

Enabling Rural Producers to Understand and Better Satisfy the Product, Process and Delivery Standards Required by Buyers

David J Walker, Natural Resources Institute, Chatham Maritime, UK

Summary

Standards are required for efficient trade in agricultural commodities and products. In this context the term standards to taken to encompass the term grades.

Potential benefits for developing countries conforming to standards include: reduced transaction costs, access to premium markets, increased earnings, more stable market, reduced post-harvest deterioration, improved health and safety of workers and consumers, and greater provision for worker welfare and environmental issues. There is potential for producers to access the growing local and regional food aid market.

The potential negative aspects of standards include: the creation of non-tariff trade barriers, costs of conformity are significant and possibly prohibitive, substandard food that cannot be exported being consumed by the poor, the potential for malpractice and the possible marginalisation of small-scale producers.

The different forms of national standards and the possibility of conflicting, unclear and inappropriate standards, some adopted from elsewhere, are discussed. There is a perception that national standards can be a barrier to external trade. Regional standards could overcome some constraints provided that they are appropriate and producers had the technical competence and the necessary infrastructure. The African Regional Organization for Standardization and the Commodity Market for Eastern and Southern Africa propose to streamline and harmonise regional commodity standards.

International and commercial standards are discussed. Commercial standards are progressively becoming more demanding and conformity is becoming more difficult and more expensive. Such standards are becoming a means by which businesses penetrate markets, and assure quality and food safety criteria.

For rural producers to conform to standards of any kind it is essential: that they have access to up-to-date and understandable information to ensure standards are understood, that producers have access to training and facilities to ensure that they have the technical capability to conform, that the standards are appropriate for producers and end users, and they are applied correctly and consistently, that there is a supporting and enabling environment, and that they are able to meet the costs of conforming. The need for aid donor support is recognised.

A list of selected researchable constraints is presented.

The Need for Standards

There is no doubt that standards in some form are required for trade in agricultural commodities. Agricultural commodities and products vary greatly in intrinsic characteristics such as cleanliness, colour, contamination, damage, firmness, moisture content, odour, shape, taste, weight, etc. Biotic and climatic factors, soil type and cultural practice dictate that it is not possible for them to be uniform or perfect. Hence producers, exporters, buyers and end users normally have to agree on acceptable

tolerances that will apply to one or more of the expected imperfections or variations. These limits will depend on the parties concerned, technical options, timeframe, economics, cultural implications, safety concerns, consumer interests and the intended use of the commodity or product.

A complication is that agricultural commodity quality characteristics do not remain constant. Perishable commodity quality characteristics change relatively quickly, as do durable commodities such as cereals in adverse conditions.

An understanding of the nature and consequence of these characteristics can be used to develop a system of classification or standardisation to assist marketing. The degree of formalisation and extent of standards depends on the nature of the trade. In developing countries, many standards are historically informal and the need for formal systems in traditional markets has been limited because buyers and sellers could bargain over products that could be assessed physically, and valued by personal appraisal of either subjective or objective characteristics.

However, global markets require formalised and recognised standards. Consumer, trader and processor purchasing power is increasing, and there is demand for a greater variety of products that are safe and differentiated by multiple quality characteristics. International trade and market liberalisation have increased competition, and products are handled in greater volume and over greater distances. This in turn is associated with an increasing requirement for formal standards to ensure a clear and transparent understanding between trading partners (NRI, 2003). Standards are required to permit trading by specification, thereby making transactions simpler, more orderly and cheaper. They also increase the confidence of banks to provide credit against a known quality and therefore a known market value. Disputes over quality and performance can be more readily resolved.

The sanitary hazards associated with the inter-country movement of agricultural produce can be reduced if clearly defined standards are enforced, particularly in relation to the prevention of spread of serious pests and pathogens.

Standards

According to WTO agreements, standards are voluntary non-legally binding instruments approved by a recognised body that provide for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods. They may also include terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method. Standards are distinguishable from laws and regulations which are legally binding. However, standards can be incorporated into legal regulatory frameworks.

Standards are commonly defined as “rules of measurement established by regulation or authority” and grades are commonly defined as “a system of classification based on quantifiable attributes” (Jones and Hill, 1994). The former are more prescriptive and regulate what is or is not permissible in the context of consumer health and national economic interest while the latter are more descriptive measures that permit greater specificity and facilitate trade (World Bank, 2002).

Standards and grades are parameters that segregate similar products into categories and describe them in consistent terminology that can be commonly understood at a distance by market participants.

There was formerly a view that standards were the domain of the public sector and grades were the domain of the private sector. However, this differentiation is no longer clear. In this document the term standard will be considered to include the term grade.

Potential Benefits of Standards

Developing countries that invest in improving food standards and related institutions can expect to achieve improved livelihoods and advances in public health, agricultural production and export markets.

Recognised standards reduce transaction costs, protect the purchaser and end user, formalise and qualify traditional systems and facilitate trade over distance. They assure health and safety for consumers by removing unsafe products and processes from the food system, and can help protect workers from harmful or socially unjust working conditions where the standards apply to process or production method.

As public awareness of the importance of environmental and resource use increases, standards offer a means for consumers and retailers to voice their concerns and thus create a impetus for sustainable management of natural resources, wildlife protection and improved labour standards.

Implementation of standards to access premium markets will highlight opportunities for improving quality, reducing post-harvest deterioration and losses, and draw attention to the potential rewards available. This will be particularly the case where commodities are traded by a number of grades. Thus standards should inspire producers and traders to rectify malpractices and deficiencies that previously resulted in deterioration and reduced profit margins. Hence standards could contribute to increased food security both nationally and regionally. This happened in Uganda with maize grown as a cash crop. Producers were careless and contamination with soil and stones was so common that the country earned a reputation for supplying only low grade maize. A trade association established minimum standards with government support in 2002 and since then export quality has improved, significantly strengthening regional marketing.

The ability to determine conformity with standards provides the means and opportunity to measure and compare certain selected quality characteristics. Hence loss of standard between harvest and marketing could provide a measure of post-harvest losses. This could be a useful tool in on-farm and marketing loss reduction programmes such that over several seasons standard achievement could be an impact indicator of agricultural research and extension support.

Standardised produce is likely to be more equitably priced than non-standardised produce. This should bring stability to market prices and to the quality offered. Prices quoted against a recognised standard will assist producers and traders to trade their products. Greater conformity in quality will provide processors and manufacturers with the consistency of commodity necessary for optimum performance of processing equipment and production lines. Standards also strengthen and protect consumers' rights.

Producers in developing countries stand to benefit from improved access to additional quality conscious markets that are prepared to pay a premium for quality. Examples of such markets include the food aid sector looking to procure surplus commodities locally or regionally in developing countries, niche markets associated with specific types of coffee, European supermarkets, and the organic market. Access to such markets will potentially increase economic return, enable diversification of production systems, and facilitate the growth of income and employment opportunities in value adding enterprises. Whilst niche markets represent only a small proportion of the overall market they are locally very important to the producers and their economies.

However, these benefits are dependent on producers in developing countries investing and participating in such opportunities. There are considerable constraints to their involvement, principally in the investment and operational costs of understanding, and complying with the complex requirements.

Market for locally or regionally sourced food aid cereals

Studies of local and regional food aid procurement in Ethiopia, Kenya, Sudan and Uganda reveal that there is a substantial premium market for locally produced cereals and pulses (NRI, various unpublished reports). The quantity of food aid cereals procured to international standards by the United Nations World Food Programme, Government of Ethiopia, other international agencies and donor countries in Ethiopia was estimated at 268, 215 tonnes in 2001, 180,430 tonnes in 2002 and 261,970 tonnes in 2003. In Uganda the market was 50,530 tonnes in 2001, 46,697 tonnes in 2002, 107,819 tonnes in 2003 and 121,266 tonnes in 2004.

In 2003 the EU funded the purchase and movement of over 24,000 tonnes of sorghum from Sudan to Ethiopia. In 2004 the World Food Programme organised the supply of 4,000 tonnes of blended cereals and soyabean from Ethiopia to Darfur, Sudan.

Access to this large and growing premium market is not easy for small-scale producers or traders. Some agencies have an open tender system; others operate a closed tendering procedure for pre-qualified organisations. Tenders are often announced in newspapers that are distributed mainly in the capital city hence this could present market information and time constraints for potential suppliers in distant regions. Tenderers are required to submit bid bonds and, if successful, performance bonds. Such financial guarantees necessitate support from the bank sector and incur a cost. Procurers are commonly looking to secure supplies in lots of, say, 1,000 tonnes or greater. Such quantities are beyond the aspirations of small producers and most farmer co-operatives or associations. Even large players in the local grain trade were not familiar with the contractual requirements of such business when it boomed in the mid 1990s, but market competence has developed over the past decade. This market requires supplies of cereals and pulses that conform to specific quality standards that are similar to international cereal trading requirements.

Occasionally, procurers are prepared to consider offers of smaller quantities around the 500 tonne mark and some make active efforts to include producer groups. However, participation of small-scale producers in this market has been minimal in all four countries studied. Nevertheless, this does not mean that they have not benefited financially to some extent by supplying the premium market through large-scale traders. All concerned will have become accustomed to the need to offer produce that conforms to strict quality standards.

Whilst most local and regional procurement of food aid involves cereals, cereal products and pulses, there is undoubted potential for the potential suppliers of sugar,

salt, vegetable oil, milk powder, biscuits, dried fish and canned meat and fish, who can meet the necessary quality standards. In addition to the routine durable commodities there is unrealised potential for the supply of fresh horticultural produce for food aid.

Potential Negative Aspects of Standards

Standards were traditionally seen as a tool for sellers and buyers to facilitate long distance trade. However, more recently there has been an increase in the implementation of SPS measures to safeguard the health and safety of consumers, and to protect workers (social standards) and the environment, e.g. EU pesticide regulations. Equally important has been the increase in requirements for conformity assessment (certification, testing and inspection) and traceability. These criteria are seen as having a significant negative impact for developing countries attempting to access premium markets. The costs of conforming to such standards can be significant and possibly prohibitive.

Trade liberalisation has reduced tariff barriers, but it has exposed another layer of trade measures. There is concern that developed countries use stringent quality SPS requirements as non-tariff economic trade barriers which can prove difficult to surmount. Patricia Hewitt, UK Secretary of State for Trade and Industry, cited an example of the EU's regulations to limit the level of aflatoxins in imported groundnuts. These are far tougher than other international standards, although it was estimated that the benefit would be a saving of 1.4 lives per billion people. Ms Hewitt pointed out that the EU does not have a billion people and because of these standards Africa has lost exports worth US \$670 million per year. This could be viewed as protectionism disguised as health and safety (Wintour and Elliott, 2005).

A consequence of developing countries accessing premium outlets, commonly global or regional markets, for their produce with more stringent quality criteria than a national standard, is that consignments with the lowest standards will be retained for the domestic market; thereby creating a two tier standards system. It implies that local people will be deprived of the best quality product leaving lower quality products for the local population. An example of this is Ethiopian white haricot beans. Only beans that meet a minimum government quality standard are permitted to be exported so as to maintain the reputation of this country's commodity on the international market. In this instance there are no significant health problems. However, in other situations where cereal consignments are rejected for export because of food health concerns such as failure to meet stringent mycotoxin or microbial tolerances, there is a risk that at times of shortage these consignments will be made available to the domestic market. Those sectors of the community that are already poorly nourished and seeking cheap food will be the least capable of coping with food of low nutritional quality.

The use of multiple grades within an overall standard has been observed to provide significant potential for malpractice by graders and warehouse operators in numerous countries.

The imposition of standards that cannot be achieved by small-scale producers using good agricultural practice could further marginalise them from trade and economic development.

National Quality Standards

National standards for agricultural products can take various forms. Most countries have a Bureau of Standards which prepares quality standards for a range of commodities. These appear to be focused on food safety and hence have detailed requirements for the commodity not to contain harmful levels of heavy metals or pesticides. Such standards would be extremely useful if doubts were raised as to whether a commodity was fit for human consumption. However, any attempt to use such standards for regular commercial trade would be doomed to failure because of the logistical, cost and time constraints of undertaking such a wide range of expensive and exacting analyses on each sample submitted.

Domestic end users of agricultural commodities are frequently country or region specific. Therefore national or regional standards, whether established within liberalised economies or earlier by parastatal organisations, ought to reflect the characteristics and requirements of the national agro-economic sector so as to harmonise and facilitate local trading. However, very few countries have developed standards from first principles based on criteria the producers can bring to market following good agricultural practice, the needs of the processing sector, and the requirements of the end users or consumers. It is too easy to adopt standards from another country without considering their relevance to the local agro-industry. Maize in Malawi is milled into meal; maize in Ghana is typically fermented as whole grains and then made into a wet paste product (kenkey). Their standards should reflect these differences. Standards should relate specifically to “fitness for purpose”, hence it is important to consider the specific end use and needs of processors. Walker and Boxall (1998) reviewed existing maize quality standards in Ghana in which the quality criteria required by the end users were identified and appraised as a basis for developing a national quality standard specifically tailored to the capacity of the producers and needs of the industry and end users. A noteworthy attempt to determine standards from first principles was undertaken for maize in Swaziland (Mpanza, 2000). This work highlighted the substantial cost in terms of finance, staff time and materials in developing such standards.

In some countries there are several different and conflicting standards for the same commodity. A study of maize standards in Zambia, a country producing around one million tonnes of maize annually, revealed that following the repeal of the formal national grain standards following market liberalisation in 1989 several different standards had been developed by traders or organisations representing traders (Walker, 2000). At that time there were three maize standards and a large number of commercial millers each had their own customised standards. Producers were confused by the existence of so many conflicting standards. The lack of a single, appropriate and accepted maize quality standard presented a constraint to the development of the liberalised grain market.

In the late 1990s there was a similar situation with maize in Ghana, a country which also produces around one million tonnes annually. Walker and Boxall (1998) identified seven different formal standards for maize in addition to informal standards.

Informal standards in urban and rural maize markets in Ghana

Government sources were adamant that there were no standards in the national domestic market. However, a study revealed that maize perceived subjectively as poor quality will frequently command a lower price or take longer to sell, especially when competing in the market place with maize considered of higher standard. If grain was judged to be of significantly lower standard wholesale traders would discount the price, but only by 10 to 20 %.

Wholesale traders in the maize producing town of Techiman listed their quality concerns in descending order of importance:

- a) Size of grain (small traditional varieties preferred)
- b) Insect holes
- c) Soil admixture/staining
- d) Discolouration/disease/mould

However, wholesale traders in Accra differentiated primarily between new and old maize, recognising that new maize is frequently inadequately dried; the trader could lose weight and volume when it dries. Additionally, inadequately dried maize is more likely to discolour because of fungal infection if kept for more than a few weeks. Maize containing a few discoloured grains will be acceptable for some end uses such as *kenkey* (fermented maize) production.

Discolouration is less of a problem to retail traders than insect damage to which there is greater customer resistance. The presence of live insects is a major problem for retail traders who will frequently sieve grain prior to sale to remove the insects.

Market purchasers will often differentiate between traditional and new high yielding varieties in the same condition; the latter often commanding a lower market price. This probably illustrates a preference for grains that are flintier and easier to store.

It is a concern that there is little match between the standards of wholesalers, retailers and consumers. Producers might have other perceptions of quality.

Developing countries often do not have the financial, technical and institutional resources to develop relevant national standards and often have no alternative to adopting the standards of others irrespective of their appropriateness.

Regional Quality Standards

There is a perception that national standards for agricultural commodities in some developing countries are a barrier to formal cross border and regional trade. There is no doubt that the development of regional standards would offer potential for significant trade growth in many developing countries.

In commerce the supplier aims generally to meet the commercial standards of the buyer. It should be of little consequence whether or not the commercial specifications of the buyer are different from the national standards of the producer, notwithstanding impositions of national minimal standards, e.g. Ethiopian haricot beans discussed above.

However, there are two practical constraints. Firstly the producer might have difficulty ascertaining whether or not the consignment conforms to the purchaser's commercial standards. When samples are submitted to government operated testing institutions in

some countries, e.g. Egypt and Zambia, the laboratory will most likely be required by its own mandate to test for conformity with national standards and not the commercial specifications attached to the submitted samples. There might be problems in finding any local laboratory that is recognised as competent, and has the necessary chemical reagents, to conduct the analyses. Ghana presents an example of a developing country having limited technical capability to support standards to ensure produce meets export market requirements, e.g. there is no reliable service for analysing for heavy metals. Where they have facilities the staff require further training.

Secondly, there could be technical or procedural constraints. The nascent maize trading sector in Uganda is developing rapidly to meet the specific needs of the UN World Food Programme which is procuring cereals and pulses for distribution as food aid within the country. The natural market growth opportunity for this sector is Kenya which commonly imports maize from as far away as South Africa. However, the formal maize trading sector in Uganda has no experience of trading in drier grain (13.5% moisture content in Kenya c.f. 14.0% moisture content in Uganda) or from a stock position. These changes are viewed as problematic by the Ugandans.

The response to problems similar to these has been the promotion of regional standards harmonisation initiatives.

The African Regional Organization for Standardization (ARSO) is an African inter-governmental organization established in 1977, based in Nairobi, Kenya. It is the intergovernmental body mandated to promote standardisation in Africa. The programme is based on the blueprint for Africa's economic development outlined in the 1980 Lagos Plan of Action for the Economic Commission for Africa which envisaged the establishment of an African Common Market through integration of the various sub-regional economic groupings. ARSO's programme is designed towards removal of technical barriers that hinder intra-Africa trade and integration. One of its committees is responsible for the preparation of African Regional Standards for agriculture and food products.

The Commodity Market for Eastern and Southern Africa (COMESA) similarly proposes to streamline and harmonise food quality standards within its nineteen member countries

USAID funded a study to develop simple common grain quality standards for sorghum so as to facilitate trade in four countries in southern Africa (Niernberger and Taylor 2001).

Regional trade is much more likely to be aligned with regional standards where such standards have been developed in collaboration with the commercial trade and are considered by all parties to be appropriate. It is important that the process of developing standards is not captured by special interest groups.

International Quality Standards

A key feature of trade liberalization and removing barriers to trade has been the development of the World Trade Organisation (WTO) agreements on Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary Measures (SPS). These measures present a multilateral framework of rules to minimise unnecessary obstacles to trade. Although these agreements are signed by governments they are aimed at assisting the private sector business community. The WTO agreement requires members to base their regulations on those set by international bodies e.g. Codex for SPS measures.

Strictly speaking, developing country exporters should only have to meet the requirements of SPS and TBT to access international markets, but in reality compliance with European law and standards is the key to access the EU market. Where countries develop standards requiring higher levels of compliance the reasons for this ought to be scientifically based.

The most well known international food standards organisation is the Codex Alimentarius Commission based in Rome, Italy, which was created in 1963 by two United Nations organisations, the Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO). It was intended to develop food standards, guidelines and codes of practice under the Joint FAO/WHO Food Standards Programme. The main objectives are protecting the health of consumers and ensuring fair trade practices in the food trade, and promoting co-ordination of all food standards work undertaken by international, governmental and non-governmental organisations.

Although the work of Codex recognises the need to facilitate international trade it focuses on sensitising the global community to the dangers of food hazards as well as the importance of food quality. Hence the Codex standards can be used to positively identify fitness for human consumption.

The International Organisation for Standardisation (ISO) is the world's largest developer of standards. It is a non-governmental organisation which comprises a network of 148 national institutes co-ordinated by a central secretariat in Geneva, Switzerland. Its standards contribute to making the development, manufacturing and supply of products and services more efficient and safer. They aim to make trade between countries easier and fairer. ISO standards cover not just agricultural products but also related storage, processing and testing methodology. An example of ISO's influence is illustrated by the Quality and Standards Authority of Ethiopia declaring its intention in 2005 to develop a range of national food commodity standards under the ISO 9000 regime.

The WTO Agreement on the Application of Sanitary and Phytosanitary Measures in 1995 identified a specific objective of harmonising SPS measures within the standards, guidelines and recommendations developed by the Codex Alimentarius Commission, the World Animal Health Organisation and the International Plant Protection Convention.

The emphasis towards internationalisation of standards was illustrated further by the formation of the Standards and Trade Development Facility in 2004. This is a global programme in capacity building and technical assistance to assist developing countries in trade and SPS.

International standards can also be set by commodity authorities such as the International Coffee Organisation based in London which established minimum standards for its members' exports in the 2002 Coffee Quality Improvement Plan (CQIP).

Commercial Standards and Procurement

There is a general perception that standards, particularly those involving health and food safety, belong in the public domain. However, the private sector has great influence in setting standards and codes of practice to meet the requirements of trade in agricultural commodities both nationally and internationally.

Some speciality or market niche commodities have established their own standards which will be used by purchasers when contracting supplies. Some suppliers are so dominant in the market that purchasers will use the suppliers standards, e.g. purchasers of US grain will almost always buy to US standards. Some speciality coffees which are exempted from the CQIP fall into this category.

Generally, international buyers of agricultural commodities have the option of buying to their own standards or those of the producers whether they are national, regional or international. Where the standards of the producers meet the requirements of the procurer that is the end of the story. In other instances buyers will procure to a national standard because it presents the best means of acquiring the commodity to the highest possible local standards within the capability of the local agro-industry. This is the case with many consignments of white haricot beans exported from Ethiopia. These beans are then reprocessed in Europe or elsewhere to the standards required by the industry and the consumer. The costs of subsequent reprocessing are factored into the purchase price. The opportunity remains for the haricot bean sector in Ethiopia to upgrade its quality standards. However, such an opportunity is constrained by the need for significant financial investment in bean sorting and cleaning technology.

The World Trade Organisation has issued guidelines on the application of SPS and TBT. However, many international buyers also have the option, and frequently the leverage, to impose their own commercial standards and specifications irrespective of whatever standards might have been created nationally, regionally or internationally. Buyers in the USA will often stipulate USDA standards and European buyers will frequently use the EU standards. EU standards principally include: food hygiene and safety, genetic modification, market standards, organic production, pesticide residues, phytosanitary and traceability. In the case of horticultural fresh produce the international trade is heavily dominated by large retailers who apply their own private sector standards, e.g. Marks and Spencer (Farm to Folk), Tesco (Nature's Choice) and McDonald's (McDonald's Agricultural Assurance Programme). These standards incorporate hazard analysis and critical control point systems (HACCP) and require compliance with the EU requirements and much more.

A consortium of 11 Dutch and UK retailers launched the European Retailers' Protocol for Good Agricultural Practice (EUREPGAP) Farm Gate Standard in 1996. By 2004 this consortium had grown to include 31 retailers in 14 countries, including one in South Africa. Its influence extends to the markets for fruit, vegetables, flowers, grains, meat, farmed fish and coffee. The reality in 2005 is that there are many retailer specific standards that require EUREPGAP plus other requirements. Private sector standards for agricultural food products principally include: environment, food safety, social welfare, wildlife and conservation. The outcome is that standards such as these often become non-voluntary for access to major markets.

Commercial standards are progressively becoming the means by which businesses penetrate markets, and assure quality and food safety criteria. Buyers are frequently setting standards with a focus on the end-user (consumer) or a regulatory body that inspects the company's produce at the retail outlet rather than on supply or problems of compliance. To ensure compliance, buyers are demanding that third party auditing is undertaken. These and other costs of compliance are not considered by the buyer as their problem neither do they make allowances in offering price incentives for compliance since buyers consider their standards as pre-competitive minimum requirements.

The private sector and producing countries both participate in the international standard setting committees of Codex and ISO. However, the ability of producers to influence the possibly more important buyer-led standard setting processes is much more difficult.

Some NGOs view government and international regulations as inadequate and have developed beyond compliance market-based standards or codes of practice, e.g. Forest Stewardship Council and Fair Trade Foundation. These NGOs apply pressure on buyers to accept these standards as part of their drive for sustainable growth and development. Such standards have little to do with product intrinsic quality and more to do with processes of production, worker welfare and trade conduct.

How Can Rural Producers Understand and Better Satisfy the Product, Process and Delivery Standards Required By Buyers?

Many rural producers already have some experience with standards, especially those growers concerned with such traditional export crops such as cocoa, coffee, cotton, floriculture and tobacco. However, subsequent to market liberalisation, and the growth of buyer interest groups, many are now unfamiliar with the market standards being applied to staple and cash crop foodstuffs in national, regional and international markets. The comments below are primarily focused on access to local and regional markets because these have the most significance to small-scale producers.

Standards must be understood

Standards should be built on characteristics that the users consider important and which should be easily recognisable and quantifiable. Because standards are linked to economic return it is important that they are measured objectively and must be seen to be so measured. Hence procedures should be transparent and the parties concerned, especially producers, should be well informed.

For producers to conform with standards for product, process or delivery necessary for access to premium markets it is important that they understand fully all of the specific technical and procedural requirements. However, given the multilayered nature of the standards environment, the many different buyer specific requirements, the difference in application between different commodities, and the dynamics of the commodity markets, this is not easily achieved. Many producers have an inadequate appreciation of the standard's demands and requirements. The situation is exacerbated by standards changing over time. The rate of change is likely to increase in line with product differentiation.

Understanding the status of standards can be challenging. With regard to the microbiological testing of foodstuffs there are three categories of criteria that are recognised. Standards are often legislated and embodied in law. Guidelines are not legal standards, although regulatory bodies might use them. In-house guidelines vary from country to country, or even from company to company. Specifications are technical requirements that form the basis of a commercial transaction (Shapton and Shapton, 1991).

It is necessary for producers to have the same perception of quality as the buyer. Hence producers require relevant and clear information that is readily accessible and in a form that they can understand and contextualise. This requires more than just being issued with printed information. There is a need for transparency and they need to understand the requirements of the market. Understandably, this might be difficult when the buyers, processors or consumers are in another country.

Zambia provides an example of where 8 grower co-operatives formed a second tier management co-operative, the Lubulima Commercial Co-operatives Union, to ensure that they were kept well informed about buyers' standards and other requirements relevant to their exports of baby corn, mangetout, and sugar snap pea to the European Union, and green maize to the regional markets in South Africa and Zimbabwe.

Some national and regional retailers are supportive in ensuring that producers are fully informed of the requirements. However, it is more common for producers to be provided with information by their exporters or their primary marketing organisation. Some national organisations such as Cocobod in Ghana work hard to ensure that their cocoa growers are fully aware of the quality requirements. However, the broader agricultural extension services, particularly in Africa, often lack the necessary information themselves and are unable to inform the growers as to updated markets standard requirements. It is possible that extension work is often ineffective because there is a mismatch of perceptions as to what constitutes an improvement in quality. It is generally believed that a reduction in the number of insect holes in grain will result in improved quality standards and therefore value. In some instances the mental leap from qualitative loss reduction to value added is not justified.

Producers must have the technical capability to comply with the standards

Training in how to produce in accordance with client standards is essential. However, this poses questions as to who pays for the training, who delivers the training and how is it delivered?

There has been a long legacy of the commercial sector working closely with producers to raise the quality of their harvested products. In the 1960s and 1970s entry into the sector was more commonly in the form of plantation-cum-processing-for-export enclaves by firms such as Unilever, Del Monte, e.g. Libbys supporting outgrower pineapple producers in Swaziland. During the past decade there has been widespread developing country market entry by input supply firms such as Monsanto or Pioneer, by processors such as Coca-Cola and Nestlé, traders such as Cargill, and retail distributors such as Carrefour, McDonalds, Royal Ahold or Walmart (Reardon and Barrett, 2000). However, it is now unusual for large companies to invest backwards in their international value chains by undertaking such activities as directly supporting training of producers.

Ghana provides a good example of a statutory public body, Cocobod, working with farmers to ensure the quality of their cocoa production. In this instance this is achieved by an extension service dedicated to this commodity. All developing countries have some form of agricultural extension which in principle is there to guide and support producers. However, many national agricultural extension services are ineffectual. This raises a further question as to what, if anything, is taking its place and can smallholder producers pay for the extension advice or other trade related services. An interesting example of generating funding is found in Jamaica where costs of a standard pre-clearance programme for ackee fruit export to the USA are met by an export levy (Olembo 2002).

In practice it is now more common for the public sector to be primarily concerned with the development and enforcement of minimum safety standards to protect public health, social welfare and the environment. A constraint of the public sector is its limited understanding of the regulatory demands of the regional or international market place. Private sector standards are commonly more exacting than the basic minimum and hence of more significance to producers looking for premium markets. In some sectors the large-scale private sector is increasingly playing a very important quasi-public role with respect to the regulatory environment, promotion, advocacy, monitoring and auditing. Whilst these requirements are laudable in principle they can present practical and technical barriers to producers.

NGOs are increasingly becoming involved in supporting small-scale farmer access to premium markets. For example, CARE has established a private sector partnership with a horticulture export company in Kenya to form a company that provides organisational support, advice and training to assist small-scale farmers conform to retail standards in Europe.

Standards cannot be diluted but the question often facing producers is how to apply standards to their local conditions with systems that assure an equivalence of risk outcome. This frequently requires the development of appropriate management systems.

Standards must be appropriate

Standards ought to be achievable by both small-scale and large-scale growers following good agricultural practice. Ideally, it should be possible to determine conformity to standards with basic equipment on the farm or at least in the production areas or at the primary marketing organisation. Unfortunately, the determination of many standards requires laboratory conditions and specialised equipment and competences.

Microbiological testing clearly requires a laboratory. Surprisingly, so does basic testing of coarse grain standards. The procedures for these are based on gravimetric determinations of often small quantities of grains, or material present in the grains, that require accurate weighing. Such accurate weighing presents little difficulty in a laboratory or a well equipped grain grading centre. However, it is neither cost effective nor feasible for producers, traders or exporters to undertake such procedures in the field. Some organisations have partly addressed this issue by means of colour charts showing examples of the different standards and grades or, for durable commodities, by the dissemination of prepared samples. Nestlé Ghana, in its attempts to purchase its

required quality from within Ghana or in neighbouring Burkina Faso, has gone some way towards developing an alternative practical volumetric system of determining grain quality in the field with the aid of a plastic measuring cylinder. However, much more development would be required before such a system could be appropriate for nationwide application (Walker and Boxall, 1998). A volumetric, as opposed to a gravimetric, approach for grain standard determination would also be more appropriate for situations where grain is traded by volume and not weight.

Broken grains lower the quality standard for millers because they do not yield as much flour as does an equal quantity of whole grain. The determination of brokens is determined by the fact that they will fall through a sieve with holes of a certain size. Sieve sizes used for this procedure differ in aperture size and shape around the world. To be meaningful the sieve size should relate to the screens used to clean the grain at intake into the mill. If the sieve and the screen have the same sized holes then the implementation of the standard will be directly related to the material that the miller will be unable to use in the production of flour. However, a study of standards and milling screens in Zambia found that there was often no correlation. Hence the sieve sizes specified in some standards were frequently inappropriate as a quality determinant.

Standards must be applied correctly and consistently

Standards must not only be applied correctly and consistently but they must be perceived to be so applied. Trust in the standards system is an important factor. However, there is widespread uncertainty in national and international commerce as to whether there are recognised and accessible competent authorities to implement, support, monitor and audit or verify commercial standards. National and regional agencies are often under-funded, lacking skilled motivated staff with adequate infrastructure and adequate inspection and certification capabilities. Another perceived weakness in the management of standards by developing countries is the lack in both the private and public sectors of technical capacity and available resources to engage in standards development and to assess the technical justification and economic implications of new standards and their application domestically or by export partners (Standards and Trade Facility, 2005).

To apply standards correctly it is important to understand the terminology. However, this can be difficult because what appear to be common terms can often have different meanings, e.g. the definition of a broken grain in one system of standards is frequently different from its definition in another, e.g. it is difficult to compare the standard of Bangladesh wheat with that of the EU or USA. Anyone unaware of the small print of the definitions in standards could make unjustified comparisons.

Need for a supporting and enabling environment

Whilst there is no doubt that the private sector plays an important role in developing and applying standards, it is the public sector that is often best placed to provide the necessary supporting and enabling environment. National governments are well placed to lower the cost infrastructure of nascent exporters and/or value added processors.

Different organisations with different interests have generated a standards situation that contains as much conflict as there is harmony. Multiple perspectives exist on the role of standards in the national, regional and global economy. Standards may be viewed as an instrument and expression of trade liberalisation, and by others as a means to reduce

transaction costs and build trust. They are also viewed as a way of tackling difficult food safety hazards and to co-ordinate complex food systems. It is not surprising the producers, especially small-scale growers that have the potential to supply quality conscious and probably premium price markets, need support.

Producers need to be supported by accessible analytical laboratory services. Many African countries do not have the necessary laboratory support, and samples need to be couriered to regional laboratories, or on occasion to Europe, for certain aspects of quality determination, e.g. rancidity of vegetable oils, genetic modification. The increasing need to monitor for genetically modified commodities will stretch existing expertise. Retesting or recertification of products in the importing country could be avoided if there is mutual recognition agreement for the conformity assessment procedures used to determine compliance with technical regulations in the exporting country (International Trade Centre, 2004).

Establishing, building and maintaining the confidence of international buyers is crucial to the success of exporting countries. This confidence needs to be founded on a reliable and credible system of audit and verification of compliance with requisite standards. This is an area that commonly needs further development at national and regional level.

Cost of conforming to standards

Conformity with standards requires an investment of time and effort, and probably finance. Small-scale producers, e.g. smallholder tea growers in Malawi, might have other conflicting and more immediate pressures and demands on their time, effort and resources that preclude the necessary sustained investment in developing their capacity and capability to meet the quality standard that would ultimately increase their economic return

Changes in commodity production, harvesting and handling and processing practices often require significant financial investment. Producers are less likely to invest in conforming to standards if they are unsure as to the sustainability of the market opportunity or suspect that the standards will be changed at short notice.

There could be opportunities for producers to share costs by affiliating into associations or similar groupings.

Need for aid donor support

Producers should continue to look to their national governments and their commercial marketing intermediaries for support in linking them to their buyers and facilitating their compliance with the necessary standards. However, national governments in many cases do not have the funds or the market awareness to meet the needs of producers. Marketing intermediaries might not be prepared or willing to invest in developing the capacity and competence of would be suppliers. Some of the problems are at the public private interface. The general perception is that there is insufficient public-private dialogue and co-operation in standards development, implementation, domestic enforcement and export market strategy (Standards and Trades Facility, 2005)

In the absence of adequate commercial sector support, there appears to be a need for continued donor assistance especially for the small-scale sector.

Conclusions

1. Successful compliance with standards that facilitate access to premium markets has the potential to contribute sustainably to the improved livelihoods of small-scale producers, processors and traders.
2. Developing countries are reacting too late and ineffectively to the changing regulatory framework to avoid negative impact on their export markets, particularly on behalf of small-scale producers and traders who do not have the resources to monitor and react to change in market requirements.
3. It is unlikely that small-scale producers, processors and traders in developing countries will be able to take full advantage of the opportunities presented by the regional and global commercialisation of agriculture without significant donor investment.
4. There is a clear need for developing countries to develop further the necessary infrastructure required to facilitate market access for their producers. This infrastructure could include:
 - standards formulating bodies,
 - laboratory testing facilities,
 - accreditation, certification and auditing services,
 - training services,
 - information and enquiry points.

However, this will require significant investment to achieve access to regional and international markets.

5. The demand for local and regional procurement of food aid is growing and provides a potentially large premium market for producers who can provide commodities and delivery performance that conform to donor quality standards.
6. Investment is required in both the public and private sectors. The public sector has critical roles in developing minimum safety standards to protect local consumers, overseeing certification processes, and ensuring that resource poor farmers and small domestic industries are not excluded from markets because of an inability to comply. Achieving standards compliance and accessing markets is a private sector issue and therefore it is essential to have the active involvement of commerce.
7. There is a need for an effective private – public sector interface so that businesses can inform public officials of their needs in the national, regional and international market place, and for them to understand the barriers that they face.
8. In-country frameworks have to be established that clearly define institutional responsibilities for developing national standards, implementation, surveillance, and for participation in international standards setting organisation. Resources are required for pro-active participation in the committees of these organisations and in positions of influence in setting the agenda of the bodies.

9. Developing countries need the resources and capability to track, assess and react to newly developing regulations through monitoring the WTO enquiry points for each country. This could pre-empt problems in achieving compliance in exports markets but requires financial and technical resources and institutional infrastructure that permits information flow to all relevant parties in both the public and the private sector.

10. It is important that the institutional framework of service providers functions within a supporting and enabling framework that specifically assists small-scale farmers and traders to achieve compliance with standards. The support that they require will include:

- access to the necessary information and ensure that it is fully understood such that they comprehend the terminology of the standard and its status, i.e. is it incorporated into a legal regulation
- provision of training services to ensure technical and management competence to achieve compliance
- assured representative, i.e. unbiased, commodity sampling services
- up-graded capacity and competence of local laboratory analytical services which now have to cope with increased demand for precision and reliability
- independent national audit services, ideally to conduct cost effective pre-audits

11. Key areas for investment in developing countries include:

- building the capacity of government agencies,
- promoting participatory processes for establishing standards,
- promoting and upgrading skills and facilities of local producers and processors to ensure compliance and certification

12. Where combined public and private sectors in individual countries lack the resources to create the necessary national infrastructure it will be necessary to consider regional initiatives and co-operation, e.g. the establishment of regional accreditation bodies to assess national conformity assessment service providers and the equipping of regional accreditation laboratories.

13. It is possible that some national and regional standards are not fully appropriate for the producers or end users.

Selected researchable constraints

1. Determine the specific needs of individual developing countries. Not all of them have the same problems with compliance and they will have different support needs. It will be important to identify, appraise, quantify and cost the specific needs of each.

2. Determine the full cost of compliance with standards by individual developing countries, including the cost of record keeping, cost of facilities to monitor and audit, cost of lost markets, cost in consumer health and the cost of traceability and verifying authenticity. Determine transaction costs at producer level.
3. Determine, how the necessary support services to small-scale producers, processors and traders could best be provided, especially in the absence of an effective agricultural extension service.
4. Determine how quality perceptions along the supply chain match with those of the buyer.
5. Determine field procedures, protocols and proxies for assessing conformity to standards, e.g. volumetric system for basic grain quality determination.
6. Determine more precise and consistent terminology when setting national, regional and international standards.
7. Determine the appropriateness of some nationally or regionally produced standards prior to investing in their widespread application.
8. Determine how producers, processors and traders could reduce costs of compliance by affiliating into associations or similar groupings.
9. Determine if the export of the best quality food results in an increase in unexportable unsafe commodities reaching the poorest.
10. Determine which standards have been more trade restrictive to developing countries than warranted by science, risk or necessity.
11. Determine how to develop appropriate standards that are inclusive of the poor.
12. Determine how small-scale producers can best access the premium local and regional food aid markets.
13. Determine how private sector companies in developing countries are developing their own standards and ascertain the impact that this will have on small-scale producers, processors and traders.

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