



## An Evaluation of Institutional Innovations for Improving Smallholder Horticultural Farmers' Access to High Value Markets: Case of Chinamora District, Zimbabwe

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### ABSTRACT

*Institutional innovations are increasingly seen as key towards achieving agricultural growth, (by overcoming market failures), but also to ensure that resource constrained smallholder farmers benefit from the process through participating in high value markets. The prime objective of the study was to determine if current institutional arrangements promote participation of smallholder farmers in high value markets through comparing formal and informal markets. The present study was conducted at Chinhamhora district in Zimbabwe. A survey was carried out on a sample of 120 smallholder farmers in the region. Institutional Analysis and Development (IAD) conceptual framework was used to analyze and explain different strategic interactions between farmers and traders. Descriptive Intermediate Performance and Overall Performance analysis was used to compare performance of institutional arrangements in informal and formal markets. The results showed that there was lack of cohesiveness amongst the farmers and this resulted in individual selling of the produce (tomatoes) rather than forming an institution through which they could sell the agriculture produce. Farmers should therefore, develop effective mechanisms for collaboration and linkages, investing in market intelligence, creating a sea change in thinking and practice, and building trust.*

**Key Words:** Institutions Informal formal markets Smallholder farmers

### INTRODUCTION

It was opined by [1] that agriculture is still expected to be the main occupation and source of livelihood for majority of the small land holders; this is especially true for the Sun Saharan region of Africa. Smallholder farmers face a number of challenges in accessing high value markets [10]. They are excluded from high value markets because they are neither economically efficient in their production systems (for successful integration into the high value markets) nor are they economically empowered to commercialize their production [8]. There are high expectations on the potential of partnership between government and Nongovernmental Organisations (NGO) and private sector organisations, with a public private partnership model this can enable smallholder farmers to integrate into high value markets. The empowerment initiatives have generally been less smooth and less rapid than expected, thus little progress has been achieved in transforming communal agriculture in Zimbabwe [2].

Over the last decade it has been observed that there is an expansion in the smallholder horticultural production within Zimbabwe the lead in general being taken by the vegetable sector. Support programs by the government, NGOs and the private sector played important roles in addressing key production constraints. Although these investments have had significant impact on the performances and prospects of the vegetable sector, there is still need for institutional innovations to help overcome market fluctuations, and so ensure that resource constrained smallholders participate in high value and perishable agriculture markets.

Participation of the small and marginal farmers' in high value vegetable markets can be beneficial to guide them away from the vicious cycle of poverty thereby increasing their access to cash income to spend on nonfarm activities such as (s clothes, school fees etc.) besides allocating money for the improvement of farm activities by procurement of

implements and farm inputs, thereby, promoting farm production, thus ensuring food security, employment and income generation in rural areas. These activities can therefore reinforce the overall development and poverty reduction goal [3]. Institutional arrangements can thus play major roles in agricultural and overall economic development. They bring together willing buyers and sellers of produce, provide incentives for fair trade, and help build trust among players.

### **Purpose of Study and Justification**

While reforms in the land laws are currently high in the agenda of the government as means of redressing colonial imbalances, there is a growing concern about access of smallholder farmers to agricultural markets from which they have been marginalised for too long. Therefore, the creation of marketing opportunities and institutional arrangement support systems that facilitate integration of small farmers into national economic system is important. Institutional arrangements should be improved in order to remove current distortions in the agricultural markets, facilitate the flow of information and functional market mechanisms [4], and only then will agriculture offer opportunities for communal area development.

A major reason why smallholder farmers who can produce a surplus remain trapped in the poverty cycle is lack of access to profitable markets. Farmers are often forced to sell to the buyer of convenience at whatever price that buyer dictates. There is need to determine if the prevailing institutional arrangements in the vegetable sector are enabling smallholder farmers to participate in vegetable/ agriculture supply chains thereby ensuring/realising better profits.. The problem is centred on the effectiveness and efficiency of institutional arrangements in the vegetable sector. It is critical to understand the best practices for connecting smallholder producers with formal markets, and bring these findings into the wider policy arena. The focus of the research is on how the institutional arrangements perform their functions in enabling smallholder farmers to participate in high value markets through reducing transaction costs.

The transaction costs inhibit both market development and access to existing markets, in turn inhibiting economic and technological development. Low levels of economic activity lead to thin markets, inadequate, high transaction cost and risks and high unit cost for infrastructural development. Therefore the economic development depends upon change in both the institutional environment and institutional arrangement. These are endogenous development processes and must co-evolve with each other and also in technical and infrastructural change and with wide and economic change understanding these is critical to the design and implementation of agricultural development policies.

### **METHODOLOGY**

The research was carried out in Chinamora district, North West of Harare. Chinamora district is one communal area where tomatoes and leaf vegetables are commercialised and it is close to Harare. The district is classified under natural region 2A. Rainfall patterns ranges between 950ml to 1150 ml. Temperature in winter minimum average 10°C and average maximum of 27°C. It is between 15 and 22° south latitude and 26 and 34° east longitude.

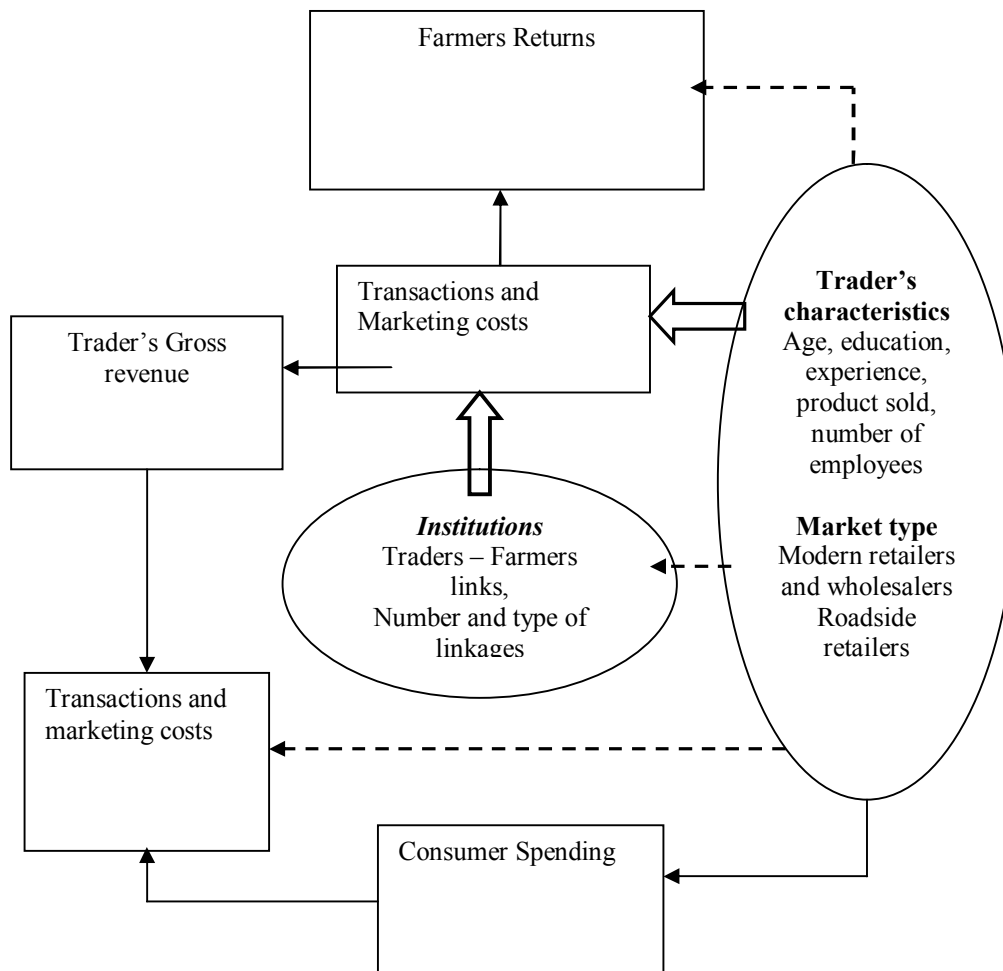
A survey of 120 smallholder farmers who grow tomatoes was carried out. A total of 120 communal tomato farmers were interviewed using structured household questionnaires. A two staged sampling procedure was used for sampling household which were interviewed, the first stage involved purposively choosing vegetable growing areas in the district and in the second stage households were stratified randomly selected based on lists of tomato growers which was provided by extension workers in the study areas. Therefore the survey sample was representative of the tomato communal growers in Chinamora district. Data was analysed using Institutional analysis and Development (IAD) conceptual framework. Descriptive Intermediate Performance (DIP) and Overall Performance (OP) analysis was used to compare performance of institutional arrangements in informal and formal markets.

### **Conceptual framework**

The study adopted the Institutional Analysis and Development (IAD) conceptual framework suggested by Dorward and Omamo in [5]. The framework is used to analyse nature of supply chain relationships between supply chain actors, and communal farmers. It enables one to analyze and explain the different strategic interactions between two parties (farmers and traders), given the set of expected asymmetries of information and transaction costs that they are facing.

Marketing decisions are affected by transaction costs, production resources and technology. These factors influence market participation. Production resources indirectly affect transaction costs. Transaction costs are influenced by institutions. Figure 1 shows factors that affect the communal farmers' decision to participate in an output market. (Arrows indicate direction of influence).

**Figure 1:** Conceptual framework: Factors that affect the communal farmers' decision to participate in an output market. Source: [9]



### Evaluating institutional performance

The cost of production and marketing depends significantly on the institutional arrangements. This section intends to compare effectiveness and efficiency of institutional arrangements in both formal and informal markets. This enables the establishment of the market that is more efficient than the other. The evaluation is in two stages, the intermediate institutional performance and the overall performance.

### Intermediate institutional performance

The costs that are used as intermediate performance criteria in comparing institutional arrangements are classified under production costs and provision costs. Production costs (are costs of creating outputs from a set of inputs) these are further divided into two main subsections viz. transformation costs and transaction costs. Transaction costs are further divided into coordination costs, information costs and strategic costs. The provision costs involve both transformation and transaction costs. The scores are entered for each market. The level of cost are shown by the L, M and H which represent low, medium and high respectively. Low is interpreted as desirable because it represents a judgement that the cost is comparatively low. By comparing the

two, it is possible to predict the relative advantages of the institutional arrangements used in informal and formal markets.

### Overall Institutional performance

The criteria used in this stage are economic efficiency, equity, redistribution, accountability, and adaptability. The numerical notation (1, 2 and 3) is used to represent performance evaluation on the criteria, where 1 represents the most desirable performance.

## RESULTS AND DISCUSSION

### Problems in vegetable marketing

The study indicates that most of the respondents (73%) were dissatisfied with the prevailing infrastructure in the Mbare Musika Market. Some of the reasons cited were high risk, poor accommodation and low prices as farmers experience a weak bargaining position vis-a-vis fly by night traders who have well organised networks and enough market information to make informed decisions. Other minor problems include the untidiness and lack of adequate space for displaying their produce. Table 1 shows the numerical summary of the identified problems.

**Table 1: Ranking marketing constraints in the informal market depending on severity**

Problem	Ranking marketing constraints according to severity									
	No		Low		Medium		High		Very high	
	Freq	%	freq	%	freq	%	freq	%	freq	%
Low prices							100	83.3	20	16.7
Transport cost					3	2.5	7	5.8	110	91.7
Transport availability			3	2.6	101	88.5	10	8.8		
Information	3	3.5	3	2.5	6	5.0	24	20	84	70.0
Market time	39	32.5			81	67.5				
Market fee	109	90.8	11	9.2						
Market space	2	1.7	71	62.3	30	26.3	9	7.9		
Accommodation										
Food	102	85	10	8.3	8	6.7				
Risk	5	4.2	9	7.5	10	8.3	81	67	15	12.5

### Market information

The availability of reliable market information is a catalyst in accessing high value markets and making informed decisions. This study explores the various sources of marketing information available for the farmers. About 93.02 % of the respondents in the informal market note that essential marketing information including prevailing prices, alternative marketing channels is sourced from friends and relatives. The reliability of the source of information could be questionable especially in a dynamic and recovering economy such as Zimbabwe. This varies with fly by night traders at Mbare Musika market who indicates to have up to date information from sources such as radios, TV, magazines, and national mass media papers. This information asymmetry negatively affects smallholder farmers resulting in them having a weak bargaining power as compared to unscrupulous middlemen who tend to benefit more than the farmers.

### Transport

The delivery of products to the markets is one of the main constraints to the farmers. The survey results show that farmers in the study area mainly rely on two modes of transportation to the market (ox-drawn carts and hired trucks). Private hired lorries are used by 30.5 % while 55.5 % depended on ox-drawn carts. About 14 % of respondents rely on passenger buses for transporting their produce to the urban market (Mbare Musika). This scenario is attributed to poor infrastructural development in terms of roads and telephone networks in areas where the farms are situated. Furthermore, smallholder farmers appear to be getting second preference to their commercially producing counter parts when it comes to support regimes (including transportation) by various stakeholders. With transportation costs being a significant component

of the farmers' expenses, it compromises their profit margins. However farmers can embrace approaches such as contract farming and cooperatives to spread the transportation costs. This is supported by researches done in the Honduras where profit margins for farmers in cooperatives were found to be higher as compared to those individually marketing their produce.

### **Storage facilities**

The study reveals that almost all informal market participants (93.3 %) rely on traditional storage systems. The respondents highlighted that they spread tomatoes in cool rooms. The method is perceived as ineffective since the room temperature is not artificially controlled. This scenario would lead to a significant proportion of farmers (66.5 %), hurriedly selling their produce for fear of losses due to the perishability of the products regardless of the prevailing prices. This can be attributable to the low investment potential of farmers in to construction of state of the art storage facilities which could enable them to capitalise on market window opportunities. The ability of farmers to do this would mean higher returns from tomato. Success stories have been observed in South Africa [6] where communal farmers have borrowed funds from lending institutions and invested in storage facilities. The farmers have also been able to integrate both horizontally and vertically thus improving marketing margins.

### **Intermediate institutional performance**

#### **Transformation costs**

Transformation costs are higher for informal market than formal market. This can be explained since each family unit makes personal decisions on how much and how to transport their tomatoes. Farmers who supply the informal market spend most of their time looking for transport on the road. This is characteristic of communal farmers who are resource constrained and less innovative in devising solutions to universally faced problems. In addition to long hours looking for transport, they spend time negotiating with transporters for transportation charges. The limitation of negotiation skills greatly compromises the win-win desired output of the deliberations as the farmers are less knowledgeable about issues such as cost per kilometre and fixed charges when hiring transport. The process consumes a lot of time which could have been used for production purposes. This is so because the farming communities depend much on household labour. On the other hand, the collection system used in the formal market serves time as the process is well coordinated. For example supermarkets inform the farmers about produce collection time. This is in agreement with studies carried out which show that contracted farmers are well off than non contracted farmers especially for perishable products [6].

#### **Transaction costs**

Coordination costs are high in the informal market because of high numbers of traders with whom farmers would need to interact. Obtaining market information is very costly since farmers get it from friends and relatives. The social networks are not well defined which results in low level of accountability in communication. Furthermore each farmer does not meet with traders repeatedly. The missing element in the social networks is trust. A predisposition to trust is required to achieve the cooperative equilibrium. Individuals involved in the informal market lack access to accurate time and place information that could be the reason why prices keep fluctuating on the market as a result of shortages and oversupply. The study has shown that without an intermediate organisation on the provision side, farmers may not have access to information. Efforts have been made to this end in some parts of the globe to reduce the information barrier by introducing a third part who monitors market proceedings and transmits information on market behaviour among farmers. This is because observations have been that something more than informal enforcement mechanisms are required to foster better relations within and among farmers, collective action and cooperation. However, in the formal market, coordination costs are low. This is possibly because the number of producers has been reduced since only 5 respondents are supplying to the local supermarkets such as Denenga supermarket. These farmers get most of market information from this supermarket which is market relevant. This approach to marketing has been observed to reduce coordination costs since a specific niche market is consistently served [7].

#### **Strategic costs**

Free riding is a dominant problem in the informal market as shown in Table 2. This manifests itself when some innovative farmers may negotiate for better prices and others will charge same price without participating in discussion. The conservative nature of communal farmers has greatly



triggered the problem as they are always willing to accept prices as determined by the traders. Lack of training especially on budgeting and record keeping has also greatly compromised the ability of farmers to negotiate for viable prices because they would not have done any budgeting to determine the break even prices and the profit margin to factor in. Observations have also been that communal farmers are scared to face their potential buyers and deliberate on reasonable prices mainly because they feel they will lose the buyers in the only market they have access to. Corruption is not a problem in the informal market mainly because there are no benefits associated with the act. However, the issue characterises the formal market. In this study, 32 % of respondents encountered extortion demands in order to be contracted with certain supermarkets. This is so mainly because the potential contractors are aware of the problems faced by farmers in marketing their produce and want to benefit from the system. To this end, the problem of corruption has limited farmers' access to formal markets thus confining them to the vicious cycle of poverty.

The informal market is risky in the sight of farmers because they can easily lose their produce and other valuable assets to thieves. In most developing economies, even though the informal sector offers livelihood options in the wake of reduced government fiscal expenditures and rising unemployment levels, little has been done to support the sector. Infrastructural development projects have evaded the sector and this has greatly enhanced the risks associated with participating in the informal markets. Compounding this is the distances to these markets where farmers have to sleep in the open (in most cases) thus further exposing them to the harshness of crime perpetrators. Notably in most areas of Southern Africa, these market places have been the hive of criminal activity. The enforcement of formal law against unruly behaviour in these market places and surrounding communities is low due to high corruption among law enforcement officers. This has also been attributable to unstable macroeconomic environments due to the recent global recession which has led to the dwindling of the real disposable incomes of many citizens.

The transformation costs generated by both markets are high because each farmer is responsible for sourcing inputs such as agro-chemicals, fertilisers and seed. Smallholder farmers, with their poor management skills always wait for the last minute acquisition of inputs and as such, with the high demand for the inputs, the farmers are always faced with the problem of input shortage. The study shows that contractors provide market information about quantity and stage of ripeness required. This is at least favourable for the contracted farmers since they could produce with a guaranteed market, thus reducing the risks associated with informal markets. By virtue of the market characteristics, coordination is higher in formal market than informal market mainly because of well defined channels of communication between farmers and supermarkets.

**Table 2:** Intermediate Performance Evaluation: Comparative performance of Institutional Arrangements related to the provision and production of tomatoes.

<b>Intermediate performance criteria (Provision)</b>	<b>Informal</b>	<b>Formal</b>
Transportation costs	H	H
Transaction costs:		
Coordination costs	H	L
Information	H	L
Time and Space	H	L
Strategic costs:		
Free riding	H	L
Corruption	L	H
<b>Intermediate performance criteria (Production)</b>		
Transformation costs	H	H
Transaction costs:		
Coordination costs	H	L
Information costs	H	M
Time and space	H	M
Strategic costs:		
Free riding	L	L
Corruption	L	L

Key: L= low, M= medium, H= high (L is most desirable)

### Overall Institutional performance

Each family is completely responsible for its own provision and production of tomato crops, whether it wants to undertake a task itself or hire someone. The rules underlying such a market are relatively simple. All players are permitted to buy or sell at their own initiative. The problems from informal are contractual uncertainty, risk and information asymmetries. There is a lot of opportunistic behaviour in the informal market than in the formal market. Opportunists are taking advantage of information asymmetries to exploit farmers. The formal market provides greater accountability because safeguards against opportunistic behaviour are built into the institutional arrangements as every activity is written down. Smallholder farmers who pay the costs are not the primary beneficiaries of the investment since there is a lot of redistribution occurring in the informal market as a result of free riding. There is a lot of accountability in the provision and production transactions in the formal market but less adaptability. Accountability is high possibly because players maintain records of labour, other member contributions and monetary expenditures. Adaptability is low possibly because the procurement system of supermarkets is centralised and it takes long period to revise their prices.

The total benefits accrued from the informal market is likely to be lower than in the formal market because many potentially beneficial transactions would not be completed without the help of the counteracting institutions of formal market. Thus, the formal market is likely to be more efficient from farmer's perspective (providing greater benefits and lower costs). Farmers are not supplying to the formal market because supermarkets are not accessible. A research is needed to unveil the reason for absence of supermarkets in the formal vegetable market.

**Table 3: Overall Institutional Performance**

Overall performance criteria	Informal	Formal
Efficiency	3	2
Fiscal equivalence	2	1
Redistribution	3	2
Accountability	3	1
Adaptability	1	3

Key: 1=high, 2= medium, 3= low ( 1 is most desirable)

### CONCLUSIONS

Farmers in communal set ups face a number of constraints especially in horticultural production. Market information asymmetry, poor storage facilities and transport were identified to be the main marketing problems experienced by farmers in Chinamora. Even though farmers are free to participate in a market of their choice, mainly depending on accessibility and knowledge of the market, from this study, overall, the formal marketing approach performed better than the informal counterpart.

### REFERENCES

1. Dorward, A., Kydd, J and Poulton, C (1998). Smallholder Cash Crop Production Under Market Liberalisation: A New Institutional Economics Perspective. CAB International, Wallingford, UK.
2. Eicher and Rukuni, (2007). Zimbabwe's Agricultural Revolution Revisited, University of Zimbabwe Publications, Harare.
3. Heinemann, E. (2002). The Role and Limitations of Producer Associations. European Forum for Rural Development Cooperation. 4 September, Montpellier.
4. Killick, T., Kydd, J and Poulton, C (2000). Agricultural Liberalisation, Commercialisation and The Market Access Problem in The Rural Poor and the Wider Economy: The Problem of Market Access. IFAD.
5. Kirsten, J. and Vink, N. (2005). The Economics of Institutions: Theory and Applications to African Agriculture.
6. Louw, A., Chikazunga, D, Jordaan, D and Biénabe, E, (2007). Restructuring food markets in South Africa: Dynamics within the context of the tomato subsector, University of Pretoria.
7. Ricardo H, Reardon T, Berdegué J, (2007), Supermarkets, wholesalers, and tomato growers in Guatemala Department of Agricultural Economics, Michigan State University, East Lansing, Michigan 48824, USA
8. Slangen, L.H.G. (2000). Framework for analysing Institutional of Sustainability. Wageningen: Wageningen University.

9. Temu, A. A. (2007). Department of Agricultural Economics and Agribusiness, Sokoine University of Agriculture, Morogoro, Tanzania.
10. Wessel, L., Victoria, O. (2003). Inefficiency of institutional arrangements in international wheat trade: A preliminary investigation of Eastern Europe and South Africa: Annual Conference of Agricultural Economics Association: South Africa, Pretoria.