concrete real-world cases. In contrast to standard micro economic analysis, institutional economics takes the view that the world of perfect competition is a rarely encountered special case and that economic analysis and policy-making should concentrate on understanding and improving actual scenarios. According to Poulton et al. (1998), some of the central features of the new approach are:

- There are substantial transaction costs involved in most forms of economic activity. This means that profit-maximizing economic agents need to consider how to minimize the sum of transformation (production) and transaction costs. By contrast, neoclassical economics concerns itself exclusively with transformation costs.
- Possibly the most important source of transaction costs is the need to acquire information in order to do business. Information needs encompass not just the 'hard' facts concerning available technology and prevailing prices, but also information on the reputations of other people and organizations.
- Risk is an unavoidable feature of economic life. It both raises the cost of acquiring adequate information and necessitates that appropriate strategies be devised to cope with unforeseen, or undesirable, events and outcomes.

- In addition to political, climatic and market factors, an important source of risk is the unpredictable and/or opportunistic behavior of other economic agents.
- Economic agents, therefore, establish institutions to reduce the uncertainty inherent in human interaction (social, economic and political) and/or to overcome market failures caused by the presence of risk and imperfect information. Differing views are held, however, on whether institutions are established cooperatively by otherwise independent individuals in order to overcome a common problem or whether they are set up by the powerful in order, first and foremost, to further their own specific ends.

The role of the state is central in institutional economics. It sets the formal rules and regulations that are part and parcel of the country's institutional environment. The behavior of economic agents or humans is mediated by these rules, together with the informal rules of the broader society. Apart from making and enforcing the rules, the state is also a player in the economic game. State agencies invest resources, direct credit, procure goods and services, and negotiate contracts. These actions have profound effects on transaction costs and economic activities. The actions of the state may accelerate or undermine development, depending on how the game is played (World Bank 1997).

There are numerous situations in which the state has helped improve the quality of people's lives. Countries which have experienced rapid improvement in their economy and standard of living owe much of their success to appropriate macroeconomic and microeconomics environment, favorable institutional infrastructure–property rights, peace, law and order–that encourage efficient long-term investment, and provision of basic education, health care, environmental protection and physical infrastructure. Yet historical records also show the state can do enormous damage. Some of the major failures of governments, according to the World Bank (1997), may be given as follows:

- The wrong kind of rules can actively discourage the creation of wealth. For example, the state may penalize private wealth by distorting price - through an overvalued currency, for example, or by creating agricultural marketing boards that tax farmers' output and give them little in return.
- Even if the rules themselves are benign, they may be applied by public organizations–and their employees–in harmful fashion. They may, for example, impose huge transaction costs, in the form of red tape or bribery, on entrepreneurs setting up new business or restructuring old ones.
- But potentially the large source of state-inflicted damage is uncertainty. If the state changes the rules often, or does not clarify the rules by which the state itself will behave, businesses and individuals cannot be sure today what will be profitable or unprofitable, legal or illegal, tomorrow. They will then adopt costly

strategies to insure against an uncertain future–by entering the informal economy, for example, or sending capital abroad–all of which impede development.

Within the smallholder agriculture, institutional economics contends that adoption of more productive technologies is dependent on the adequate performance of a range of markets (for inputs, outputs, finance, labor, insurance, etc.), because such technologies are, in general, likely to require complex linkages. Institutional development, rather than technological development, could be the major constraint to agricultural development in many cases. Rapid institutional development enables the fast progress in the introduction and adaptation to local conditions of ever more productive technology (Dorward et. al., 1998).

In general, governments wishing to intensify smallholder agriculture under circumstance where the necessary markets were absent or weakly developed faced two broad alternatives (Dorward et. al., 1998):

a) To leave market activities to the private sector and to try to foster market entry, investment and technological progress via interventions that promoted institutional development (such as appropriate legislation, improved transport and social infrastructure, and administrative and legal services); or

b) To provide themselves the required services through setting up parastatal agencies that supplied, for example, inputs, finance, output marketing and storage.

The second option has generally proven to be unsatisfactory institutional fix for reasons well explained by standard neoclassical economics and neoclassical political economy. High operational costs and gross inefficiency severely constrained the capacity of parastatals to supply sufficient input at the right time and at the right place. Policy-makers have no choice but to focus on the first option, i.e. the intensification of agriculture via fostering of appropriate institutional development (Dorward et. al., 1998).

3. FERTILIZER MARKET STRUCTURE IN ETHIOPIA

The distribution and marketing of fertilizer was entirely controlled by the state until 1992. The parastatal Agricultural Input Supply Corporation, AISCO, (recently renamed as the Agricultural Input Supply Enterprise, AISE) was the sole importer, distributor, wholesaler and retailer of fertilizer. The task of clearing custom and forwarding and transporting fertilizer from port to transit warehouses was also handled by monopolistic parastatals such as Maritime and Transit Services Corporation (MTSC) and Ethiopian Freight Transport Corporation (EFTC).

Consistent with the economic reform, the Transitional Government of Ethiopia designed the New Marketing System (NMS) for fertilizer in 1992 with the main objective of liberalizing the market and creating a multi-channel distribution system. The reform permitted the private sector to engage in the importation and distribution of fertilizer, hence ending the monopoly power of the AISCO/AISE. In 1993, the Ethiopian Amalgamated Private Limited company started to import and distribute fertilizer. Its market share in the total import increased to 28.6% in 1999. A year later in 1994, the second firm entered the market under the name Ambassel Trading House Private Limited company which mainly operated in the Amhara Region. First, it was appointed as the sole distributor and wholesaler of AISCO/AISE in Amhara region and later was allocated foreign exchange by the Government to import in 1996. In 1998, two more companies, FERTILINE and Guna Trading Company, began to import fertilizer. Two other firms, Dinsho and Wondo Trading Companies were licensed as distributors and wholesalers of fertillizer in 1998. Dinsho is operating in the Oromiya Region and Wondo in the Southern Nations, Nationalities and Peoples Regional Government.

In order to provide incentives for efficient fertilizer use and encourage competitive market, the National Fertilizer Policy, introduced in 1993, called for gradual elimination of pan-territorial pricing and subsidies. Accordingly, the pricing system was deregulated in stages: retail price was deregulated as of January 31, 1997 and total fertilizer prices have been completely deregulated since February 1998. Fertilizer subsidy has thus been withdrawn since February 1997.

The National Fertilizer Policy also gave rise to the establishment of the National Fertilizer Industry Agency (NFIA) in 1994 to guide and coordinate the whole development activities of the fertilizer sector. The major responsibilities of NFIA include: (a) ensuring efficient implementation of the National Fertilizer Policy by setting up adequate monitoring, review and coordinating mechanisms; (b) institutional and human resource capacity building; (c) donor coordination to mobilize fund for fertilizer import and finally through these actions (d) contribute significantly to increasing agricultural productivity and building indigenous (organic and inorganic) fertilizer production capability.

The National Bank of Ethiopia (NBE) has issued a guideline for fertilizer import under Foreign Exchange Fertilizer Facility (FEFF) in 1997 so as to make the foreign exchange allocation more transparent and encourage competition. To this effect, Foreign Exchange Fertilizer Facility Committee (FEFFC) has been established which draws its members from the National Bank of Ethiopia, National Fertilizer Industry Agency, Ministry of Economic Development and Cooperation (MEDaC) and the Ethiopia Quality and Standards Authority.

Commercial Bank of Ethiopia (CBE) and Development Bank of Ethiopia (DBE) were the major sources of input credit. DBE ceased extending input credit since 1997. Currently the major source of input credit is CBE with limited participation of the emerging rural micro financial institutions such as the Dedebit Credit and Savings Institution and the Amhara Credit and Savings Institution.

There are at least three institutional factors that have shaped the structure of fertilizer market in Ethiopia: allocation and source of foreign exchange, distribution network and credit administration.

3.1. Allocation and Source of Foreign Exchange

Fertilizer import is financed mainly from foreign grants, loans and Government treasury. The recent four years data (1996–1999) have shown that the average share of imported fertilizer financed through Loan/credit, Grant and Government is 25%, 49% and 26%, respectively (Table 1). This shows that the country's fertilizer supply is highly dependent on donor's finance. Grants are obtained at unspecified times of the year and are often accompanied with restrictive conditions such as source of supply and approval procedures. Unlike the weekly auction for all other imported commodities, foreign exchange for fertilizer import is offered for tender only when donations are received.

The whole process of bid document preparation, bid document submission, bid document approval (by the donor or creditor), tender floating, tender opening, tender evaluation, report submission (to the Donor or Creditor), evaluation report approval, award notification and L/C opening can take up to six months. Suppliers are often required to predict world prices up to six month in advance. But world prices may change and the cost of domestic transport may go up (due to the rainy seasons) during this time, thereby forcing bidders to submit higher prices (to allow for the risk involved). In addition, importers also carry the burden of the interest on their loans. The amount of foreign exchange available in any one tender is too small (equivalent to lots of 25,000 tons) to gain from economies of scale in import and shipment. These problems have raised the cost of fertilizer by at least 13 percent (Mulat et al., 1997). More seriously, importers and distributors face considerable uncertainty over the amount and timing of foreign exchange allocation. Due to the fact that importers are required to open L/C by depositing 100%, the value of the fertilizer to be imported has also constrained entry of new firms.

3.2. Distribution Network

A well-established and efficient fertilizer marketing network is very important to ensure a smooth and continuous flow of fertilizer up to the end-user. Retail markets are

poorly developed in Ethiopia. There are only a limited number of retail outlets run directly by the importers/distributors themselves.

The current fertilizer distribution network comprises importers, distributors and retailers, where the primary agricultural Service Cooperatives (SCs) are also acting as retailers (chart 1). There is no clear demarcation of operation as importers and distributors are also retailing.

Limited participation by small-scale wholesalers and retailers has made the fertilizer market uncompetitive and inaccessible. About 2300 private wholesalers and retailers were registered under the respective importers in 1996. But their number was reduced to around 400 in 1998 (quarterly reports of NFIA) as retailing was increasingly carried out by the importers and distributors themselves. Retailing by the large firms has the disadvantage of limiting sales outlets to towns and along the major roads. It becomes expensive and sometimes unmanageable for large distributors to maintain several sales centers within a given *woreda* and provide sales services throughout the year. Large non-local firms relying on hired workers do not have the capacity to sell fertilizer on flexible terms (e.g. on the basis of informal arrangements or exchange for grain). A more efficient, flexible and a wider distribution of fertilizer can only be ensured if local traders are encouraged to participate fully.

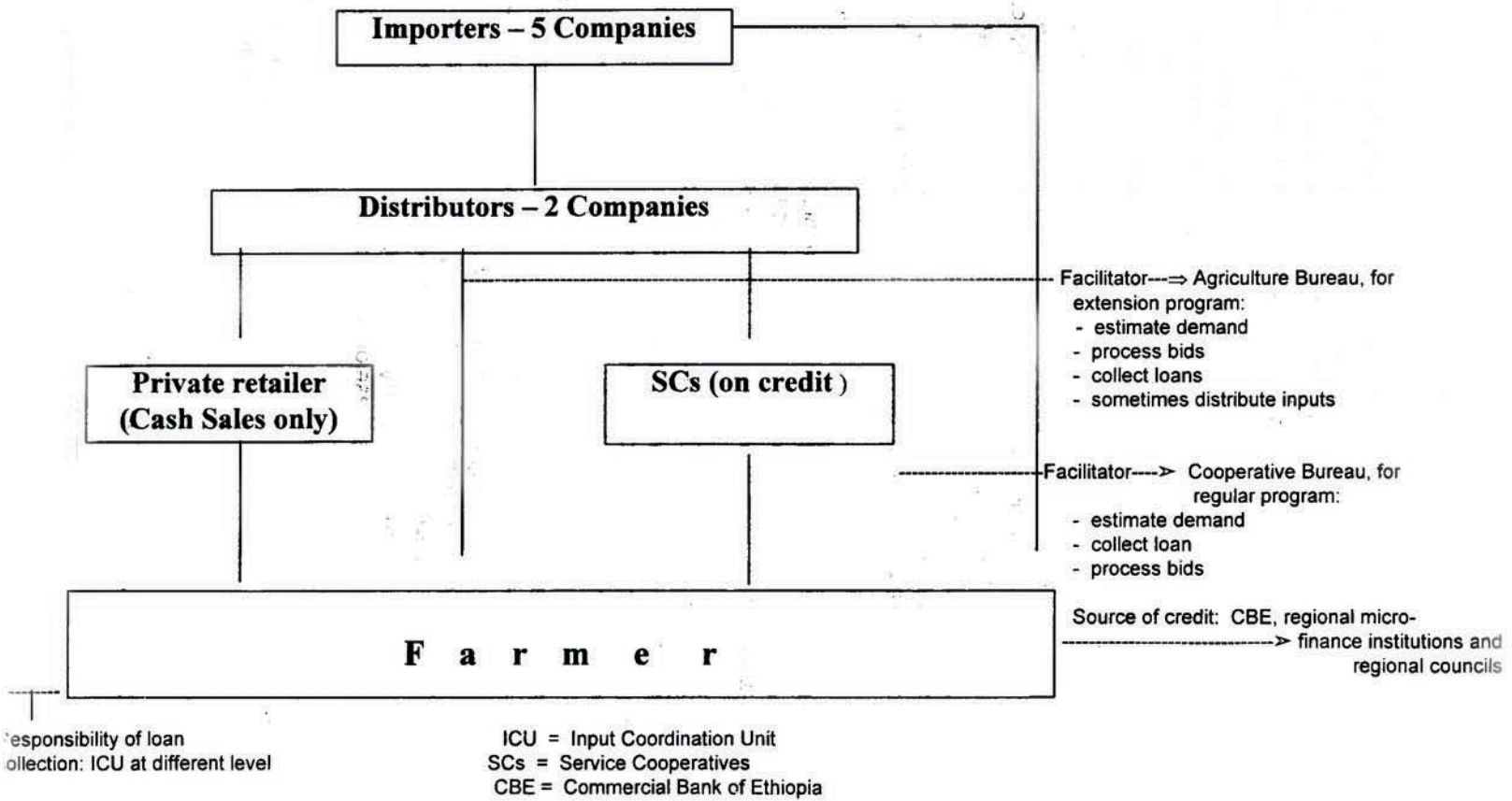
One of the major reasons for limited participation of small wholesalers and retailers is lack of capital. They have no adequate collateral to secure loans from the banks. Moreover, they cannot compete in the retail market with the importers from whom they have procured fertilizer.

All importers and distributors are competing to supply fertilizer through a bidding system in Oromiya Region and SNNPR. The Bidding system is found to encourage more participation than the alternative practice found in the Amhara Region. However, dealers are reluctant to position stock until bid results are made public, thus leading to delays in distribution and transport congestion. Winners are also faced with uncertainty over the quantity to be positioned since quantities specified in the bids often overestimate or underestimate actual demand.

Real competition between importers/distributors is mainly observed in the major fertilizer consuming areas. The interest to take fertilizer to remote and low consuming regions is very low. Fertilizer distribution in remote and inaccessible regions is mostly carried out by the agricultural bureau of the respective region, zone or *woreda*.

As reported by the NFIA on the 4th Annual National Fertilizer Workshop, more than 1000 service cooperatives have participated in fertilizer marketing in 1999. However, most of these service cooperatives are not strong both in terms of manpower and capital to properly handle the fertilizer business. They are highly dependent on

Chart 1. Fertilizer Distribution Network in Ethiopia



importers/distributors who transport fertilizer to their stores. The operation of most of the existing service cooperatives does not go beyond supplying information on fertilizer-demand and arranging credit facility.

3.3. Credit Administration

Until 1992, fertilizer sales to farmers were largely financed through credit from the Agricultural and Industrial Development Bank (AIDB) (now renamed as the Development Bank of Ethiopia, DBE). But AIDB/DBE sharply reduced its supply of fertilizer loans in the early 1990s as its existence was threatened by massive default. Local government officials had to apply administrative measures to enforce repayment. As a result, loan recovery improved as farmers were threatened with fines and imprisonment. In 1994, the Commercial Bank of Ethiopia (CBE) became involved in the extension of fertilizer credit along with DBE.

Beginning with the 1994-cropping season, a local NGO called Dedebit Credit and Saving Institution Share Company was involved in input credit extension activity in Tigray Region. Similar NGOs have been also established in Amhara, SNNPR and Oromiya. These institutions are not ready, both financially and technically, to fully handle the input credit requirement of their respective regions from their own resources. In addition, strong cooperatives are extending input credit for poor member farmers from their own finance.

Due to large number of defaulters, banks were not interested to extend input credit to farmers. The regions came into the picture of credit administration to fill the gap. Since 1996, the responsibility of credit disbursement and collection has been transferred from the banks to the regional governments in the major fertilizer consuming regions. The regional governments estimate their fertilizer credit requirements and sign a loan agreement with the banks. The money is then advanced through service cooperatives and farmer groups for payment to suppliers of fertilizer.

Fertilizer suppliers get purchase order (to sell fertilizer on credit) and payment order (to collect their money from banks) from institutions delegated by the regional government to administer input credit. Most of the time, payment to suppliers is delayed, as this process is long and bureaucratic. As a result, suppliers either estimate the interest cost for this period and include it in the selling price of fertilizer or carry the burden of interest cost by themselves.

Credit allocation and collection procedures have deviated from the principles of normal banking operations. The allocation of credit is not only bureaucratic but the system has also distorted the market. Importers allege that this situation has allowed

some local government authorities to direct input credit sales in favor of some companies.

The time of loan repayment arrangement is also another problem area. Farmers are forced to pay their fertilizer loans immediately after harvest. Grain prices drop to very low levels since the grain market is congested by the oversupply immediately after harvest. The interest of farmers who are willing to incur additional costs by delaying crop sales cannot be accommodated under the existing arrangements.

The majority of farmers in Ethiopia (over 80%) buy fertilizer on credit. But there is no effective mechanism to enforce repayment. One commonly applied measure to enforce repayment is to require all members of a service cooperative or peasant association to repay all previous loans before a new loan for the current season is approved. Fertilizer sales may be suspended even when the number of defaulters is small and when the reasons for default are legitimate (e.g. crop failure). Delays in fertilizer sales often result in delays of planting time, leading to substantial productivity losses.

Micro-finance model has rarely served as a vehicle for lending to support seasonal agricultural input purchase. It has rather proved most effective for funding activities such as petty trading, small-scale agricultural processing operations, small-scale dairy production and other livestock-related activities. This is mainly because such activities do not exhibit a pronounced seasonality and are conducive to the making of small, regular loan repayments. Micro-finance for seasonal agricultural activities implies that all group members would acquire their loans simultaneously and would expect to repay at the same time, raising the possibility of mass of default. There would also be significant covariance of default risk across members, thus undermining the spirit of group liability (Poulton et.al., 1998).

4. CONCLUSIONS

Efficient and sustainable agricultural input supply system can best be achieved by providing farmers with freedom of choice of products, source of supply, and conditions of purchase. In a competitive market, freedom of choice provides the incentive for private sector entrepreneurial initiatives and improved efficiency by ensuring that resources are invested in their most-valued uses. Competition creates the necessary conditions for identification of customer-oriented needs and eliminates collusive action. It also ensures that profit objectives are achieved only through sustained market development (IFDC 1999).

Arguing in favour of a competitive market is not a call for a laissez-faire marketing policy. The most important implication of institutional economics is that some kinds of

government intervention are critical. The key issue is what should governments do or not do in order to bring about a competitive market. Private firms are faced with huge transaction costs, in the form of red tape and uncertainty. Positive signals at Federal and regional levels are sometimes reversed at local levels. The rules of participation in fertilizer distribution and sales (mainly credit sales) keep on changing and dealers cannot be sure of what will happen next. It is important that uncertainties and barriers to entry and exit at local level are removed, and level-playing field is created to make the market more competitive. Freedom of operation and equality of opportunity have to be the guiding principles in decisions involving fertilizer retailing and credit administration in all regions. The contribution of small wholesalers and retailers has to be appreciated at all levels of policy decisions and implementation.

Measures must also be sought to mobilize foreign exchange from local sources in order to improve the terms at which it is made available. The cost of fertilizer has gone up due to the restrictive conditions of donors in allocating foreign exchange.

Finally, given the apparent failure of existing fertilizer loan disbursement and collection mechanism, it seems appropriate to devise a more effective system of input loan. It is important to encourage private lending through interlocking loans with grain sales. Interlocking mechanisms allow grain traders to reduce transaction costs and increase returns from lending. It is also essential to promote cash sales. Many better-off farmers use loans because the cost is low and they may not have to pay back.

Table 1. Fertilizer Import by Quantity, Value and Source of Fund (1995/96-1998/99)

Year	Source of Fund	Quantity in MT		Total	Total Value in million USD	Percentage Share from Total Value
		DAP	Urea			
1995/96	- Ethiopian Government	99,337	-	99,337	29.42	29.02
	- IDA (credit)	50,000	-	50,000	15.03	14.82
	- Italian Government(grant)	37,000	-	37,000	9.31	9.18
	- Netherlands (grant)	32,200	-	32,200	9.63	9.50
	- EU (grant)	-	25,000	25,000	7.19	7.09
	- Sweden government (grant)	-	28,000	28,000	6.64	6.55
	- Japan government (grant)	4,274	21,100	25,374	8.41	8.29
	- German government (grant)	52,669	-	52,669	15.76	15.54
	Total	275,480	74,100	349,580	101.39	100.00
1996/97	Ethiopian government	75,000	25,000	100,000	26.96	63.80
	German government (grant)	30,000	30,000	60,000	15.30	36.20
	Total	105,000	55,000	160,000	42.26	100
1997/98	Ethiopian government	66,000	-	66,000	16.51	19.37
	IDA Credit	25,000	50,000	75,000	12.22	14.33
	EU (grant)	83,000	-	83,000	20.91	24.52
	Italy (grant)	45,371	-	45,371	11.19	13.12
	Germany (grant)	37,000	34,000	71,000	14.13	16.57
	Netherlands (grant)	31,000	-	31,000	7.56	8.87
	Japan (grant)	-	10,437	10,437	2.74	3.21
	Total	287,471	94,437	381,908	85.26	100
1998/99	IDA (credit)	121,250	25,000	146,250	30.64	60.27
	ADF (credit)	49,500	-	49,500	12.08	23.76
	Netherlands (grant)	-	50,000	50,000	5.01	9.85
	Italy (grant)	9,962	-	9,962	2.34	4.60
	Germany (grant)	-	7,000	7,000	0.77	1.52
	Total	180,712	82.000	262,712	50.84	100

Source:- Reports of NFIA on Annual Fertilizer Workshops.

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