

Operation and results of a vegetable market information and consultation system in Vietnam

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Abstract

This report presents the operation and results of a vegetable market information and consultation system (MICS), set up between 2002 and 2005 in Hanoi, to address marketing problems faced by vegetable farmers. A MICS is a market information system (MIS) combined with debates organised among farmers, traders, and development agents to reach common visions and strategies on marketing. Information collected in the first years relating to indicators of origin and supply deficits was disseminated to farmers and extension agents through newsletters and consultation meetings. The process then focused on making daily prices available, as requested by the farmers. The system was based on a network of contact traders and dissemination was by television. The workshops made it possible to reach a consensus for market opportunities arising from periods of supply deficit for some vegetables and how to take advantage of this situation, especially for tomatoes and cabbage imported from China during the rainy season, which presented some quality differences compared to the local products. With regards to price information, the majority of farmers and traders, surveyed by a quick-impact appraisal, stated they had access through television on a regular basis and that they used price information mostly to bargain with traders. Back up for a permanent “safe” vegetable producer and trader association was one of the outputs of the MICS. Our experience shows that price dissemination was easier to sustain (with the involvement of the public sector) than the consultation workshops, generally due to low local capacity in terms of meeting facilitation and the present weakness of extension services and sector organisations.

Key words: information systems; market; participation; vegetables; Viet Nam.

Subjects: processing, marketing; tools and methods.

Résumé

Fonctionnement et résultats d'un système d'information et de concertation sur les marchés de légumes au Vietnam

L'article présente le fonctionnement et les résultats d'un système d'information et de concertation sur les marchés de légumes (MICS) établi entre 2002 et 2005 à Hanoi afin de répondre aux contraintes de mise en marché exprimées par les producteurs de légumes. Le MICS est défini comme un système d'information de marché (SIM) combiné à l'organisation de débats entre producteurs, commerçants et agents de développement afin d'obtenir des diagnostics et des stratégies partagés sur la mise en marché. L'information collectée dans les premières années a porté sur des indicateurs d'origine et de déficit de l'offre, et a été transmise aux producteurs et agents de vulgarisation par des bulletins et des ateliers de concertation. Puis, elle s'est centrée sur les prix journaliers, suite à la demande des producteurs. Le système se base sur un réseau de commerçants-contacts et la diffusion par la télévision. Les ateliers ont permis d'atteindre un consensus sur les opportunités commerciales représentées par les périodes de déficit de certains légumes, et les moyens d'en bénéficier, surtout pour la tomate et le chou, importés de Chine en saison des pluies, et dont les caractéristiques de qualité diffèrent des produits locaux. La majorité des producteurs et des commerçants, enquêtés par une rapide étude d'impact, a déclaré avoir accès aux prix des légumes à la télévision de façon régulière, et les utiliser pour la

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négociation avec les acheteurs. Le renforcement d'une association permanente de producteurs et commerçants de légumes « sains » a été un résultat du MICS. Notre expérience montre que la diffusion des prix a été plus facile à pérenniser, avec l'implication des services publics, que les ateliers de concertation. Cela est dû notamment à la faible capacité locale en termes d'animation de réunions, ainsi qu'à la faiblesse des services de vulgarisation et des organisations professionnelles.

Mots clés : légume ; marché ; participation ; systèmes d'information ; Viet Nam.

Thèmes : méthodes et outils ; transformation, commercialisation.

Introduction

Background

In the last 10 years, food markets in Asia have undergone profound changes, in particular in the Mekong region. Markets were liberalised after decades of planned economies, while the public sector pursued sound macroeconomic policies (Stiglitz and Yusuf, 2001). In Vietnam, this took place in 1988 and is termed the “doi moi” (change and renewal). Urban growth in the region is following a steady path and is accelerating market exchanges. In 2005, the urbanisation rate was 26.4% in Vietnam (27.4% in Laos and 32.3% in Thailand) and the urban growth rate stood at 3.13% (6.02% in Laos and 1.49% in Thailand) (WUP, 2009). Finally, the economy is growing at a remarkable rate; the GDP growth rate was 8.5% in 2007 (7.5% for Laos and 4.8% for Thailand). Market segmentation is observed according to the income categories, with a rising demand for specific quality as income increases.

This economic context provides farmers with enhanced market opportunities. Yet, food markets are characterised by their instability in terms of quantity, price, and quality. Despite the short distance to urban markets, marketing has actually been reported as the first constraint faced by vegetable farmers around Hanoi (Mai *et al.*, 2004). Another issue is the distrust of consumers in terms of vegetable safety. Food safety is of primary importance for vegetables, fruit and meat, together with the freshness of these products (Figuié *et al.*, 2004).

Literature review

Market information systems (MISs) are often considered a means to allow a

better adjustment between supply and demand and to enhance the farmer's bargaining power in the face of traders. MISs can be defined as systems of regular collection, analysis, and dissemination of information relevant to public and private decision-making in marketing. The value of MISs was strengthened after the liberalisation policies in the 1980s, as the movement away from state-sponsored marketing was accompanied by a recognition of the need for government support to promote the creation of a competitive market (Shepherd, 1997). Market information is indeed a public good. It is difficult to exclude people from the use of market information, which makes it unprofitable for private businesses to invest in. Market information is also characterised by asymmetry and is more available for some users, in particular, traders, relative to farmers (Galtier and Egg, 1998). These characteristics make public sector investment in MISs legitimate. Yet, the record of MISs around the world has not been very satisfactory overall. Of 120 countries, only 53 had functioning market information services in 1997 and only five had demonstrated a measure of usefulness (Shepherd, 1997). MISs are of little use when actors face other more limiting market constraints other than information, such as transportation and credit technologies. Information on better prices in a more distant market is of little use to farmers who cannot move to this market. Besides, stakeholders commonly have their own channels of information through personal relationships (Jones, 1972). Finally, data commonly lack accuracy and timeliness. On the one hand, collection and dissemination are weekly or monthly processes, while prices fluctuate daily. On the other hand, the quality of produce for which

prices are collected is highly variable (Shepherd, 1997).

To overcome these constraints, it is recommended to better adapt MISs to the needs of the end users, which is helped when end users are brought together to define the objectives, the method of data collection, and communication, with a subsequent discussion of the results (Galtier and Egg, 2003). The discussion of results relative to marketing opportunities and constraints makes it possible to develop solutions to constraints other than simply information, including technology, access to inputs, and transportation. Based on prior experience with vegetable markets gained in Congo-Brazzaville (Moustier, 1999), we define “market information and consultation systems” (MICSs) as MISs combined with the debates organised among farmers, traders, and development agents in order to reach common visions and strategies on marketing. The success of the stakeholder consultation depends on reaching a shared appraisal as a first step and shared objectives for an action plan as a second step, with an adequate representation of the many different stakeholders (Thoyer, 2005).

Method for the vegetable market information and consultation systems in Hanoi

The vegetable MICS was developed by the project SUSPER (project for the Sustainable Development of Peri-urban Agriculture in Southeast Asia),

funded by the French Ministry of Foreign Affairs. MISs developed in the SUSPER project were aimed at focusing on two types of objectives:

- medium-term planning of farmers and development agents (highlighting targeted crops), markets, and time periods, to identify untapped opportunities reflected in variations of origin, quantity, and prices according to time periods, as well as the supply and demand for certain quality characteristics by purchasers, and more generally, strategies to improve the competitiveness of local chains relative to imports. This was the project focus for the first two years (2002-2004);

- short-term decisions, made mostly by farmers, in terms of price bargaining and choice of final markets. This was started in 2004 and is still ongoing. For medium-term planning, quantitative information collected related mostly to indicators of supply deficits or excess: origin, quantity, and price (wholesale and retail) at different times of the year. Qualitative information was also gathered on the organisation of marketing chains, as well as on the quality characteristics and demand at different stages. The quantitative data was gathered in the city's six wholesale (night) markets (spontaneous and planned). The data search also included a sample of five retail markets representative of customer diversity. Because of the high number of vegetable types (more than 40) and their variability throughout the year,

we focused on the types which accounted for 80% of transactions, which covered 8 to 16 vegetables depending on when the survey was made, with at least three “regular” vegetables (tomatoes, cabbage and water convolvulus). The surveys were made at times of supply variation: January, March, June and September. A representative sample of traders was interviewed by randomly walking through the markets and stopping to interview every fifth trader. A total of 1,369 traders were interviewed in 2002, and 1,877 in 2003, with 180 to 350 traders surveyed in each survey. Each interview lasted between 10 and 15 minutes and comprised quick questions with easy-to-code answers, e.g.: “*Where do you buy your vegetables? Where are they produced? What is your sale price?*” With regards to qualitative data, in-depth interviews of suppliers and purchasers in the same chain were carried out. They involved questions on relationships between vendors and purchasers, including exchange of information, commitments, terms and conditions of payment, criteria of choice of commodities, and ways to control quality. A total of 25 producers, 15 collectors and seven retailers were the subject of these interviews, which lasted around 45 minutes in 2003. A survey on the perception by consumers on vegetable quality was also conducted on a representative sample of 200 households in the same year.

Information on the status of the vegetable market was summarised in the form of six market newsletters; five dealing with variations in the supply in terms of price, quantities, and origin, and one with quality management. These bulletins were distributed to persons in charge of cooperatives located on the four project sites, posted on websites (including that of the Ministry of Agriculture and Rural Development) and sent to a list of 30 research and development partners.

The information gathered on market opportunities was presented and debated at stakeholder workshops, which brought together a panel of farmers, traders, and development agents, over half a day: 2 in Hanoi and 4 at production sites; 3 dealt with market seasonality and 2 with demand for quality (table 1). First, researchers presented the results of the market surveys. Then, a debate was organised on:

- whether the participants agreed with the appraisal of the researchers regarding identified market opportunities;
- the strategy to take advantage of them.

Finally, a survey was made on the need expressed by the participants for new market information. These surveys led to the establishment of the daily price information system in Hanoi. Three contact traders were selected in different locations of the market to serve as price informants; they supplied information daily on the

Table 1. Participants in consultation workshops.

Tableau 1. Participants aux ateliers de concertation.

Place	Date	Topic	Nature of participants
Hanoi	18/04/2003	Market seasonality	7 producers, 2 wholesalers, 7 extension agents, 27 extension and research agents
4 peri-urban villages	June 2003	Market seasonality	15 to 20 farmers/village, 0 to 4 collectors, 3 researchers
Hanoi	17/06/2003	Quality	6 co-op leaders, 4 collectors, 3 retailers, 2 consumer association representatives, 3 journalists, 3 extension agents, 10 researchers
1 peri-urban village	20/10/2003	Quality	64 farmers, 5 officials, 1 collector, 2 retailers, 10 researchers and development agents

resale price of 10 vegetables (those requested by farmers during the meetings) by telephone to the interviewer and noted this information in a daily monitoring book. Prices were collected in the three main wholesale markets and in three retail markets. Price information was checked every week by investigators. We also established a grading system to collect prices on produce of average quality based on observations and interviews with traders to assess the quality criteria affecting the final prices.

The system of price dissemination required collaboration between the research institute on fruits and vegetables in charge of price collection, the information centre of the Ministry of Agriculture in charge of price dissemination on television and the website, and the Hanoi Department of Agriculture in charge of direct transfer to the project sites by fax and impact assessment. A survey on the impact of the price information system was conducted in March 2006 and included 100 stakeholders in the market chain (84 farmers, 5 wholesalers and 11 collectors). The questions related to access to price information and the circumstances under which such information was used. The interview lasted around 30 minutes.

Results

Shared vision on market opportunities

The workshops made it possible to reach a consensus regarding market opportunities created by periods of supply deficits of some vegetables. For temperate vegetables, such as tomatoes and cabbage, there is a period of about four months for the Hanoi region (July to October) when local production ceases to be available. At this time, vegetables are imported from China and prices increase considerably, as much as 10 times, due to the local production shortage and the cost of transporting imported products (Moustier *et al.*, 2004). The outcome of the workshops was also a shared vision, along the way, to take advantage of these market opportunities. Producers could raise their market share by increasing their off-season

production of tomatoes during periods of shortage. This required applying off-season production techniques, including the use of grafted tomatoes and varieties of tomatoes resistant to bacterial wilt. In connection with this recommendation, training sessions were organised by the research institutes. Moreover, a private seed company undertook, with some success, the production of grafted tomato seedlings. Another market opportunity identified relates to quality characteristics. Produce from Vietnam is reputed to be safer than produce from China, but neither the origin nor the production and control process are shown on a label. On the other hand, some Chinese produce is more popular than local produce due to some physical characteristics. This is the case for cabbage since consumers prefer cabbages with smaller heads. To grasp these market opportunities, there was a consensus in the workshops on the need for farmer groups to adequately label the origin of the product and also improve the produce safety control by combining internal control with the external control provided by registered control and certification bodies. Farmers and extension workers furthermore agreed that cabbage should be harvested at an earlier stage to meet the preference for smaller size.

Similar vegetable MICs were organized in Laos and Cambodia with the planning departments of the Ministry of Agriculture. These yielded similar results with regards to the seasonal supply deficiencies of local produce, in particular tomatoes, causing marketers to import from Thailand to Laos and from Vietnam to Cambodia. In all cases, local produce was more popular in terms of vegetable safety than imported produce, but the appearance of imported produce was preferred. This provided recommendations for extension workers and farmers.

Use of daily price information

The demand for information on daily vegetable wholesale and retail prices was mentioned most often by farmers and traders in the stakeholder workshops because it could be useful to target periods of high prices in terms

of cultivation and harvest, and allow better negotiation with traders. The preferred means of dissemination by farmers is television in Vietnam (while it is radio in Cambodia and Laos). The vegetable trade is characterised by a combination of spot, small-scale, occasional interactions and regular relationships, but without rigid commitments in terms of priority sales, volume or pricing, thus, the amount of leeway for the use of market information in negotiating with traders and the choice of markets is quite high.

The impact survey demonstrated that a majority (74%) of farmers and traders had access to vegetable price information through television. They watched the television program on prices everyday (62%) or several times a week (25%). The price information was used for marketing decisions, especially for bargaining with their buyers, as well as for crop planning purposes. Seventy percent of farmers mentioned an increase in price obtained from farmers, but the amount could not be assessed. Sixty-five percent of farmers stated that the MIS reduced the time spent in transportation as they adapted the frequency of visits of the wholesale markets to price changes. Actors not using vegetable price data were usually those with small farm size (less than 700 m²) and who had a standing relationship with their buyers.

In 2006, the daily price information system was transferred to the information centre of the Ministry of Agriculture. Training on the methodology for price collection and dissemination was given by the staff of the fruit and vegetable research institute. It is difficult to obtain information on how the system is running at present. It is likely that the system is now funded by the Asian Development Bank through extension projects. The price data is still disseminated by television and on the website to a list of subscribers.

Toward an alliance of safe vegetable enterprises

One output of the Hanoi MICs was to strengthen the alliance of safe vegetable production and distribution enterprises. This alliance was established in December 2008 by Hanoi municipality in response to problems of mismatch

between production and consumption; traders typically complain that they lack reliable suppliers in terms of safety and diversity, while farmers who trained to produce safe vegetables (mostly based on Integrated Pest Management) lack customers willing to pay premium prices. A cooperation arrangement was put in place between our research group and the alliance to develop marketing activities. Initially, an inventory of safe vegetable enterprises, including cooperatives and private companies, was carried out and published. Three consultation meetings were organised to discuss issues of common concern for the alliance (table 2), especially in terms of crop planning in relation to the market demand. A website was established to facilitate contacts and cooperation between production units, as well as between production and distribution units. The website, however, is managed only sporadically, as the alliance lacks the technical and financial capacity to run the website and hold meetings.

Difficulties with consultation meetings

Some difficulties in running consultation meetings need to be mentioned. First, it is difficult to encourage Vietnamese farmers and traders to express themselves spontaneously regarding their problems. This is further complicated by the lack of local capacity for workshop facilitation. Second, it is difficult to obtain a good representation of traders because of

their busy schedules. Third, climatic vagaries jeopardize efforts to implement crop planning. In October 2008, floods destroyed more than half of the crops. Finally, there is a problem of outreach beyond the workshop participants. This is due to weak extension services as well as to the fragmentation of produce, which impedes cooperation between farmers.

Conclusion

The vegetable MICS developed in Hanoi is innovative in the sense that it combines information dissemination with a process of stakeholders' consultation. It can be termed a second-generation MIS since its operation is more decentralised than the traditional MIS, with reliance on a network of contact traders and a link with an alliance of private stakeholders. Another innovative feature is the speed of transfer of information to stakeholders (taking one day), as a result of telephone use by contact traders and dissemination by television. Yet, the systems make little use of new information technologies, apart from the Internet, which public institutes use between themselves but which are seldom used by farmers. In northern Vietnam, vegetable farmers and traders make little use of mobile phones, mostly due to cost issues, although this situation may change in the near future. In Cambodia, a Canadian funded project (Cambodia Agricultural Market Information System [CAMIS]) established an SMS cell phone system

which enables farmers to find out the prices of their commodities before going to market and to determine which markets offer the best rates (CAMIS, 2010). Using their cell phones, they can also interact directly with selected traders who post their buying prices on the CAMIS website. Our report has explored the impact of the vegetable MICS developed in Vietnam, mostly in a qualitative way. The experience gained in Vietnam, Laos and Cambodia shows that information and consultation systems on market seasonality and quality requirements help change the vision of participants and enable them to adjust their marketing strategies. However, the impact beyond the participants is limited by the present weakness of extension services and sector organisations. Our experience also shows that price dissemination was easier to sustain (with the involvement of the public sector) than consultation on seasonality and quality, in particular, due to low local capacity in terms of facilitating meetings. A possible way to sustain the MICS which could be tested would be to combine the conclusions of the meetings with timely practical commitments on action plans by representatives of the public and private sectors, with implementation monitored by "neutral organisations", such as local research institutes or NGOs. An interesting experiment with such action plans is documented for chain networking for coffee in Indonesia (Manalili, 2009). It would also be worthwhile to conduct a thorough impact assessment on the present vegetable price information system in northern Vietnam. ■

References

- Cambodia Agricultural Market Information System (CAMIS), 2010. www.camis-kh.org/.
- Figuié M, Bricas N, Than VPN, Truyen ND, 2004. Hanoi consumers' point of view regarding food safety risks: an approach in terms of social representation. *Vietnam Social Sciences* 3 : 63-72.
- Galtier F, Egg J, 1998. From price reporting systems to variable geometry oriented market information services. In: Kuyvenhoven A, Moll HJ, Tilburg AV, eds. *Agricultural markets beyond liberalization*. Proceedings of the 57th seminar of the European Association of Agricultural Economists, Wageningen (Holland).
- Galtier F, Egg J, 2003. Le « paradoxe » des systèmes d'information de marché (SIM) : une clef de lecture issue de l'économie institutionnelle et de

Table 2. Workshops organised by the alliance of safe vegetable enterprises in Hanoi.

Tableau 2. Ateliers organisés par l'alliance des entreprises de légumes sains.

Date	Topic	Participants
01/07/2008	Presentation of inventory, setting plan of action	39 cooperative leaders, 2 traders, 13 researchers, 5 officials
19/09/2008	Cooperation between groups to prepare for the next season	36 cooperative leaders, 2 traders, 7 researchers, 6 officials
13/11/2008	Cooperation between groups to prepare for the next season	30 cooperative leaders, 13 traders, 10 researchers, 12 officials

la théorie de la communication. *Économie et sociétés* 41 : 1227-60.

Jones WO, 1972. *Marketing staple food crops in tropical Africa*. Ithaca: Cornell University Press.

Mai TPA, Ali M, Hoang LA, To TTH, 2004. *Urban and peri-urban agriculture in Hanoi: opportunities and constraints for safe and sustainable food production*. Taiwan: AVRDC.

Manalili N, 2009. *Participatory agricultural chain assessment (PACA). An approach to sustainable agricultural chain development (SACD). The case of*

VECO Indonesia. www.veco.vredeseilanden.org/files/docs/sacd/PACA_fullguide.pdf.

Moustier P, 1999. *Filières maraîchères à Brazzaville : quantification et observatoire pour l'action*. Montpellier: Cirad, documentation Cirad.

Moustier P, Vagneron I, Bui TT, 2004. Organisation et efficacité des marchés de légumes approvisionnant Hanoi (Vietnam). *Cahiers Agricultures* 13 : 142-7.

Shepherd AW, 1997. *Market information services: theory and practice*. Rome: FAO.

Stiglitz JE, Yusuf S, 2001. *Rethinking the East Asian miracle*. Oxford: The World Bank and Oxford University Press.

Thoyer S, 2005. *Économie politique de la négociation biodiversité*. Poster, colloque final du programme concertation, décision et environnement, Toulouse, 12-13 décembre 2005. www.concertation-envt.fr/docts/apr1999/posters/Poster_Thoyer.pdf

World Urbanization Prospects (WUP), 2009. *The 2009 revision population database*. www.esa.un.org/undp/wup/unup/index.htm