

III. Trade Facilitation Measures for Agricultural trade in Asia and the Pacific

While there are numerous challenges to trade in agro-products, there are number of good initiatives in facilitating agro trade in the Asia-Pacific region. Referring to these and other global initiatives, this chapter will highlight the measures that could be adopted for greater agro trade. The discussion is organized into four sections corresponding to the basic classification of constraints: procedures, standards, finance and logistics.

F. Potential Benefits of Trade Facilitation are Significant

The potential benefits of trade facilitation in agriculture are large. In 2006, a study by SITPRO on the perishable food supply chain in the United Kingdom determined that 1 billion paper documents are generated every year; redundant data is keyed in at least 189 million times a year, which means about 30% of all data keyed in is redundant. The study showed that if documents were not present promptly at critical points during import, the cost (from the consequent waiting time, extra transportation, holding shifts at packhouse or warehouse) could be 200-400% of the original cost of the consignment. For imports, the cost of paper administration in the perishable supply chain in the UK is approximately GBP 1 billion per annum. SITPRO estimates that e-documentation could save approximately 70% of these costs. A UNCTAD (2001) study indicates that one percent reduction in the cost of maritime and air transport could increase Asian GDP by \$3.3 billion. According to Djankov et al. (2006) export delays of time sensitive agro-products reduces a country's relative exports of such products by 7 percent on average.

A simulation in Table 7 done by the Strutt, Stone and Minor (2008) signifies the GDP gains from only 25 percent reduction in time to export or import in the GMS sub-region and China. It clearly shows that both large and small economies will gain by reducing export or import time. While China and Thailand will gain by \$336 billion and \$174 billion for export time reduction the much smaller economy such as the Lao People's Democratic Republic would gain by \$15 million and 32 million for export and import time-reduction respectively.

Table 6 - GDP gains from 25 percent reduction in time to export/Import, GMS and China

Country	GDP gain from export time reduction		GDP gain from import time reduction	
	\$ Million	Percent	\$ Million	Percent
Cambodia	28	0.6	44	0.9
Lao People's Democratic Republic	15	0.6	32	1.3
Myanmar	40	0.5	79	1.0
Thailand	174	0.1	166	0.1
Viet Nam	208	0.5	316	0.7
China	336	0.0	371	0.0

Source: Strutt, Stone, and Minor (2008) simulations

G. Towards a Paperless Trade Environment

The agricultural supply chain is highly complicated because of the diversity of actors involved and the numerous standards, protocols and procedures to which agricultural goods are subject. These procedures are generally administered by several different public agencies – such as department of public health, agriculture, customs, border agencies and so forth. This generates a large volume of documentation, and requires agro-exporters to shuffle back and forth between many different agencies to clear goods for export, which has obvious time costs. Thus, trade facilitation measures should aim to make it easier for agro-exporters to meet regulatory or other requirements by cutting the red-tape, and eliminating paper documentation and the redundancies contained therein. Three specific measures to achieve this are discussed below – single window, one-stop shop, and single export document and e-documentation. Establishing a single window would be the most comprehensive solution. If not possible to achieve, the latter two options could be pursued. These measures not only simplify processes but reduce opportunities for corruption.

1. Single Window

A Single Window is defined as “a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements.” (UNCEFACT Recommendation No. 33). It aims to simplify exchange of information between the traders, public and private agencies involved in cross-border trade thereby reducing the complexity, time and costs involved in international trade. Government agencies benefit from improved

coordination at border controls, enhanced trade security, more efficient internal operations, increased revenues in some cases, increased transparency and better trade statistics. Traders benefit from less paperwork; shorter time to obtain permits, certificates and licenses; improved transparency; and simpler and faster customs clearance; and increased predictability of trade procedures.

UNCEFACT (2005) identified three basic categories of Single Window. Firstly, a single authority receives information either on paper or electronically and then broadcast to all relevant government agencies. It acts as the coordinator of the system. The second category is a single automated system for collection and dissemination of information. It may be run by a public or a private entity. The third category is an automated information transaction system through which traders can submit only applications to various authorities concerned in a single application. All of these categories cover agricultural trade since these are models for general trade transactions. In reality, Single Window can be customized based on country needs and priorities. Most recently (2011), India has taken initiative to develop Single Window only for perishable goods, led by APEDA (see Box 6). In Guatemala, the National Single Window is operated by an exporters association, specializing in agricultural goods (see Box 7).

Box 6: India's Single Window for Perishable Exports

While India is a leading producer of fruits and vegetables, it contributes very little to global exports of these goods, in large part because of poor trade facilitation. In 2009, the Directorate General of Foreign Trade announced a 5-year plan to streamline agricultural trade procedures. As stated in Foreign Trade Policy 2009-2014, the plan is to set up multi-functional nodal agencies to operate a Single Window system for export clearance, establish a single point payment system for all duties and levies, introduce a web-based Electronic Data Interchange (EDI) system and highly responsible redressal system. It is envisioned that the nodal agency will come from the private sector.

(APEDA 2011)

Box 7: Guatemala's Enhanced Single Window for Agricultural Exports

In 1986, a single window was set up in Guatemala which reduced the average time to complete export procedures from 10-12 days to 6-8 days. This did not satisfy many private firms, and particularly those trading in perishable goods, who wanted the process to be further streamlined and an e-documentation system to be introduced (e-documentation will be discussed at greater length later in this Chapter). Thus, AGEXPORT, an association of Guatemalan exporters specializing in "non-traditional" and agricultural goods, gained control of VUPE (Ventanilla Unica para las Exportaciones), the Single Window for Export and further reduced the time to complete export procedures from 6-8 days to 2-3 days. It did this by establishing an electronic data interchange system called Electronic Service for the Authorization of Exports (SEADDEX), and setting up a dual system whereby exporters had the choice of presenting documents to VUPE in paper-form or electronically.

(www.export.com.gt)

2. Single Export Document and EDI

Generally, multiple documents must be submitted in order to export a single consignment. If these multiple documents were condensed into a Single Export Document (SED), that would reduce redundancy and significantly streamline trade procedures. In India, the government has adopted an SED specifically for perishable goods which has reduced the number of documents necessary for export from twelve to five. The customs authorities can use the SED to quickly review sanitary and phyto-sanitary certification, results of pesticide review tests and the shipping bill and commercial invoice.

Documentary requirements could be further eased by setting up an electronic data interchange system, as suggested above. This would make it easier to fill out and submit trade documents, and would further reduce redundancies since data is stored in a central electronic location accessible by the relevant authorities. However, in order to maximize the benefits of EDI, it should be implemented after procedures and documents are rationalized. Otherwise, the electronic system would absorb the inefficiencies of the paper-based administration. The Philippines' automated system uses EDI for agricultural imports into the country (see Box 8).

Box 8: Philippines' Automated Trade System for Agricultural Imports

In the Philippines, an automated "trade system" installed at office of Department of Agriculture has reduced processing time for import permits from 2-3 days to 2-3 hours. The DA director logs in to this system to approve or disapprove permits. Quarantine officers at the port receive import clearance through the system prior to arrival of goods. A database of accredited importers and importable products is maintained which improves risk management in the agro-trade. Additionally, the system enables auto debit of fees and payments (through advance deposits with authorized banks). Previously, import permit applications were processed manually, payments were made in cash and receipts issued manually, and the import permit was submitted to quarantine officers upon the arrival of goods.

(Alburo 2010)

3. One Stop Shop

Through a one-stop shop, the various agencies that must clear agro-exports may render their services to traders at a single point. This would reduce the time necessary for exporters to complete formalities. Additionally, if data collected by these agencies is accessible through a central database, the frequency with which requests for redundant data is made would be reduced. Such a facility has been set up at Cambodia's largest

seaport, the Port of Sihanoukville - which mainly services the garment and agro-trade – and is part of a larger initiative to turn the country as a major rice exporter. In India and Guatemala, one-stop shops for perishable goods, in particular, have long been in the works. Their experiences demonstrate the importance of collaboration between stakeholders and the crucial role of the private sector.

H. Risk Management System

Customs administration is responsible for public safety and security and also revenue collection. But in dispensing these responsibilities, the Customs often unnecessarily impedes international trade. As a result, long queues and delays at customs are a common occurrence. This is problematic for agricultural trade because agricultural goods are especially vulnerable to spoilage. A modern administration system, then, should strike a balance between its regulatory responsibilities and consideration for trade facilitation. As such, a Risk Management System (RMS) should underlay all modern customs administrations.

Traditionally, Customs administration inspects most if not all consignments they receive. However, this is very expensive and leads to long delays. An RMS involves categorizing consignments by risk level and inspecting only those deemed highest risk. This focuses attention toward risky consignments, and speeds up clearance of low-risk consignments. Thus, RMS requires a change in focus from punishing violations to encouraging compliance, and accordingly implies a significant restructuring of the traditional customs administration. As the cases below demonstrate, the potential benefits are significant (see Box 9 and 10).

Box 9: Jordan's Risk Management System for Food Imports

Jordan has implemented, with USAID support, a widely-acclaimed Risk Management System (RMS) for food imports. The system was launched in 2002 at the port of Aqaba, where about 80% of the country's food imports enter the country. Low risk consignments now receive clearance in less than a day and there has been an 80% drop in the number of inspections and 30% drop in the cost of inspections – all without compromising food safety.

(Whitehead 2000)

Box 10: Japan's Risk Management System for Agro-imports

Prior to 1995, inspections were carried out by the state. Since then, inspections are carried out by the importing firms at their own expense, and the government has begun to play a more risk management or assessment role. As a result of this, inspection ratio has decreased from 18.1% in 1989 to 10.2% in 2003. Furthermore, a RMS mindset underlies many procedural innovations, which allow agro-importers to expedite clearance. Generally, to import these goods, the importer must submit an Import Notification form – either electronically via the Food Automated Network System (FAINS) or in paper form – at the appropriate quarantine station at port. On the basis of the form, the inspector decides if an inspection of the goods is necessary. If not, inspection is waived, and a Certification of Notification is issued. Importers may expedite this process in a number of ways.

- 1. A notification may be submitted up to 7 days before estimated date of cargo's arrival. A "certification of notification" is issued immediately unless an inspection is deemed necessary. This reduces waiting time at customs.*
- 2. If the importer is importing the same good repeatedly, he or she may attach prior inspection results to the notification form. If the results are cleared during document inspection, physical inspection is waived for a stated period of time.*
- 3. If an imported good passes inspection, it and the manufacturer are registered in a system. Further imports of this good, or imports from this manufacturer, are waived inspection requirements at the border for a certain period of time.*
- 4. If a good is to be imported repeatedly for a period of time, importers may submit a one year or three year import plan. If the imported good passes the inspection, inspection is waived for the specified period of time.*

(Jonker et al. 2005)

As stated previously, the purpose of RMS is not to punish violations of customs regulations – though this is doubtless necessary – but to enforce compliance. In some cases, enforcing compliance may mean waiving particular requirements where the risk of violation is low. An authorized traders' scheme, for instance, relaxes requirements for traders with good records of compliance. In a post-clearance audit scheme, consignments deemed low risk are inspected at the importer's premises rather than at the border, which reduces delays at the border. While such schemes can have significant benefits in terms of trade facilitation, there are also important risks, since they – and RMS more generally – require a highly-developed risk assessment capacity. Yet, it may be unrealistic to expect developing countries new to the concept to develop such a capacity. Thus, it is important that reforms be phased-in and sequenced appropriately. China's experience demonstrates these risks (see Box 11).

Another way to avoid time-consuming inspections at the border is to have the goods inspected in the exporting country, under the supervision of the relevant authorities in the importing country. As this requires close cooperation between two countries, pre-clearance

Box 11: China's Authorised Traders Schemes

China has instituted a similar scheme with respect to food safety which reflect both its unique benefits and potential pitfalls. China emphasizes the creation of closed-supply chains which are limited to farms and exporters which have met high safety standards. This tends to screen out the bad apples, so to speak, before they reach customs. Exporters with good records are exempted from inspection. Yet, the system has two major problems. First, while pre-screening exporters makes sense from custom's point of view, it is also very expensive, as it requires that the government monitor tens of thousands of organizations. Secondly, exempting traders with good records risks letting through unsafe foods. Indeed, in 2008 the program was abandoned after it was discovered that milk produced by a trader exempted from inspection contained dangerous chemicals. It is important to note, however, that this does not condemn authorized traders' schemes in their entirety since the mistake may represent a local and not systematic flaw.
(USDA 2009)

is generally carried out as part of a bilateral agreement. South Africa and the United States of America for instance, have agreed to the pre-clearance of South African exports of citrus fruits, which are then waived certain requirements at the United States port of entry. Yet, pre-clearance is expensive, as it requires the exporting country and firm to bear the full expense of inspections and, as such, is unaffordable for most developing countries. Indeed, South Africa is one of only a few countries in Africa to sign such an agreement with the United States of America despite its claimed virtues.

One more alternative to speed up clearance is to allow traders to submit clearance data and documents prior to the arrival of the consignment. Customs authorities could then complete processing the documents just as the consignment arrives, which would reduce wait-times at the border. Bangladesh has implemented such a measure to great success as all perishable goods are subject to pre-arrival processing. As noted above, Japan has also instituted such a scheme. Similarly, in Rwanda, all perishable goods, drugs and agricultural inputs are eligible for pre-arrival clearance and post-clearance audit. To apply for this facility, traders must fill out and submit a one-page form and pre-clearance must be done at most 14 days prior to the arrival of the shipment.

I. Improving Access to Information

Timely, user-friendly, accurate and easily accessible information on trade procedures, regulations, fees, documentary requirements and trade transaction processes are key to transparency and predictability of trade transactions. And the main target for such accessibility should be traders and their representatives. As explained in earlier chapter, it is

particularly relevant for the SMEs since they are vulnerable to unpredictability or unclarity of trade procedures. UNCTAD (2011) specifies four elements that need to be considered for trade related information management: governance, delivery, data/information and storage. These elements include addressing issues such as establishing legal framework for use of information, quality control, communication channels, information collection and storing methods (e.g. digital or paper based). These elements could be taken up in a phased approach. Firstly, it needs to be decided which organization will take the lead in information management and who will provide which information. If needed, the information may be rearranged. Secondly, the laws and regulations for ensuring validity of the information should be developed and passed nationally. Finally, the most user-friendly channels and a maintenance framework need to be decided upon.

As a very basic step, posting information on a notice board clearly in government offices is a minimum effort that can agencies provide. Each public agency related to a trade transaction holds some information about procedures and requirements for export or import. This should be updated and relevant contacts should be provided for clarification and questions. Distorted information should be avoided at offices distant from cities or at borders. Information should be relayed to all relevant branches so that exporters do not need to travel long distance only to gather trade related information.

The Internet is a popular choice for disseminating trade related information. It can offer 24/7 access throughout the year. It saves cost for the trader to visit the relevant agency to obtain the information. If the legal framework is in place, electronic information available in the authorized internet sites are extremely helpful for traders. Websites with email or online contact points work as additional support to clarify confusions or questions. There are not too many centralized websites on agro-export or import. In this respect, India's APEDA website (www.apeda.gov.in) is worth mentioning. This site includes regulations, certification requirements, traceability information and financial assistance schemes among other topics on agro and processed food exports. Although only for plant quarantine, the website (www.npgs.go.kr) by the Korean plant quarantine authority for export or import of plants is a noteworthy example.

J. Ensuring Product Standards

Globalization has brought in its wake growing concerns about the quality and safety of food and agricultural goods. This has led to a proliferation of public and private standards. The standards have also evolved to apply across the supply chain, that is, from 'farm to fork'. As stated in Chapter 2, developing countries have struggled to keep up with these standards, to the detriment of their export position, for multiple reasons including: lack of quality infrastructure/resources, regulatory incoherence, and the multiplicity of product standards. Below, examples of specific measures that address these constraints are discussed.

1. Improving Quality Infrastructure

Role of national and regional institutions are important

Ensuring a robust Quality Infrastructure requires fully functional national accreditation body, national standards body, testing laboratories, national metrology institute, and inspection agencies. Maintaining these facilities not only requires initial investments; it requires continuous investments on research and development to keep up with new standards and conformity requirements also. Continuous training of personnel is crucial also. The primary role of national accreditation body is to endorse testing laboratories or certification/inspection agencies of their activities. Accredited laboratories or inspection agencies can then issue certificates. As such facilities are expensive; developing countries generally need international assistance to set up them. In 2005, Sri Lanka established the Sri Lanka Accreditation Board (SLAB), the national accreditation authority, with the help of the Swedish International Development Cooperation Agency, and it has accredited agriculture certification bodies for tea (Tea Quality Assurance Laboratory) and food (Food Safety and Quality Assurance Laboratory) (OECD-WTO 2011).

Certificates issued by laboratories accredited by national accreditation body may not be accepted in the importing country. This is where specialist regional bodies (SRB) play a major role. There are multiple regional bodies engaged in promotion of mutual recognition of product and conformity standards. In Asia-Pacific region, both APLAC (Asia Pacific Laboratory Accreditation Cooperation) and PAC (Pacific Accreditation Cooperation) have mutual recognition programmes. Members of these bodies are various accreditation organizations. For instance, the Sri Lanka Accreditation Board has gained membership of APLAC and PAC. This means, Sri Lankan tea and certain food products certified by the laboratories (accredited by the Board) may gain access to export markets on relaxed terms. One of the main objectives of these bodies is promoting the slogan 'tested/inspected once, accepted everywhere'. However, scope of mutual recognition vary for each country depending which national body is signatory. Not all governments or regulatory authorities have the capacity to develop an accreditation mechanism nationally. In such context, regional accreditation mechanisms are promoted. For example in Southern Africa, SADC (Southern African Development Community) has initiated a regional accreditation mechanism (see Box 12). Experts suggest that these SRBs need to strengthen its existing capacity development programmes for member countries¹⁶. In addition, they need to expand their outreach to governments.

¹⁶ Discussion from 'High-level Consultation on Facilitating Agricultural Trade in Asia and the Pacific', Bangkok, January 2011

Box 12: Southern African Development Community Accreditation

The Southern African Development Community Accreditation (SADCA) was established in 1996 with a mandate to facilitate the creation of a regional accreditation system, SADCAS (Southern African Development Community Accreditation Service). The main purpose was to provide Member States with accreditation as a tool for the removal of technical barriers to trade (TBTs) in both the voluntary and regulatory areas. SADCAS is now fully operational, having accredited a few organisations. SADCAS will now provide accreditation services to the Member States on request of the NAEP in the countries without a national accreditation body (NAB). SADCA requires membership of at least three operational accreditation bodies to pursue international recognition, as well as to become a fully functional Regional Cooperation. There are now three accreditation bodies in SADC, namely, SANAS (South African National Accreditation System), MAURITAS (Mauritius Accreditation Service) and SADCAS (Southern African Development Community Accreditation Service).

(SADC 2010-11)

Traceability is key for accessing export market

To increase the credibility of the national certification regime, there should be a reliable way to verify that the exporter receiving certification is genuinely qualified. One way to do this is to track the market eligibility of the concerned product from production until the time of export. A traceability system (see Box 13) also enables governments to quickly identify and respond to outbreaks of disease or contamination. New Zealand has installed such a traceability system called E-cert which operates for trade between Australia and New Zealand. There are separate e-certs for animal, dairy and – of particular interest here – plant products. In this system, product movements at each stage of the supply chain are logged into a central database, and which are ultimately used to judge whether export certification should be issued in a given case. As e-cert is electronic, there is a gain in efficiency in addition to credibility. Indeed, it has resulted in savings to government agencies and the trading community of approximately \$100 per transaction (www.foodsafety.govt.nz). Similarly, India (see Box 14), China and Thailand (see Box 15) have developed electronic traceability systems.

Box 13: Elements of Traceability

Product, Party and Location Identification: Fundamental to tracking and tracing a product for full chain traceability is that every food component harvested from farm or sea and through every stage of its transformation/packaging to a finished consumer product must be uniquely identified at each stage of transformation or possession – and that these identifiers be linked.

Recording of Information: Effective traceability requires standardizing the information that needs to be recorded through each step of the food production and distribution chain.

Linking of Information: To ensure the continuity of the flow of traceability information, each partner must pass on information about the identified lot or product group to the next partner in the production chain, or alternatively, to a central data base or registry where information can be retrieved when necessary.

(APEC 2010)

Box 14: India's GrapeNet System

*A traceability system for fresh grape export (**GrapeNet**) from India to European Union was developed by the Agricultural and Processed Food Products Export Development Authority (APEDA). At the first phase of implementation, the Government of India passed regulation to maintain minimum pesticide standards and made it compulsory for the exporters to register to this system. At the second stage, a centralized web enabled system was created incorporating all the stakeholders in the supply chain of grapes exported from India. This internet based traceability software allows monitoring of pesticide residue, facilitate tracing back from retail shelves to the farm of the Indian grower, through the various stages of sampling, testing, certification and packing, and, issue electronic phyto-sanitary certificate. All necessary certificates in the entire supply chain up to the customs are issued through the **GrapeNet**. APEDA reported that due to this system, more than 40,000 grape producers and 115 exporters have been benefited with producers gaining more than 40% value of the product and the system is running successfully for last four years. The **GrapeNet** system has got two accolades also, one is National award for E- Governance in the year 2008 and E- Asia award in 2009.*

(APEDA 2011)

Box 15: Thailand's TraceShrimp System

A pilot project for facilitating shrimp exports was implemented during 2005-06 to establish a computerized traceability system called "TraceShrimp" under a joint initiative of Thailand and the European Union. Exporters are required to apply for membership of this system at the Department of Fisheries. If approved, they are registered in the system and receive login details. The following information are entered into the system:

Hatchery information: Brood stock is given a code and information from hatchery is transferred to the nursery. Feeds used in rearing shrimp from zoea to post-larvae (PL) stages are recorded. PL are transferred to farms with a fry movement document (FMD) which will be transferred to the TraceShrimp system.

Shrimp farm information: After receiving PL from the nursery, farmers record data on type of feed (company name, batch) and CoC (Code of Conduct) practice information. After harvesting, the movement document (MD) must be prepared. All data are sent to the TraceShrimp system.

Processing plant information: Data of raw materials, process (production data, size) and finished products transferred to domestic or export traders are collected and sent to TraceShrimp via direct electronic data interchange (EDI).

Feed production information: Data on incoming and processing which has been examined and certified by the Department of Fisheries and transportation of the feeds to hatcheries and farms are recorded and sent to TraceShrimp via EDI.

(APEC 2010)

Establishment of legal framework

A food safety system generally, and a traceability system in particular, requires appropriate legal framework and institutional support, in addition to financial support. This kind of support has not been always been forthcoming in Viet Nam. A report (Quynh Van 2004) on Viet Nam Fisheries indicated that the regulations on traceability of fisheries in Viet Nam was not clearly defined and scattered in provisions. The regulations that do exist point to important legal prerequisites of a traceability system, such as an affirmation of a consumer's right to timely and accurate information about the food being consumed, and a seller's obligation to ensure the safety of that food.

Additionally, in the Philippines, where agriculture has been touted as a "pillar" of the economy, a concerted effort to ramp up the food safety regime and modernize agricultural systems generally have been impeded by the scattershot distribution of food-safety and agriculture related responsibilities across government agencies. For instance, the departments of Agriculture, Health, Trade and Industry, Science and Technology, and Interior and Local Government are all involved in food safety with no clear-cut demarcation of responsibilities (P. Catelo 2003)

Thus, the necessary laws should be drafted and institutions established and, equally importantly, should be consolidated and coherent. In 2009, China drafted a new food safety

law to correct for the poor safety record of food consumed locally and exported. Among other things, the law consolidated diverse regulations and standards, centralized the administration of these regulations into a Food Safety Commission, introduced mandatory internal inspection and record keeping, increased penalties for non-compliance, and extended coverage to agricultural production and processing (Ho 2009). Thailand, also, has made important progress on this front. In response to concerns that the food safety system was convoluted, the government channeled most responsibilities to just two agencies, the Ministry of Public Health and the Ministry of Agriculture and Cooperatives (MoAC), with the former responsible for agro-imports and the latter responsible for agro-exports. In addition, in 2002, MoAC set up a National Bureau of Agriculture Commodity and Food Standards to act as the focal point for maintaining food standards and certifying agro-exports.

Harmonizing Standards

Harmonizing food standards, to the greatest extent possible without endangering public health, deepens regional and international integration and expands trade. In Thailand, ACFS established standards for jasmine rice that applied across the supply chain – covering farmers, millers, traders, packaging factories and exporters – and which themselves were in line with regional and international norms such as Codex, IPPC, OIE. Indeed, Thailand has adopted a policy of maintaining single standards for both exports and domestic products. In the Philippines, another major agro-exporter, 54% of national standards are aligned with international standards, as a result of a concerted push toward standardization. However, as international standards are generally stringent, harmonization with them requires that countries have adequate infrastructure.

There are also regional standards to which countries in the region could aspire. In 2006, ASEAN adopted the ASEAN Good Agricultural Practices for Fresh Fruit and Vegetables. In addition, ASEAN has established 775 harmonized Maximum Residue Limits for 61 pesticides, and common standards for mango, pineapple, durian, papaya, pomelo and rambutan (ASEAN 2011). Harmonization can also be done on a bilateral basis. A case in point is an agreement between Australia and New Zealand (see Box 16).

Box 16: Bilateral Harmonization between Australia and New Zealand

From 1980-2000, Australia and New Zealand sought to harmonize their food and agricultural safety regimes. In the 90's, the two governments established a bi-national regime to develop common food standards. The treaty which established the regime had as one of its goals the reduction of unnecessary barriers to trade. It covers all standards except for those addressing maximum residue levels, hygiene requirements, primary food and processing requirements. Also in the mid-90's, the Australia New Zealand Food Standards Code was established. The Code was the outcome of a process of review to streamline food standards, remove unnecessary costs, and further harmonize regulations between the two countries and with accepted international norms.

(www.foodstandards.gov.au)

Short of harmonization, many countries also choose to recognize their varying standards as equivalent. Under WTO law, if an exporting country demonstrates to an importing country that their standards achieve similar levels of SPS protection, then the latter must recognize the exporting country's standards as equivalent. An agreement between India-Sri Lanka, for instance, establishes equivalence for 86 items including agricultural goods and vegetable oils (Sareen 2003). In addition to recognizing equivalence, this and other agreements India has struck with trading partners, contain a commitment to exchange information on specifications, inspections and tests, methods of sampling provisions, and retest, appeal or return in case of rejection. These agreements serve to reducing the frequency of inspection and rejection of exported products.

Harmonization and equivalence, by focusing on standards, leaves out the question of which institutions may carry out the relevant conformity assessment. Even if an exporting country's standards are recognized as equivalent, for instance, the importing country may only accept conformity assessments conducted by its own institutions. This is often the case where the exporting country's physical infrastructure, such as laboratories, does not meet international norms of quality. If an importing country accredited institutions in an exporting country to conduct conformity assessment, then that would be beneficial for exporters and also the importing country, since it expands the supply of conformity assessment services. In Japan, conformity assessment bodies in countries that Japanese authorities have determined contain an equivalent regulatory system, may apply for accreditation to carry out tests on exports to Japan, for a fee. Export Inspection Council of India (EIC) is recognized as competent certification body by the European Union for black pepper, the United States of America for basmati rice, and Singapore for egg.

Yet, in schemes such as Japan's, one authority reserves the right to accredit a conformity assessment authority. More ambitious would be an agreement between countries to recognize one another's accreditation authorities. In such an arrangement, any laboratory accredited by one country would have to be accredited by all parties to the agreement.

2. Upgrading small producers

Certification and branding

Small farmers are particularly hard-pressed to meet global standards because they generally lack wherewithal. Some governments have tried to make it easier for small farmers to meet these standards and obtain the relevant certifications through direct support. Certification is useful because it tends to increase the demand and price of the certified product. The government of Sri Lanka is piloting such a program for tea exports called the Sri Lanka Export Development Board Assistance Scheme. The scheme grants exporters up to Sri Lankan Rs 300,000 to obtain domestic certification from the Sri Lanka Standards institute and up to Rs 500,000 to obtain international certification. For instance, Lipton has sought to obtain certification that its tea was not produced in a manner endangering rainforests; this

certification is in high demand in industrialized countries and commands a high premium (EDB 2011).

An Internal Control System (ICS) may also help to reduce the cost to obtain certification for small farmers. In an ICS, an external certification body delegates inspections of individual farms in a group to an identified body. This means the third-party body only has to perform a few inspections to ensure that the system is working effectively. Helvetas-Nepal, an NGO, organized an ICS in a community of coffee farmers in Gulmi, Nepal (www.helvetasnepal.org.np). Most coffee in Nepal is produced by small farmers, and while the climate is ideal for this crop, certification is rare and production is low as it was only recently introduced to the country. Thanks to the ICS, coffee producers have been able to obtain organic certification from the National Association for Sustainable Agriculture and the Japanese Standards Authority.

Beyond direct support, the public sector can assist small-farmers by way of market incentive. If the government fosters a market for a particular agricultural good or develops an attractive brand, farmers specializing in that crop may see greater revenues, which would make certification or improved agricultural practices more affordable. In Thailand, the government has been active in developing an 'Organic Thailand' brand. A UNCTAD/WTO report (2006) explains that in 1999, as a step towards international recognition, the Thailand Institute of Science and Technology Research (TISTR), Department of Export Promotion (DEP) and Ministry of Commerce (MoC) developed national standards for the production of organic products. In 2002, the Department of Agriculture (DOA) established the country's certification agency for organic produce and formally announced an "Organic Thailand" brand. As of 2004, there were 440 DOA-certified farms.

Integration into value chain

A lack of awareness is also a major problem. Small farmers generally lack awareness both of the benefits of certification and good agricultural practices, which makes meeting global standards highly unlikely. Partnership among public/private entities and producers is a common practice found in many developing countries in this region. In India, Contract Farming India and GIZ teamed up to provide small farmers with practical agricultural training to enable them to meet global standards and become better decision makers. The approach is to provide general skills that are applicable to many crops, including cash crops such as sugar-cane, papaya and citrus, and skills targeted to select crops. The Partnership Farming India is a joint initiative between Contract Farming India (Owner of Desai Fruits and Vegetables) and German Technical Cooperation, GIZ aimed at improving the competitiveness of small farmers' agricultural production. It provides practical agricultural education to fruits producers including Banana. It builds the capacities of farmers to adopt modern agricultural practices. Banana farmers undergo a course on basic farm management and Good Agricultural Practices (GAP) including field training. Upon completion of the training, farmers receive certificates, which allow them to establish a contract with CFI. Due to this initiative, farmers are better linked with the international markets, meeting the international standards for Banana exports. (GIZ 2011)

Likewise, in China, a project jointly operated by the Chinese government and Canada International Development Association (CIDA) established demonstration villages across the country in which small farmers were taught the supply chain approach to quality assurance, which emphasizes quality along the entire supply chain. This “farm-to-table” approach is the predominant approach to food safety today, and increasingly necessary to qualify for export and import certifications. As part of this project, a demonstration village was set up for potato farming in Wuchan with the aim of boosting the province’s fledgling potato trade. As a result, the Wuchuan potato has developed a unique brand in the international market and was selected as a “special green food” during the Olympics in Beijing. In Viet Nam also, The Fruit Association called Vinafruit works as a ‘bridge’ between the exporters and importers. It supports the exporters through research and development, information and technical support on production (APCAEM 2007).

The undesirability of market-related risks also motivates a practice called ‘Contract Farming’, whereby contracted farmers produce crops based on fixed terms. Contract farming lies between two extremes. Companies may produce crops on their own farms, which gives them greater control over production methods but reduces flexibility to respond to market changes, or purchase these crops on the spot market, which ensures maximum flexibility but at the cost of control over production methods. Alternatively, these companies may hire farmers to produce the crops on their own farms but on a contractual basis. This provides the company with a measure both of control and flexibility, and the farmer with a sustained revenue stream. The companies may also assist contract farmers to meet standards by, for instance, providing pesticides on credit which are certified for use in target export markets. Additionally, the companies can collaborate with importers in target markets to maintain a kind of traceability system. In Shandong, China, contracted farmers who produce crops primarily for export tend to earn more than un-contracted peers growing the same crops, while controlling for such factors as labor availability, education, farm size and share of irrigated land (IFPRI 2007).

But there is no cookie-cutter approach to writing contracts for use in such arrangements. While norms exist, much depends on contextual particularities. The first Chinese company to export organic vegetables to China, for instance, signed contracts not with individual farmers but cooperatives, and the contract is outlined during village conferences (Kledal and Sulitang 2007). Village leaders are key to ensuring that all or most members of the cooperative are on board. In this particular case, the company also established farmer schools on organic crop cultivation, as the concept was new at the time, and provided two Japanese experts to monitor and provide training. Yet, part of the trouble with contract farming is that because it can be so free-flowing there are generally few institutional mechanisms to enforce compliance and arbitrate disputes. Thus, contracted farmers are known to “sell on the side”, in breach of contract, to make extra money. In such cases, Industry Associations may be useful. Industry Associations bring together members of the supply chain for a particular product. It provides a venue for sharing of views and information. As such, they are well placed to resolve contract-related disputes and to establish industry-wide norms regarding contract compliance.

For upgrading small producers to a level meeting export markets, however, it is important to have multi-pronged approach utilizing the many tools discussed above, based on country context. Viet Nam's effort to secure international certification, EurepGAP, for its dragon fruit exports illustrates just such an approach (see Box 17). Additionally, its successes and failures illuminate the need for close collaboration between stakeholders.

Box 17: EurepGAP Certification for Viet Nam's Dragon Fruit Producers

Most dragon fruit in Viet Nam is produced by small farmers. The traditional export markets have been other countries in the region such as China and, Malaysia, as well as Hong Kong, China, and Taiwan Province of China, and also countries in the West such as Germany and the Netherlands. However, Vietnam has been unable to export dragon fruit on a large scale to Europe and the United States of America,, where they would command a high price, because the small farmers would grow the crop lack the resources and knowledge to adopt agricultural practices that are consistent with international norms. In 1999, the government began a campaign to boost exports of 11 crops. Several donors, including USAID, AUSAID and SOFRI, teamed up with the Ministry of Agriculture and Rural Development and supply chain stakeholders to improve access to Europe and United States markets by helping small farmers to obtain EUREPGAP certification. In order to achieve this, many initiatives were launched. These included supporting a pilot group of small farmers (cooperative) to achieve EUREPGAP certification on an expedited basis by 2006, developing GAP (Good Agricultural Practice) training manuals, conducting market research for the EU and markets in the United States of America, linking small farmers, exporters and retail chains, developing a branding strategy and contributing to the development of a national dragon fruit standard. The major result was that the cooperative achieved EUREPGAP certification in 2006 and an additional 80 ha of farms qualified for GlobalGAP certification. Farmers and cooperatives that obtained certification had improved farming practices in many ways, including by installing toilet facilities for workers and basic upgrades in waste treatment and disposal, training in hygiene and safety requirements, banning use of fresh manure, using pesticides more safely.

Yet, problems remain. Vietnamese farmers still lag behind their counterparts in countries with more developed fruit sectors, such as Thailand, in terms of international certification, quality of fruit products, and linkage with retail chains and export markets. Additionally, there was little coordination between the many stakeholders and donors involved in the project. For instance, the farmers group tried and failed to achieve EurepGAP certification from 2000-2003.

(Thao et al. 2006)

Making information accessible

Small farmers operate fragmented holdings and generally lack market information that would facilitate market access. As a result, they lack market power and have little incentive to produce high-quality goods or respond to shifting consumer trends, leading ultimately to a stunted business. One way to get around this is for farmers to join cooperatives of Rural Producers' Groups or Producer Organizations (PO). Producer

Organizations have cropped up around the world and provide a support group through which farmers may obtain the necessary finance and access to post-harvest technologies to access global markets, and also information about market prices and what consumers want. It also helps to increase their bargaining power in the market and thus raises farm gate prices.

Market Information Systems address information asymmetries in particular and often employ ICT for this purpose. In India, a private firm, ITC Ltd. set up an MIS called e-Choupal in order to address the challenges referenced earlier (www.echoupal.com). India's agricultural sector is characterized by highly fragmented farms, a large number of intermediaries, and weak infrastructure; these challenges have caused a vicious cycle: returns are low, which discourages risk-taking behavior necessary to tap global markets, which in turn has reduced investment and depressed returns. E-Choupal seeks to short this cycle by communicating to farmers, through 6500 computer kiosks scattered in 10 states, real-time information about market prices, weather patterns, scientific farm practices, risk management and serving as a marketing channel. As a result, e-Choupal has reduced the number of intermediaries and increased farm-gate prices.

K. Ensuring Trade Logistics and Finance

In addition to procedural and product standards concerns, exporters and small producers have trouble reaching global markets because of poor logistics services and infrastructure (e.g. cold chain) and inability to secure finance. This section discusses measures addressing these constraints.

1. Supply Chain Reliability

Above all, in order to reach global markets, small farmers should integrate into supply chains with global reach. A supply chain is an institutional arrangement that links producers, processors, marketers and distributors, and which generates value as products are passed from one member to the next. Unlike spot markets, supply chain requires farmers to establish long-term relationships with partners and maintain a reliable supply stream. Four key benefits are that they enable producers to learn about consumer tastes and preferences, transfer technology and know-how downstream, allow risk-sharing among partners and give farmer access to more sources of finance. These benefits are key because they address the challenges highlighted above.

The public sector, including the government, international organizations and NGOs, can facilitate supply chain development for the purpose of export promotion by linking

farmers with buyers and exporters. There are a number of measures that can be adopted at the regulatory/policy level. As noted above, cold chain logistics are vital for market access. Cold chain logistics include pre-cooling facilities, cold storage, refrigerated carriers, packaging, warehouse and information systems and traceability. This infrastructure is generally imported so import duties should be waived. In addition, as developing countries generally lack the expertise to develop cold chains, they should encourage foreign participation in cold chain development projects. In India, for instance, foreign participants of cold chain projects may have up to 51% foreign equity stake (Vishwanadham 2005). The point can be made more generally. Foreign third party logistics firms could greatly enhance the supply of storage and transportation services, yet are often hampered by regulations. In China, for instance, such firms must apply for multiple licenses from multiple bureaus and ministries, and face state mandated capital requirements that exceed what is necessary to operate “non-asset based services”. Additionally, transparent cold chain industry wide standards are important to ensure consistency of quality and to serve as a spur for further development. China has worked closely with private sector partners, such as the Shanghai Refrigerated Storage Association, to establish industry safety standards (Accenture 2006). It has also received support from the United States, which as a major importer of Chinese agro-goods, has a direct stake in the quality of Chinese cold chains. Public Private Partnerships (PPP) have also played an important role in strengthening the cold chain framework in Australia. Australia’s perishable exports have benefited from this voluntary logistics system (see Box 17)

Producers’ Organizations (PO) can also be instrumental in providing farmers with access to necessary infrastructure and correcting information asymmetries. POs play a variety of social, economic and political roles, but increasingly are perceived as a means to tap larger markets, perhaps regional or global in scale. The function of these POs, in other words, is “to organize relations with the external world.” The Union Cuatro Pinos in Guatemala, for instance, is a cooperative of small farmers and has a central collection centre and a plant for post-harvest operations such as pre-freezing, grading, cleaning and storage (Shepherd 2007). Its main export crops include green beans, zucchini squash and artichokes, with most vegetable exports going to the the United States of America and the United Kingdom. Yet, while some POs have good results, they are not always financially sustainable; many rely extensively on outside contributions.

Such efforts at regulatory reform and infrastructure development would encourage private sector entities to contract farmers to produce goods for export or domestic sales. As explained above, such an arrangement enables them to access export markets by providing farmers with the technical skills, market information and resources. AusAID, for instance, played a key role in linking smallholder cocoa farmers in Indonesia with lead firms, which helped to organize farmers into groups – thereby reducing the market imperfections alluded to earlier – and developing buying centers, which provided farmers with crop storage facilities (OECD-WTO 2011). The project helped to streamline the supply chain, improve product quality, reduced waste, culminating in a 6% increase in farm gate prices.

Box 18: Australia's Logistics Management System for Perishable Exports

Australia export perishables to several Asian countries and thus depends upon a quality cold chain network. An airfreight shipment of broccoli to Singapore, for instance, involves 39 steps, 23 partners and 21 cold chain breaks. Yet, a study in 1999 determined that there were 81 different codes of practice, none of which were through chain, and this confused customers. In response, the government partnered with private industry to pilot a national, farm-to-fork cold-chain framework. There were 17 pilot participants who exported 12 perishable products by air and sea to four Asian markets. Central to the initiative was the development of quality management service agreements between exporters and their supply chain partners. The pilot has since evolved into a nationally voluntary and nationally accredited logistics management system that is open to all Australian exporters.

(Accenture 2006)

Many private firms are able to take the initiative alone. Namdhari Seeds is a market leader in the Indian vegetable seed industry and in 2000 set up a unit called Namdhari Fresh to produce and distribute vegetables for export and domestic sales (Mittal 2007). It has entered verbal agreements with farmers to produce the vegetables and provides them with operational inputs such as seeds, fertilizers, pesticides and wholesale prices, free extension services and also loans at nominal interests during crop failures. Post-harvest, the company transports the vegetables from the field to pre-cooling chambers at its own pack house, where they are graded, packed, and transported via [cold chamber stores] to the airport and ultimately to markets in the United Kingdom and the Middle East. Thus, through Namdhari Fresh, farmers were able to meet the global standards and access global markets.

2. Innovative Financing

Trade finance carries multiple benefits. ESCAP-ITC (2005) indicates three major benefits. Firstly, it makes capital available to traders at the time of need and supports their management of cash flow. Secondly, it helps manage risks associated with trade transactions and provide solutions for non-payment, exchange rate fluctuations, changes in financial regulations and political unrest. Better terms of payment can act as a tool for better negotiation and increased competitiveness.

Structured Trade and Commodity Financing

Structured Trade and Commodity Financing (STCF) is a financing method where potential risks are mitigated or channeled to actors that can bear them through provision of reimbursement from transaction assets (ESCAP and ITC 2005).

One type of STCF is *export-receivables-backed financing*. This type of financing is typically a pre-export loan or advance with the repayment coming from the proceeds of the sale or export upon receipt of payment from importer. A second option is a *warehouse receipt* scheme. In this scheme, agricultural commodities that are stored in a secure location may be used as collateral to get a loan. This would enable sales through year instead of just during harvests, reduce risks in markets, and increase market-power of small farmers. A Warehouse Receipt scheme backs the grain trade in Kazakhstan and cotton in Uzbekistan (ADB 2008). Warehouse receipts require a strong legal system to ensure compliance and encourage participation, a good storage system so that the stored commodities do not spoil, a reliable grading system and a good marketing system to ensure prices reflect “real” value. It can offset the price risk faced by small farmers during peak production seasons, as in the case of Zambia (see Box 19). A third type of STCF is *pre-payment financing*. It entails importer purchasing products with advance payment to exporter using a loan. By making the payment, the importer obtains title to the commodities and transfer rights to the bank. The loan can be a partial amount of the total contract.

Box 19: Zambia’s Warehouse Receipt Scheme

In 2003-4, a Warehouse Receipt System was established to support small-scale maize farmers to address price and cash flow risks. Small-scale maize farmers usually sell their produce immediately after harvest at a low price, when the market is full of supply, to satisfy immediate cash needs. This means, traders are able to purchase maize at comparatively low prices. Through this system, the farmers could sell their produces later at higher prices, when prices go up. Moreover, they could receive loans on deposited crops to meet the immediate cash needs.

The Zambian Agricultural Commodity Agency (ZACA) inspects warehouses and certifies them as suitable to hold crops on deposit. Now there are four certified operators. When a crop is deposited, the operators issue receipts against the commodity, mentioning its weight and grade, and store it until the depositor wishes to collect it. Since the crop is guaranteed by ZACA, the depositor can also secure a loan from any financial institution using the grain as collateral. The warehouses also provide a market place, where traders can purchase in bulk. While most maize deposits in these warehouses have been made by traders and commercial farmers, initiatives have been taken by one warehouse operator to encourage groups of small farmers to use the facility. Such groups must deposit a minimum of 30 tonnes, equivalent to one truckload, in a certified warehouse operated by the trader, who guarantees to purchase the maize at the will of the group, at the prevailing market price. By 2004, four banks participated in the scheme.

(www.ruralfinance.org)

Value chain financing for production

Upstream entities may also provide downstream entities with finance. In Viet Nam, a joint venture between a state-owned company and international consortium operates a sugar factory that largely employs subsistence farmers who lacked the resources necessary

to plant the sugar crop (Boseli and Van de Kop 2005). This was particularly worrisome as the time between planting and harvest of the first sugar crop is 14 months. In response, the project distributed small loans to the farmers through two joint-liability groups of which they were members. In order to increase likelihood of repayment, savings were made mandatory. Credit covered expenses for roughly 2000 ha of farms. Understandably, not all private entities are willing to make such an investment, and the success of the Viet Nameese joint-venture may in part be attributed to the involvement of the state. Yet, there are ways to reduce the risk of non-payment. In India, for instance, a retailing chain called FoodWorld, which contracted 100 small farmers, entered into an arrangement with a bank whereby the bank would finance inputs supplied to farmers – and which, until then, FoodWorld had sponsored – with the latter repaying the banks out of farmers' earnings.

Other measures

Another option is an *agricultural commodity exchange*. Such an exchange would allow futures trading and other kinds of financial transactions which would help farmers to cope with market and business risk. In India, the Multi Commodity Exchange (MCX) goes an extra step by educating small farmers about the benefits of futures trading and provides them with the latest commodity prices with the hope that this will help them to make correct business decisions (CSRWire 2010). About 60,000 farmers are estimated to be benefited from 60 rural service centres consisting MCX platform.

Some developing countries are practicing partnerships among banks to facilitate trade financing including the agricultural trade. Lines of credit have been opened between Exim Bank of India and the Eastern and Southern African Trade and Development Bank; and between the East African Development Bank and China Development Bank (UNCTAD 2009).

In 2006, a global initiative, called Global Network of Exim Banks and Development Finance Institutions (G-NEXID) in support of south-south cooperation was launched under the auspices of UNCTAD. It is a platform for exchange of best practices and knowledge on trade finance, especially for SMEs. It also builds capacity of members through training, sponsored research and development on innovative financing products. (www.gnexitd.org)

In general, there is a consensus that commercial banks need to develop innovative financing products. To address the seasonality and weather issues of agro-products, banks should strive to understand the risks and carefully design short, medium or long term products. Local markets can be penetrated through intermediaries. For large corporations, investment services including long term equity, partial credit guarantees, risk sharing facilities and syndications are some of the existing options. In addition to understanding the sector, banks are now resorting to 'value-add' advisory services for their clients. Partnership with international financial institutions is one way of providing such services. International Finance Corporation (IFC) through its commercial bank partners supports development of agro-financing by offering credit line and risk participation. Advisory services on enterprises'

operations are often attached with such financing products. Recently, IFC launched a global initiative called Global Trade Liquidity Programme (GTLP) that brings together governments, international financial institutions, and develops financing agencies to infuse liquidity especially for agricultural trade.