

## **Chapter-5**

# **Value Chain Communication and the Global Market**

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Agricultural markets in developing countries have often failed for smallholder farmers, where both macroeconomic and trade policy tools appear less useful in including market participation by poor small holders. Some important factors attributed to this include: i) poor access to market information or information asymmetry, ii) lack of access to productive technologies, and iii) poor access to public and private goods. Consequently, majority of small holder farmers sell their produce in poorly-paying local markets or at the farm gate rather than travel to distant better-paying market. The commercialization of agriculture and subsequent structural complexity it has induced in the food system has meant that poor farmers face higher transaction costs to access competitive markets (Pingali, 2006). The lack of effective engagement translates into the inability of farmers to utilize market information in their livelihood decisions. These suboptimal decisions in turn restrict the possibility of farmers to leverage their produce or commodities to improve and sustain their incomes, by engaging, for instance, in financial instruments such as forward contracts. The inability to enter into such contracts precludes them from access to crop insurance and working capital loans using their produce as collateral (e.g. a forward contract or commodity backed financing using warehouse receipts).

Providing access to accurate and timely market price information without physically visiting markets is the first step in reducing the transaction costs and allowing farmers to engage effectively in agricultural markets. Provision of market price information in a timely manner reduce information asymmetry, which in turns allows farmers to reduce their transaction costs while also increasing their bargaining power in market transactions (Ratnadiwakara et. al., 2008). A crucial benefit of having access to market price information (especially forward and/or future prices ) is that it gives farmers more control over their crop planting and harvesting schedules which they can optimize so as to align their agricultural outputs to meet the demand in local and external markets. This in turn would help facilitate a more stable revenue stream from their produce.

Information and Communication Technologies (ICTs) can play an important role in bridging the information deficiencies and can provide access to markets. From pure market price dissemination to more sophisticated systems that link farmers to output markets, ICTs can play an important developmental role. Its potential as a poverty alleviation too, has been recognized and countless examples exist in the developing world of initiatives to improve farmers' livelihoods via ICT driven linkages to markets.

However, assessing the potential of ICTs to positively impact overall rural livelihoods requires a more nuanced understanding of such livelihoods. Of late, the developmental literature on poverty alleviation strategies advocates the need for a more systematic analysis of the factors that affect rural livelihoods. For example the rise of the sustainable approach in the late 90s coincides with this recognition of the need for a holistic framework for poverty focused development, centered on people—their needs, capabilities, adaptability, vulnerabilities, diversity and their relationship to the social, legal and

institutional environments in which they live (Cskai and Haan, 2003). In this context, effective engagement in agricultural markets requires the confluence of a variety of factors (inter alia laws/policies as well as inclusion of multiple actors). ICTs then facilitate this confluence, by facilitating the flow of information (critical to the sustainable livelihoods). However, the choice of technology (both processes as well as infrastructure) is dependent on context, i.e. aligning demand-driven factors such as awareness and user choice/ability with respect to technology and existing technology infrastructure with what is the most technologically appropriate solution.

### **Role of ICTs in agricultural markets**

Agricultural marketing process in the developing world tends to suffer from information asymmetry and high transaction costs, especially information search costs. Studies (Batchelor,2002) have already established that rural communities have a high demand for market information and specially commodity price information. Amongst rural communities information plays an analytical as well as functional role both in the short as well as long term and should be considered as part of a dynamic process of change (access, assessment, application and action) rather than just a static resource. Such dynamic information should be actionable at different levels (micro/meso/macro) and should serve to foster interaction between different levels of activity (i.e. linking structures and processes). ICTs can facilitate the generation of information required by the rural poor to make better informed decisions that affect their livelihood strategies and ultimately their livelihoods. Hence systems that provide information and communication to the rural poor to improve their livelihood strategies must be linked to institutions and external stakeholders that may affect the livelihood of the rural poor. In addition such systems must be

enabled to address the specific needs of the rural poor i.e. be demand driven.

In developing countries, farmers generally do not have access to information on the value of their crops and depend on intermediaries to facilitate the selling of their produce at markets. Lack of market price information for farmers create information asymmetries that reduce their bargaining power especially with middlemen who facilitate the sales. This leads to lower price of their produce. Having access to actionable information i.e. timely and accurate market price information, can allow farmers to make relevant and timely livelihood decisions throughout the entire agricultural value chain process.

In South Asia, numerous ICT interventions intended to reduce information asymmetries and subsequently provide alternate markets and exchange for farmers exist. The media used to deliver such services vary from internet (Aquachoupal, e-choupal, e-krishi etc.) to radio to mobile (GGS, Agriwatch, Warna Unwired, e-Krishi). Amongst these, India's e-Choupal initiative by ITC in 2000 was one of the first and most well known .E-Choupal has facilitated the generation of more stable incomes by allowing farmers to improve their decision making ability on optimal harvesting time for their produce. Dissemination of market price information via e-Choupal initiative improved the efficiency of rural markets by increasing competitiveness of buyers. The reduction in transaction costs meant prices received by farmers were higher. Furthermore the reduction in intra and inter market price volatility has given farmers a more stable income stream with positive livelihood benefits.

### **Additional constraints to better market engagement**

Facilitation of market price information (be it of agricultural inputs or outputs) have realized direct livelihood impacts (Molina, 2006), however

ICTs are not the sole driver condition for better engagement in agricultural markets. It is incorrect to assume that purely linking farmers to markets with better communication access would bring about transformational changes. The ground realities are such that small farmers require mechanisms to address a variety of constraints—lack of credit and crop insurance, geographic and transportation limitations, lack of knowledge on agricultural techniques and limited access to extension services. Even when farmers have access to marketing information services, small and marginal farmers often lack experience in knowing how to leverage such services and face a steep learning curve, but over the passage of time learn to leverage such information. A recent study of small farmers in India suggests that small farmers are aware of the mechanisms through which they may leverage the information, but face considerable constraints in being able to do so. For example even if farmers have access to timely and accurate market price information, the lack of suitable storage and financing against those stored crops (using for example warehouse receipts) exposes them to lower market prices after harvest when the supply is high (a fact which is used by commission agents and middlemen to their own advantage since they are more likely to have access to such facilities)

In the developing world, farmers depend on middlemen for credit and the conditions are often unfavourable for small farmers and restrict (formally and/or informally) who they can sell their produce to and the price at which it is sold. These unfavourable financial relationships mean that small farmers cannot raise enough credit for higher quality inputs which in turn leads to lower crop yields of poorer quality and thus lower profits. This suggests that effective engagement in agricultural markets require the confluence of a variety of stakeholders and institutions that in turn provide information/communication, supply

chain logistics, crop loans and insurance. The convergence of these actors into a more integrated system, with ICTs facilitating the linkages will decrease transaction costs and reduce divergence from the “law of one price”, thus making agricultural markets more efficient. These efficiencies then help materialize more sustainable livelihoods for the agricultural poor.

### **Rural access to market price information in India**

India’s rural population accounts for 72% of its total population. In fact India has one of the largest rural populations in the world engaged in agriculture – with 124.7 million being classified as cultivators and further 102.4 million employed purely as agricultural labourers. The average operational land holding of Indian farmers is only 4.94 acres. In the traditional marketing system, the price setters are generally the commission agents and traders who function in the regulated markets and on whom most small farmers are dependent on for credit. This results in a large difference between farm-gate prices and end consumer prices of agricultural commodities with small farmers only receiving a small portion of the final consumer price. The majority of the wholesale markets are poorly designed and limited to non-existent infrastructure and processes for packing, grading, sorting and cold storage. Traditionally most farmers, especially small to marginal farmers are dependent on personal contacts in the market and in their villages for market price information. The use of brokers and collectors for market prices has been highlighted in an increasing volume of literature. A situational assessment survey of farmers in India (NSSO,2005) revealed that “other progressive farmers” was the main source of agricultural information for farmers (16.7%). Input dealers, traditional media, and extension were all less important. The

information from such source is often inefficient both in terms of reliability as well as timeliness and is perceived as such by farmers.

### **Value chain promotion in agricultural development**

Value chain promotion is an effective way of fostering rural-urban linkages. Firstly, the concept provides a useful analytical framework for market and sub-sector analysis. Value chains describe productive processes around a product from the provision of inputs to production, transportation, transformation, processing, marketing, trading, and retailing to final consumption. Since production only translates into income once final consumers really demand and buy goods, the value chain approach encourages looking at the production process from the consumer's end.

Secondly, the metaphor of the chain emphasizes the fact that most goods are produced by a sequence of interlinked actors and activities. The approach focuses on the analysis of the institutional arrangements that link the various economic players, which are; trust, vertical and horizontal integration and organization, and contracts.

Thirdly, it highlights the importance of private sector development. For the purpose of fostering agricultural growth and aligning the agricultural sector development with urban and other trends in society, it provides a fairly holistic framework, which can encompass a number of different development activities.

The starting point for value chain analysis is usually a participatory chain mapping workshop, in which representatives from all groups involved in the process develop a joint understanding of the respective chain. This exercise reveals strengths and weaknesses of the value chain and serves as a starting point for mutual trust-building. Discussions evolving around input quality, logistic arrangements or product standards often help producers to understand the real demand

for their raw-product. Listening to processors and consumers can be an eye-opener for producers and traders when it comes to consumers' needs, the right quality, and the right quantities at the right time in the right place.

Analyzing the chain jointly can demystify a number of negative perceptions, such as “middlemen exploit us”, or “farmers always break the contracts.” Pointing out the weaknesses in the chain can help shaping the roles of public and private institutions to improve chain efficiency and to gain competitiveness. In the case of internationally traded products, for example, fresh fruit and vegetables, following the value chain is the only way to fully depict the complex chain linkages, flows of resources, knowledge and logistics.

### **Opportunities for closer rural-urban linkages**

Structural transformation of rural agricultural based economies into more urbanized economies opens up new market opportunities to rural producers, their trading and processing partners in the value chain – provided they succeed in linking up rural production with urban markets and ensure that economic benefits (e.g. employment generation) are geared to both, urban and rural areas. The analysis of the potato value chain in West Bengal revealed investment opportunities for urban processors and growing markets for rural producers. Producers need to explore forward market integration in order to seize these opportunities; e.g. by forming marketing groups, by trading themselves or by cooperating more with the processing and trading industry. Finally, value chain promotion challenges the delivery of public and private services, from agricultural extension to business development services for small and medium enterprises in urban agglomerations. The public sector needs to provide a business enabling environment for the private sector to perform efficiently. This requires



not only a change of attitude, but also massive public investment in rural marketing infrastructure—by resources reallocations from urban to rural areas.

### **Perspectives for the future**

The growth and penetration of mobile ICTs in rural areas (especially mobile phones), and innovations in electronic media to support education and training (e-learning), represent new opportunities to increase the development of human and social capital, among other aspects. Mobile ICTs can contribute to the strengthening of relations between stakeholders in the value chain; it is possible to promote the “culture” of the use of ICTs through ‘e-learning’, as well as the development of information skills of different stakeholders in chains. The impact that ICTs have in improving competitiveness of food chains is very promising. Issues such as traceability, process control, transparency in market information, reducing transaction costs, and identification and tracking of consumer needs, are only a few examples that illustrate its importance.

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