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Building linkages and bargaining power between smallholder farmers and service providers: learning from a case on soil fertility inputs in South Africa

J. Ramaru, J. Hagmann[1],[2]E. Chuma,[2] P. Ficarelli,[3] M. Netshivhodza,[1] and Z. Mamabolo

Broadening Agricultural Services and Extension Delivery (BASED), P.O. Box 4645, 0700, Polokwane, South Africa,
[1]Process advisor/ consultant, Talstrasse 129, D – 79194 Gundelfingen, Germany.
[2]Univ. of Zimbabwe, Inst. Of Environmental Studies, P.O. Box MP167, Harare, Zimbabwe.
[3]Development of Rural Service Systems, P.O. Box 13732, 0028, Pretoria, South Africa.

Abstract

This paper emphasizes the importance of facilitating the process of linkages between smallholder farmers and service providers as a foundation for accessibility of inputs for soil fertility management at local level. The paper explains how, through the process of local organizational development, farmers are able to mobilize themselves and purchase inputs in bulks at a discounted price and agreeable distribution conditions. Through their local organizations, farmers are able to negotiate and bargain with several fertiliser companies and develop contracts for the distribution of this input with selected suppliers who meet requirements in terms of the price and condition for local delivery of the input. Farmers have used the same principles to form linkages with fertiliser suppliers to access other inputs such as manures, composts and lime in the manner that the majority of the community members could benefit. The paper highlights the role of extension service in facilitating self – awareness of the problem and options and to learn with farmers how to handle the dynamisms of developing fruitful linkages under all circumstances. Initiating linkages with service providers has been an important tool for emancipation of local farmer organizations and scaling out the soil fertility management process to other communities. Institutionalization of linkages at local level can be made possible if controlled and coordinated by strong local farmer organization capable of making service providers more accountable to the organizations and their membership. The instillation of the facilitation skills of this process to farmers should result in strong and sustainable linkages. While the lessons developed enabled farmers to access soil fertility inputs, the process can, however, be used for other innovation systems in community development.

Key words: Input supplies, participatory extension approach, soil fertility management

Introduction

Despite the fact that South Africa is considered as a middle income country, poverty and food insecurity are widespread problems particularly in former homeland areas (Hedden – Dunkhorst,1998). where the majority of many smallholder farmers reside These areas are characterized by high soil degradation and nutrient depletion (Haag, 1999). Under the conventional way of service delivery, utilization of inputs for better soil fertility management has been inadequate, inefficient and ineffective mostly in the former homelands (Bosman, 2001). A major challenge to the new Government of South Africa and input industry was therefore to create an effective system that is able to provide adequate extension and input supply services to underdeveloped rural situations (Ewang, 1999; Skeen, 1999). Given the need to develop sustainable small farming systems, Limpopo Province Department of Agriculture (LPDA) in South Africa started since 1998 to develop strategies that were aimed at re-orientating research and extension practices and policies to better address the need of the rural people living in relatively complex, diverse and risk – prone environments.

There has been numerous attempts to establish farmer co- operatives in rural areas as mechanism to supply inputs to smallholder farmers, but they collapsed because they were not built on ownership and representation but were formed as a result of project intervention (Ewang, 1999). Other attempts of bringing, fertilizers and other inputs to smallholder communities has been through container depots, decentralized stores, and country shops (Van Rooyen, 1998). However, non of the abovementioned strategies was built on the critical fdactor for success for developing strong linkages between farmers and input suppliers: the building of strong local organizations. According to Mekenete (1998),

there is a need for collective action by farmers to establish strong linkages with suppliers of inputs so that farming costs and overheads can be reduced to mutual advantage. In order to derive this benefit, smallholder farmers should be organized to benefit from their economy of scale.

The paper provides lessons developed through the implementation of the Participatory Extension Approach (PEA) from 1988 to date. PEA (Hagmann et al 1988) originated from Zimbabwe and was further developed in South Africa within the LPDA as a way to develop a service delivery program suitable for the majority of smallholder farmers living in marginalized areas. A bilateral program between LPDA and GTZ called 'Broadening Agricultural Services and Extension Delivery (BASED) was instrumental to establish learning cases and supporting scaling up.The paper focuses on the process steps for facilitating soil fertility management at community level with a special emphasis on access to inputs. It describes the key lessons and factors that are important to consider when facilitating linkages between farmers and suppliers of inputs.

The approach to building linkages in soil fertility management within PEA as a wider community development approach

Soil fertility management in the South Africa learning cases was not dealt in isolation. It was part of one among other innovation system which was fostered within community development / PEA. PEA as an approach to emancipate rural communities to take charge of their own development through a high community and individual capacity to organise themselves, to innovate and manage their own dynamic change, and to bargain / negotiate with service providers evolved through an action learning processes together with farmers, extension workers and researchers between 1990 and 1998 in Zimbabwe (Hagmann, Chuma, Murwira and Connolly, 1998).

PEA and local organisational development as foundation

The PEA learning cycle as developed from experiences from the pilot villages in South Africa is composed of six main phases of a whole action learning process (see Figure 1). The phases are: initiating change, searching for new ways, planning and strengthening local organisational capacity, experimentation while implementing action, haring of experiences, and reflection on the lessons learnt and replanning.

Each phase consists of a number of aspects to be facilitated, but local organisational change is the backbone that cut across all the phases and has to be understood as a continuous process (Ficarelli *et al*., 2003),. The long-term outcome of facilitating the PEA process by extension agent is the development of a process of self – organisation at community level and the development of a demand oriented extension service system where the demand and the supply side can come together (Moyo and Hagmann, 2000). The PEA cycle is a learning framework which integrates different methodologies and tools (e.g. PRA, FFS and PTD) in a consistent and rigorous learning process to deal with different topics in agriculture and rural development (Hagmann, *et al.* 1998). Its focus is on agriculture, but due its broader scope as a foundation capacity for rural communities to deal with their challenges, it is being applied beyond.

This new orientation of 'extension' as a combination of social extension and technical advisory service requires a drastic role change of agricultural extension agents from teachers to facilitators with a completely different competence profile than the conventional extension agent (Moyo and Hagmann, 2000, Hagmann *et al.*, 2003. Based on the South African experience Ficarelli *et al*.(2003),stress the involvement of extension staff of the Department of Agriculture was crucial in developing their facilitation competency in strengthening linkages within the communities, between communities and with service providers to develop local innovation systems.

The local organisational development process has been the foundation in building linkages with service providers. Creating the necessary bulking and economy of scale depends on functioning organizations whop can mobilize people to join forces. On the other side, a strong accountability to provide good services from the providers is also reinforced by the demand-pull of the poor themselves. Therefore, strengthening the poor is not primarily a function of material resources, but of creating social capital and bargaining capacity. The role of local organisations is therefore central for ensuring participation in local decision-making processes, aggregation of the demand from the majority of people in the community and for coordinated delivery of service responding to their needs (Ficarelli *et al*., 2003)

The process of local organisational development as illustrated in Figure 1 of the learning cycle is not a once – off event, but is facilitated as a process that last for over 2 years to cover all the phases of the PEA process. During this period, community facilitators are engaged in a process of building a trustful relationship with the community and re - negotiating important values such self-reliance, self-organisation, unity and cooperation and inclusivity and equal opportunities. Figure 2 further illustrates the interaction between the groups, individuals and the 'umbrella' across the groups in the local organizational development process. It is a consultative process where individuals, groups and their community representatives are interlinked through important values such as sharing, feedback, accountability and linkages. It is mainly the group, goals, the weak strategy and weak leadership and

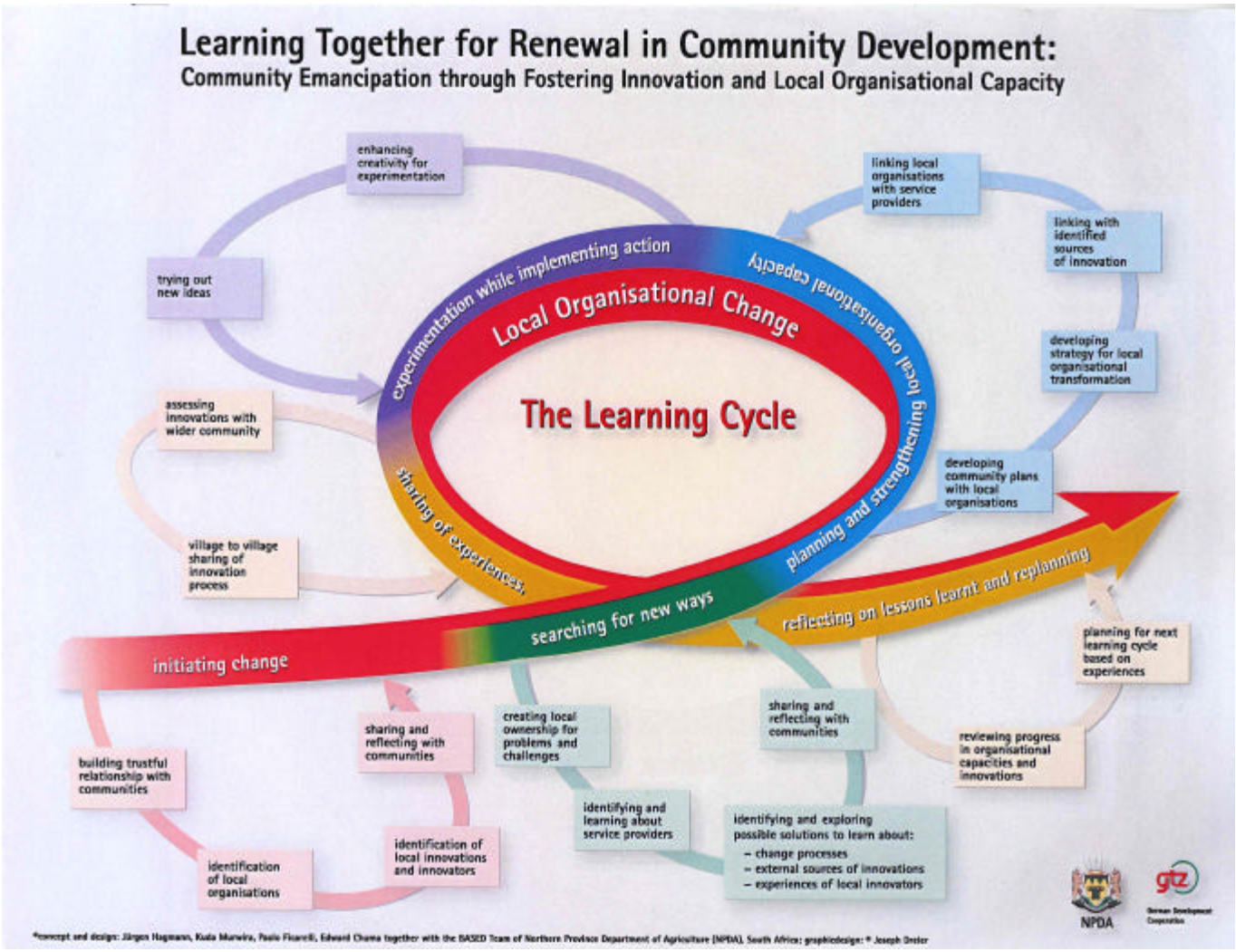

Figure 1: The basic phases of the learning cycle as developed through an action-reasearch process in South Africa

communication which makes the groups ineffective and ultimately irrelevant. The re- establishment of communication among local organisations allows for the development of a common vision for change and the energy to pursue change with the support of service providers. This enables to build community linkages with the outside service providers. Taylor (2001) further indicates that the degree of self – horganisation is increased as the local organisations are able to develop innovation systems that addresses some short-term problems

The soil fertility management process

Lessons that were generated from the implementation of PEA process lead to further development of a process of soil fertility management (SFM), which was facilitated to help farmers in addressing their problem of declining soil fertility. Unlike other technological innovations, the process of SFM was not adopted, but rather adapted though a process of large – scale experimentation based on farmers' experiential learning (Ramaru *et al*., 2000; Ficarelli *et al*., 2003). Learning tools (Hagmann and Chuma 2002) which help farmers to discover the biophysical processes and systemic interactions between soil fertility and plant growth were developed for SFM and played a key role in raising awareness. A conceptual framework for the SFM process was developed in an innovation system perspective through the Learning Wheel Methodology. Based on practical field experiences, the critical factors for success and failure were distilled and the major cornerstones for intervention in building an innovation system for SFM was constructed. This framework was then translated into implementation process steps in an action learning mode. (Figure 3). The SFM cycle was further developed and improved along with the experiences emerging from practice.

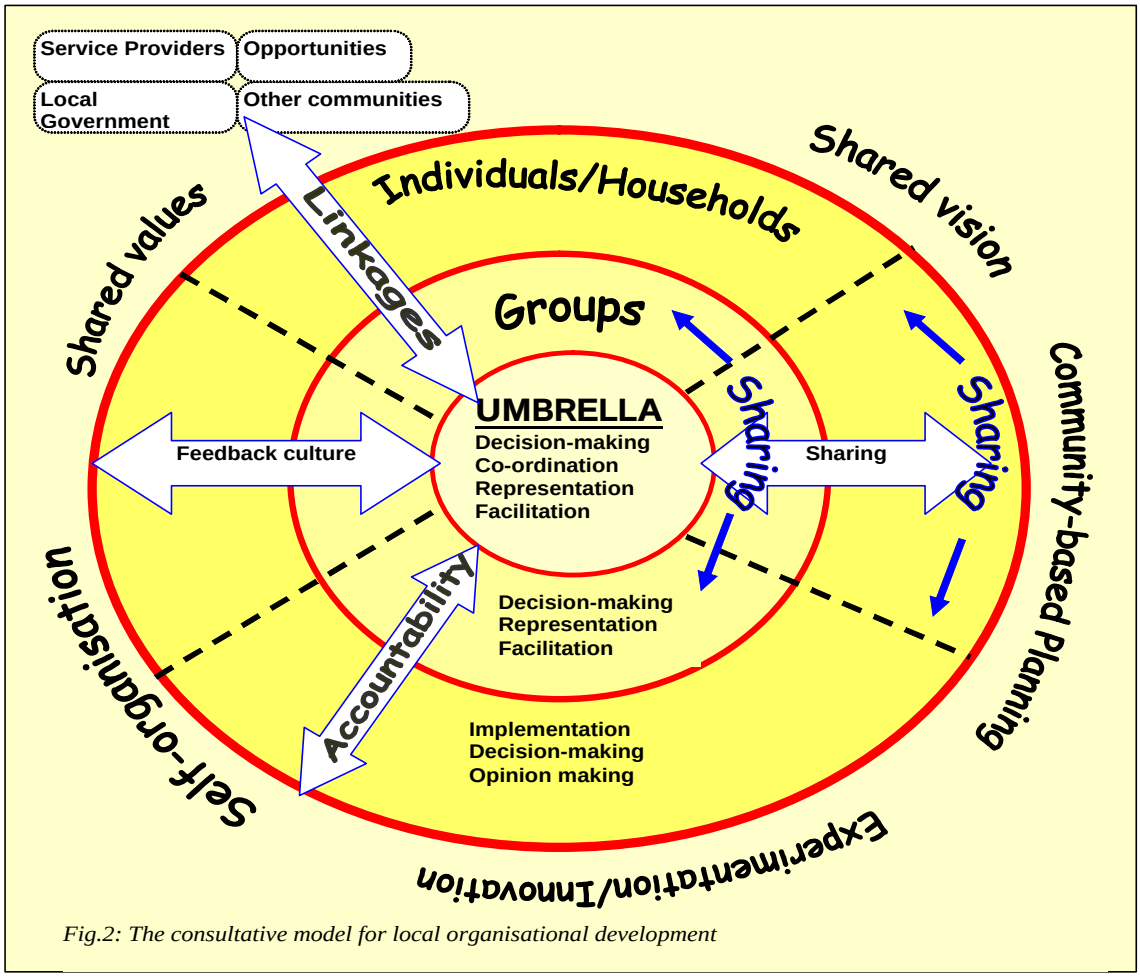

Fig.2: The consultative model for local organisational development

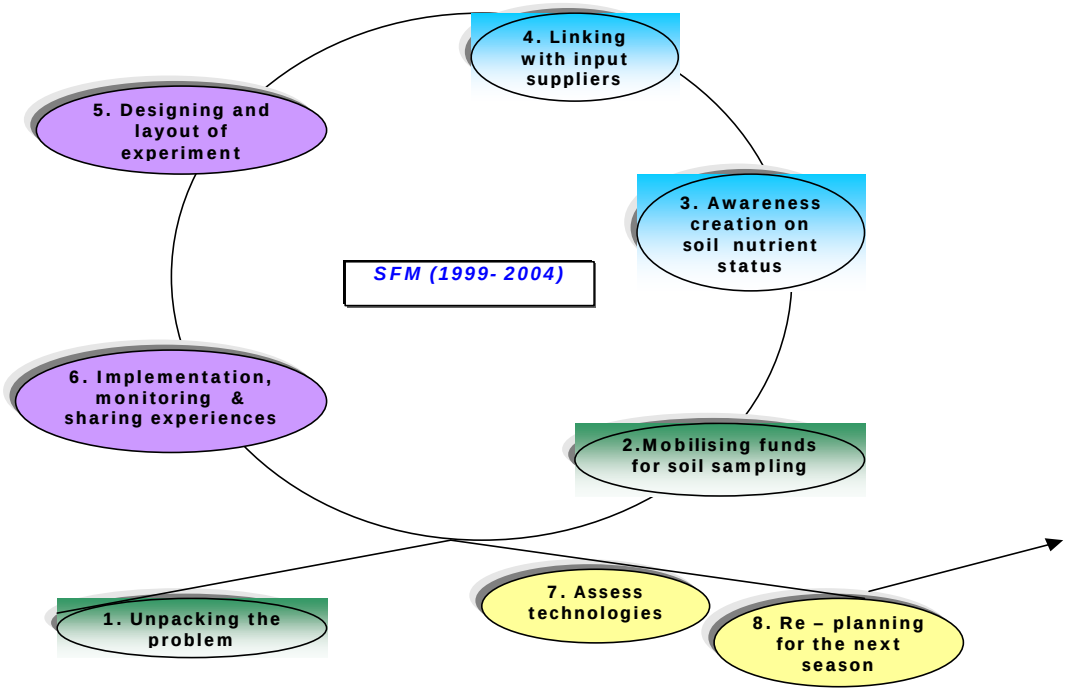

Figure 3. Step by step process for the facilitation of soil fertility management (SFM) process at community level

The process used to facilitate the development of lessons in soil fertility management at community level in South Africa followed the same guiding principles and core values characteristics of the PEA process (See Fig. 3). Lessons that came out from the implementation of SFM process led to the development of an action orientated training/ learning process for extension officers and farmers to facilitate the problem of declining soil fertility at community level. To emphasise the importance of farmers' involvement in the learning process, Reijntjes (1997) indicates that development workers and researchers are bound to fail if they do not take into consideration farmers' own learning process in their efforts to help farmers to solve their problems related to soil fertility management. On the same note, Probst and Hagmann (2003) indicate that innovations need to be "owned" by the local users, if changes in behaviours leading to impact should be achieved.

In the 1970s and early 1980s farmers benefited from subsidies in fertilizers that were distributed through the cooperatives established in the communities (Kirsten *et al*. 2001) and their demand for inputs has been seen as a derived demand for food (Bosman, 2001). According to Ewang (1999) many of the farmer organisations formed around the "cooperative model" have collapsed as soon as the external assistance was withdrawn and this lead to the serous doubt on the appropriateness of this model in rural communities. Experiences developed from facilitating PEA/PDA in the learning cases of Limpopo Province in South Africa reveals that a strong pillar for enabling communities to access inputs for the benefit of the majority of farmers is through the local organisational development process described above. According to farmers, in the past only farmers working with the extension officers in the form of a project would get access from the fertilisers. Farmers could collect money and the extension officers would go and buy those fertilizers from suppliers that he/she would establish linkages with. With the introduction of the BASED program there has been a shift from "project approach" to "community approach" out of which the majority of farmers in the community have access to the input though established local organisations.According to Figure 3, the step for facilitating linkages with input suppliers comes after farmers have been exposed to the awareness creation on the nutritional status of their soils. During feedback of the results of soil analysis, farmer's knowledge about their soils is interlinked with the soil analytical results from the laboratory and from these understanding different options for improving the soil nutritional status are discussed and suggested. Furthermore, a mini action plan is developed where strategies for accessing suggested inputs are developed and stakeholders who will be involved are identified.Extension officers involved in the facilitation of the step on linking farmers to the inputs suppliers find themselves involved in several process steps within the overall framework of the process of soil fertility management.

> *"In the past we were stupid to depend too much on the extension officers for input purchases and delivery. In 1990, we gave the extension officer R 30 each for 50kg bag of lime and we realise now that the same size of a bag cost now R12 from the local dealer in town" words from one of the farmers who belonged to a project group"*

There are defined process steps for accessing different inputs, however, there are some similarities and differences at different stages of communities linkages with input suppliers. Farmer representatives chosen to start the process of negotiating with the input suppliers are selected from a transparent process that involve developing firstly the criteria for the kind of candidates suitable for the identified task. In both occasions, farmer representatives are given a list of key - issues by the community that will guide them in the negotiation process with the input suppliers. Where traveling has to be done, the selected negotiators are given money for traveling and food by the community themselves.

"In the past it was only the extension officer who knew where farmers can get inputs. When he/she died, he would be buried with the input, and when he/she was transferred, the input would also follow him". Words from a farmer in Spitzkop, 1999. Initially, the process of organising fertilizers involved a meeting during which more than one input suppliers address farmer representatives on issues related to prices and condition of delivery of the inputs to the community. Agreements are also reached on how payments will be made and at what volume of the inputs bought there will be a discounted purchase. Farmer representatives would then arrange a community meeting together with the local leadership for a feedback on the agreements with the service providers. It is during these report back that final decision with respect to which input supplier is appropriate for the community requirements that a final decision is make about the supplier who has to be their provider of inputs. Process steps on who will be responsible to collecting funds, depositing the money to the bank account of the supplier and making some necessary liaison are well defined for each activity identified.

While the procedure above is still followed, it is now a common trend to notice fertilizer input suppliers addressing the whole community on invitations of the local organisations. In so doing, the steps that involves the farmer representatives to act as initiator of the process in linkage with the service providers is eliminated. The meeting between the communities directly with the service providers provides an opportunity for everybody to get firsthand information and contribute to the final agreement. However, it is a costly exercise for the input suppliers where many communities are involved and it works well where the supplier has a community liaison officer who also understands and speaks their own language. With the higher demand of fertilizers more especially in the communal areas, this would

also limit coverage in terms of making the input to be accessible to the majority who need it. Since 1999 when the linkages with farmers in the pilot villages were developed, there has never been a constant supplier of fertilizers over the years. Change of suppliers for each year has been due to factors such as:

- Suppliers preferring not to deliver inputs to the communities as agreed in the previous year, but still willing to provide services to the farmers
- Fertilizers representatives who served as linkages between the company and farmers leaving for greener pastures or transferred
- Communities identifying another suppliers with better prices and conditions of delivery of inputs
- Selling of fertilizers was being done at the local shops, wholesalers and cooperatives

The process for the organisation lime is not that different from that followed by farmers in accessing fertilizer. Initially, farmers chose representatives to visit supplier at their depot and negotiate for bulk delivery of lime to the community. While bulk sales were cheaper, farmers who did not manage to be part of the initial processes had to look for other alternatives of getting the inputs. This created a market for the local shops, wholesalers and cooperatives to sell the lime at a slightly higher price but still affordable to the majority of the farmers. The trend is that farmers would buy the lime in bulk as organized groups from the manufacture months before the season start, and those who did not have the money during that time will buy this input as individuals from the local sellers.

The process of accessing poultry and cattle manures in bulks from the depots is another interesting feature that tests the degree at which the community is organized to benefit the majority of farmers. Initially, farmers chose representatives for purposes of negotiating the possibility of collecting these inputs from private companies that dispose this input as waste. Upon reaching an agreement with the management of the companies that farmers can collect the inputs for free, they collected money to hire transport. In this case, the costs incurred were in transport, which is always possible when farmers contribute more money because they can collect several loads of the manure. Farmers preferred to collect the manure in groups of eight to ten depending on the size of the truck. They package their manure in bags (usually 80kg), which they bring themselves and they correctly mark them. Farmers travel with the truck and do the collection of manure and the loading and unloading of the bags themselves. They usually share an equal amount of manure depending on the number of farmers involved and the size of the truck. This process lead to the following outcomes:

- The local truck owners were tempted to increase the price of transportation as the demand for the manure increased.
- Many truck owners preferred to collect the manure themselves and sell the to them communities. While this was good, each bag of manure was comparatively expensive because the truck owner would include the costs of labour, which is not a factor when farmers collect the manure themselves.
- Many local cattle owners with kraals started to package the manure into small bags and sold them to the farmers. But farmers complained about the high prices of the manure relative to the amount as well as its poor quality.

> *"In the past it was only the extension officer who knew where farmers can get inputs. When he/she died, he would be buried with the input, and when he/she was transferred, the input would also follow him". Words from a farmer in Spitzkop, 1999.*

Impacts of the Process of Linking farmers and service providers

The impact of the soil fertility management process and the linkages and negotiation of farmers and service providers were assessed at different levels:

1. the level groups and communities being involved in the whole process and its spreading
2. quantities and quality of inputs purchased
3. farmer assessment of their perceived benefits of the whole process

The detailed assessment will be described in this chapter

Analysis of communities and involvement in the organisation of inputs

Data was collected during 2002 to assess the impact of the BASED program from six pilot villages in both Vhembe and Capricorn. The process of SFM started in the three villages of the Capricorn Districts. It was in these villages that the facilitators helping farmers to improve their soil fertility had to innovatively develop mechanisms of farmers' access to the inputs alongside the strengthening of the local organisation. It can be seen from Table 1 that in the first two years of implementing SFM in the villages, about three to four villages were formally involved except for cattle manure. Except for poultry manure, the number of villages involved in the organisation of all the input mentioned in the table increased with fertilizers drawing more interest. Farmers explain this huge increase as result of the more accessibility of fertilizers to the majority of communal farmers who were previously not working directly with the extension officer and therefore could not get the input.

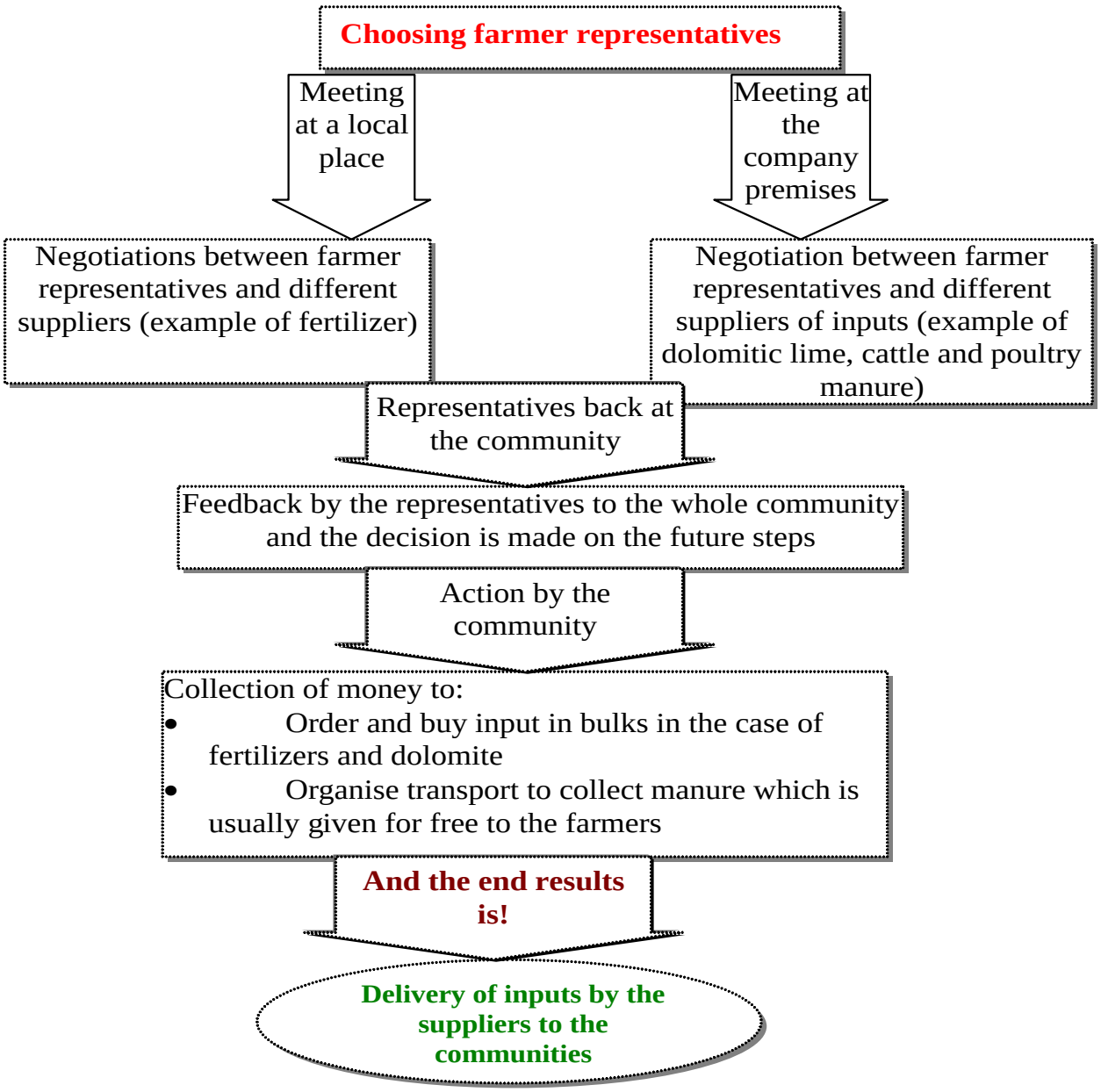

Figure 4. Different events in the facilitation of linkages between farmers and suppliers of inputs

The general trend is that the available service providers increased for all the inputs since the BASED program started to "An extension officer is now a facilitator for input acquisition and not an input supplier as in the past" said a farmer from GaMogano, March 2002"work with farmers. The table also shows how local input suppliers started to emerge as a result of the increase in the demand of the inputs. While the rest of the information in Table 1 comes from all the six pilot villages, the information on cattle manure, however, was collected from GaThaba, one of the six villages where local groups were clear on who has been selling cattle manure in the village.

> "An extension officer is now a facilitator for input acquisition and not an input supplier as in the past" said a farmer from GaMogano, March 2002"

Quantification and qualification of the organisation inputs

As indicated earlier, the accessibility of inputs in the villages was benefiting everybody after the introduction of the BASED program irrespective whether they were previously working with the extension officers or not. The information below was obtained from farmers in the villages where BASED was implemented, but also from the input suppliers who worked with the local organisations. As indicated in Table 1 three to four villages were involved in the organisational process of accessing the inputs during 1999/2000 and 2000/2001 and 26 villages for 2001/2002. The amount of money collected by farmers in purchasing inputs during this period decreased during2000/2001.

Table 1 Number of villages and farmers involved in the organisation of inputs

Input	Factor	1999/2000	2000/2001	2001/2002	Average in 3 years
Fertilizers	Number of villages	3	4	26	**11**
	Number of farmers	494	333	2 211	**1 012**
	Number of bags (50kg)	887	624	3 818	**1 776**
Dolomitic lime	Number of villages	3	2	9	**5**
	Number of farmers	74	4	198	**92**
	Number of bags (50kg)	648	18	2 541	**1 069**
Poultry manure	Number of villages	3	4	2	**3**
	Number of farmers	60	53	54	**56**
	Amount of manure collected (tons)	27	21	83	**43**
Cattle manure	Number of villages	0	0	9	**3**
	Number of farmers	0	0	168	**56**
	Amount of manure collected (tons)	0	0	155.2	**52**

Table 2a. Number of stakeholders involved with farmers in the Capricorn and Vhembe before and after BASED program was introduced

Input	Before BASED	With BASED
Fertilizers	4*	5*
	2**	7**
Dolomitic lime	1*	2*
	0**	8**
Poultry manure	0*	3*
	1**	5***
Cattle manure	0*	4*
	N/A**	5***

*External input suppliers; **Local input supplier s

Table 2b. Summary of the money collected by farmers in the Capricorn and Vhembe districts with respect to the organisation of inputs

Input	1999/2000	2000/2001	2001/2002	Total
Fertilizer	58 267	49 522	350 758	458 547
Dolomite	4 627	216	34 306	39 149
Poultry manure	2 000	4 400	9 036	15 436
Cattle manure	0	3 300	34 185	37 485
Total	64 894	57 438	428 285	550 617

The reason was that in 2000/2001, farmers collected organic inputs such as cattle and poultry manure free from the suppliers. For these alternatives, farmers had to pay for the transport to deliver the manure to their communities. While the amount indicated in Table 2 refers to costs of fertilizers and dolomite, for cattle and poultry manure, the money was solely collected to pay for the cost of transport to deliver the input to the villages. The increase in the amount of money collected by farmers for inputs in 2001/2002 was because of the increase in the number of villages involved in the organizational process; especially fertilizers (see Table 1). The figures on the number of farmers as shown in Table 1 involved in the purchase of fertilizers described in Table 3 is subjective since one farmers was able to acquire more than one type of input. It is usual for a farmer to buy bags of superphosphate for incorporation in the soil during soil preparation, mixed fertilizers (2:3:2)+22 during planting and LAN for top – dressing during weeding.

Farmer assessment on the benefits and about the inputs

Part of the assessment process of the BASED program during 2002 was to get the views of farmers about the status of accessibility of input before the program was introduced and during the project life. Farmers' comments were capture and recorded in Table 4.

In Table 4, some comments by farmers indicate the situation where they only had to depend on the extension officer for the availability and accessibility of inputs. What is also emphasised by farmers is that where the extension officer was used as the only channel for accessing inputs, only those who were receiving services from him or her would benefit.

Quotations from the farmers about the inputs (Captured during the assessment of the BASED Program in 2002):

1. "Fertilisers are expensive when farmers buy them as individuals, but cheaper when acquired as a group because we get a discount and we also save on the transport costs .. ……"Jansen Mudau, a farmer from Mbahela)
2. "I harvested 40 bags of sweet potato seed vines on the plot where I applied lime last year, and only got 25 bags of vines where lime was not incorporated" (Rosina Lubago, a farmer from Mbahela)
3. "Where cattle manure is applied there is a lot of "morogo", an indigenous spinach used for relish (Anna Mamabolo, a farmer from GaThaba)
4. "On the field where poultry manure has been applied, it provide greenness to the maize leaves from emergence to harvest without the application of LAN fertilisers for top – dressing" (Jane Mokgoko, a Farmer from GaThaba)

Table 3. Organisation of fertilizers in Capricorn and Vhembe districts

Type	Number of farmers			Number of bags (50kg)			Money contributed by farmers (SA Rands)		
	99/00	00/01	½	99/00	00/01	01/02	99/00	00/01	01/02
2:3:2 (22)	290	242	1 183	628	441	2 557	46 434	34 504	242147
LAN	204	84	1 014	259	178	1 218	11 833	14 722	106074
Super	0	7	14	0	5	43	0	296	2537
Totals				887	624	3878	58267	49522	350758
Number of villages	3	4	26	3	4	26	3	4	26

Table 4. Farmer perception on the availability of inputs before and during the BASED project period

Input	Before BASED	With BASED
Fertilizers	Only farmers in the project and irrigation schemes had access to the input through the extension officer	The majority of farmers in the community, whether they belong to the project or not have access to the input
Dolomite	Introduced and supplied by the extension officer	Introduced by the extension officers though awareness creation but farmers are able to buy it from many suppliers
Poultry manure	Farmers did not use this input because they were not able to collect a lot from their homestead	Farmers can now get the input from several poultry farmers for free and they only have to organize transport
Cattle manure	Farmers in the project and irrigation scheme were prohibited from using the inputs by the extension systems	The majority of farmers realized the importance of this input and can get it from several suppliers cheaply

Lessons learnt and Outlook

The process of linking farmers with service providers as described in the paper had within itself several mini processes that had to managed both by the extension officers and farmers. The first challenges was to re - orientate the extension officers through participatory approaches so that they should understand how to facilitate the need of the majority of previously neglected clients and help them to improve their livelihood. In the process, extension officer should appreciate that they need the partnership with farmers in community development and they have to shift from being teachers to facilitators. Both the PEA and SFM processes are centrally kept in motions by the ability of the officers to facilitate a strong local organisation that subscribe to values such as self – reliant, ownership and control, unity and self – organisation. Some lessons from facilitating SFM process reveals that increased accessibility of inputs to the communities is to a large extend a factor of strong bondages developed between local organisations and input suppliers.

Facilitation of several options from feedback of the results of soil analysis and identifying with farmers where to acquire inputs to solve their problem is the first step of creating partnership between communities and suppliers. Hence, farmers have to take the lead through their local organisations, and that include choosing right representatives based on criteria which they have developed in an informed way themselves, negotiating with the input suppliers, providing feedback on the results of the negotiation to the entire community and managing the delivery process of the inputs in the community. Through developed linkages with service providers, the majority of farmers will have access to cheaper fertilizers at discounted prices when they acquire them in bulks. Because farmers are also exposed to more than one supplier, they are able to demand a quality service and can renegotiate new conditions. Farmers managed to use the skills they acquired in negotiating for the acquisition of fertilizers to access poultry and cattle manure as additional options for soil fertility. Since these inputs were provided for free, farmers were required to collect money for transport, which was relatively cheaper for them.

While there were many success factors noted during the facilitation of the process of linking farmers with input suppliers, there were also some challenges that farmers encountered:

1. Each year there were new fertiliser suppliers making new agreements with the farmers. Farmers explained that fertilizer companies are only interested in establishing themselves in the first year, and the following year they are unable to provide the same quality of services
2. There seem to be no harmony between price fluctuations and the rate at which farmers collect money through self – organisation. It has happened many times that when farmers had made a collection of money and they were ready to make payment to the fertilizer supplier, the price of fertilizers has increased.
3. The availability of poultry and cattle has created an opportunistic market for the truck owners, but this is in conflict with farmer preferences of collecting the input themselves. Once truck owners had realized the potential of making business from selling the manure, they either increase the money required to hire their transport or collect the manure and sell to farmers at a much higher price.

The process of linking farmers with service shows how flexible the PEA and SFM process should be since other communities only emerge at a stage where they want to access input and are not very interested in the other components of the two processes.

The most critical aspect in this work has been the facilitation capacity of extension agents to set in motion the whole process. Facilitating the strengthening, often renewal of local organisations towards more democratically organized, less authoritarian and power-based organizations and leadership has been the real challenge, not only in South Africa, but also in similar cases in Zimbabwe (Hagmann et al 2002). Unless, the capacity of civil society and citizenship and rights aspects are built into the local organisations who can then demand quality services and aggregated inputs & outputs, service providers will only in few cases be able to respond with good services in a sustainable manner. It will remain a goodwill system rather than a performance system regulated and the quality assured by demand.

More work still has to be done in relation to the PEA and SFM process to deeply determine the triggers that make these linkages to work and the role of public and private sector in these processes. Some work is still necessary to find out how the linkage process will run without the continued facilitation support of the extension officers.

References

Bosman, L., 2001. The South African Fertilizer Industry – Quo Vadis- An organized Agricultural Perspective. Fertilizer Society of South African, Journal, June 2001

Ewang,P.N., 1999.Farmer Cooperatives: A strategic tool for reducing economic poverty in rural South Africa. Proceedings of 33rd Conference South African Society for Agricultural Extension: Participation and Partnership in Extension and Rural Development, Bloemfontein, Free State Province, South Africa,11 –13 May 1999

Haag, W.L., 1999. The Strategic Role of Fertilizers and other inputs in Increasing Food Production: The Sasakawa Global 2000 experience with small sclae farmers in Sub – Sahara Africa. Fertilizer Society of South African, Journal, June 2001

Ficarelli, P., Chuma,E., Ramaru, J., Murwira, K. and Hagmann, J., 2003. Strengthening local Organizations for Conservation Agriculture – Some experiences from South Africa and Zimbabwe. In the proceeding from the II world congress on conservation agriculture, Iguassu Falls, Parana – Brazil, 11 – 15th August 2003.

Hagmann, J. Chuma, E., Murwira, K. and Connolly, M. , 1998. Learning together through Participatory Extension: A guide to an approach developed in Zimbabwe. Publ.by the Dept. of Agric., Technical and Ext.Services, GTZ and ITDG Harare, Zimbabwe. 59 pp. http://www.gtz.de/agriservice/areas/concepts/concepts.html#7 or modified under http://www.odi.org.uk/agren/papers/agrenpaper_94.pdf

Hagmann, J. Chuma, E., 2002. Enhancing the adaptive capacity of the resource users in natural resource management. In: Agricultural Systems Vol 73 (1), p. 23-39, Elsevier publications. http://www.elsevier.com/locate/agsy or http://www.prgaprogram.org/pnrm/resources/pnrm_tools_author.htm#H

Hagmann, J., Chuma, E., Murwira, K. Connolly, M., Ficarelli, P., 2002. Success Factors in Integrated Natural Resource Management R & D – Lessons from Practice. In: Conservation Ecology 5(2): 29. [online] URL: http://www.consecol.org/vol5/iss2/art29

Hedden – Dunkhorst, B., 1998. Food Security and Income Diversification: The case study of rural households in South Africa's Northern Province. A paper presented at the international conference on food security and crop science, 3 –6 November 1998, Hisar, India

Kirsten, J.; Poonuth, R., and Calcaterra, M., 2001. Factors Affecting the Demand for Fertilizers in south Africa: An application of commodity modeling. Fertilizer Society of South African, Journal, June 2001

Makenete, A., 1998. Emergence Sector Under – Exploited.Land: the budding farmer's key to property, June 1998, Vol 2, No.3

Moyo, E. and Hagmann, J., 2000. Facilitating Competency Development to put Learning Process Approaches into Practice in Rural Extension .Paper published in: FAO (2000): Human resources in agricultural and rural development 2000, FAO, Rome. pp. 143-157. http://www.fao.org/DOCREP/003/X7925M/X7925M14.htm

Probst, K. and Hagmann, J. Fernandez, M.and Ashby, J.A. 2003. Understanding Participatory Research in the Context of Natural Resource Management – Paradigms, approaches and typologies. ODI – AGREN Network paper No. 130. http://www.odi.org.uk/agren/papers/agrenpaper_130.pdf

Ramaru J., Mamabolo, Z., and Lekgoro, J., 2000. Improving Soil Fertility Management in South Africa: Learning through participatory extension approaches. Managing Africa's' Soils No. 19. IIED; London.

Reijinjies, C., 1997. Soil Fertility Management Under Pressure.In: Rebuilding Lost Soil Fertility.LEISA:ILEIA Newsletter for Low External Input and Sustainable Agriculture, Volume 13, No. 3

Skeen,J.B., 1999. Challenges Facing the South Africa Fertilizer Industry. Fertilizer Society of South African, Journal, June 2001

Taylor, C.E., 2001. Scaling Up Social Development. Lessons in scaling up. LEISA,Volume 17, No3, October 2001,

Van Rooyen, C., 1998. Fertilizers for Small Farmers. Land: the budding farmer's key to property, July 1998, Vol 2, No.3