



WORKSHOP ON MAINSTREAMING ELECTRONIC TRACEABILITY TO FACILITATE CROSS-BORDER AGRIFOOD TRADE IN THE GREATER MEKONG SUBREGION

Bangkok, Thailand, January 2016

Summary of Proceedings

I. Introduction

1. The Mainstreaming Electronic Traceability to Facilitate Cross-Border Agrifood Trade in the Greater Mekong Subregion (GMS) workshop was held on 27 to 28 January 2016 at the Intercontinental Hotel in Bangkok, Thailand. The event was designed in line with the vision of the GMS Core Agricultural Support Program Phase II (CASP 2) to advance pro-poor global competitiveness by promoting food safety and agrifood trade modernization with ICT innovations, diffusion of harmonized standards, and product certification systems.

2. The Workshop was organized and sponsored by the Asian Development Bank (ADB). It was attended by over 70 participants from the six GMS countries (Cambodia, People's Republic of China [PRC], Lao People's Democratic Republic [Lao PDR], Myanmar, Thailand and Viet Nam), ADB, BEAR (Berkeley Economic Advising and Research), and the WGA Secretariat (WGA-S). GMS participants included LITS (Livestock Identification and Traceability System) implementers and stakeholders (Technical Focal Point, Livestock department staff), GMS agriculture ministries, Government agencies involved in traceability, private sector representatives and associations, and development partners. A list of participants is in Appendix 1 and a copy of the Program/Agenda is in Appendix 2. The Workshop was chaired by Ms. Vichelle Roaring-Arunsuwannakorn, Regional Coordinator (RETA-6390).

II. DAY 1

A. Opening Session

Welcome and Opening Remarks

3. Meeting Chairperson, Ms. Vichelle Roaring-Arunsuwannakorn, warmly welcomed all the participants to the E-Traceability Workshop, which provides a venue for raising awareness about the LITS pilot project in Cambodia, Lao PDR, and Myanmar, and for countries and private sector representatives to share knowledge on implementation of e-Traceability for other agricultural products in the GMS as well as generate ideas for scaling-up national programs and mainstreaming e-Traceability across the region.

4. In his opening remarks, Mr. Yashushi Negishi, Country Director, Thailand Resident Mission, Asian Development Bank, warmly welcomed the participants and thanked the delegates from all GMS countries for gathering together to dialogue on mainstreaming E-Traceability across the GMS to facilitate effective cross-border trade and enhance agriculture productivity and value creation for supply chain actors from farms to consumers. Mr. Yashushi

discussed the overarching goals of CAPS 2 to improve food safety and the harmonization of standards across the region in order to achieve the vision for the GMS to become a globally recognized leading producer of safe food. Under CASP 2 programs have worked towards promoting climate-friendly agriculture, safe food production, and market access for smallholders. In addition to these components, strengthening private sector linkages can help further facilitate safe and competitive food production, as well as assist in ensuring production is compliant with international standards. There is tremendous opportunity for economic growth, however, enabling policies which promote safe and legal cross-border trade is essential for moving forward. E-Trade is a key enabling mechanism for facilitating regional trade that can benefit all supply chain stakeholders from farmers to consumers. The workshop will facilitate information exchange and generate dialogue regarding how to improve value along the supply chain, while ensuring compliance with regulatory requirements. LITS Pilot Study countries (Cambodia, Lao PDR, and Myanmar) will share their experience with pilot implementation and collaborate on the potential for regional expansion. Establishing a traceability system will improve food safety risk management, as well as transit efficiency. Mr. Yashushi concluded his remarks thanking all GMS countries and donors, and by reiterating that ADB looks forward to working in close collaboration with all countries to achieve the common goal of competitively producing safe food that is also safe for the environment.

B. SESSION 1: POTENTIALS AND PROSPECTS FOR MODERNIZING AGRIFOOD TRADE IN THE GMS: ICT TOOLS AND INNOVATIVE PRACTICES

Expanding National, Regional, and Global Market Access through e-Traceability

5. Dr. Apichai Thirathon, WGA Secretariat Manger, presented Expanding National, Regional, and Global Market Access on behalf of Mr. Pavit Ramachandran, CASP2 Project Officer. He highlighted the challenges and opportunities associated with achieving the vision of the GMS becoming a leading producer of safe food using climate-friendly agricultural practices and integrated into global markets through regional economic corridors. Agriculture is recognized as a powerful catalyst for sustainable and inclusive economic growth. Some countries, such as Thailand and Vietnam, have achieved strong domestic supply chains. However, achievement is still mixed, and the GMS in general remains well below its agrifood potential in terms of average domestic productivity and trade. Low income, low savings, low investment, and high transit time are all challenges that diminish profitability and reduce agrifood product value. The high transit and upfront investment costs for producing higher value products make it difficult for majority smallholder farmers to escape from poverty and resort to subsistence production. These conditions continue to spur migration from farms to cities.

6. More inclusive agrifood markets could be transformative, opening pathways to self-directed poverty reduction. CASP 2, and in particular the LITS pilot project, address these challenges and opportunities. LITS, which was piloted in Cambodia, Lao PDR and Myanmar, utilized low cost ICT to promote supply chain transparency, improve product quality and food safety, and mitigate disease risks. By offering universally accessible livestock registration and transit information, LITS ICT system can facilitate improved market access.

7. Dr. Apichai briefed the Workshop in the three-pillars of CASP2: (I) Food Safety Trade Modernization; (II) Climate Friendly Agriculture; (III) Bioenergy & Biomass Management. LITS, which was implemented under RETA-6090 has just concluded, and the Workshop is an opportunity to share its experiences and lessons learned to be integrated into RETA 8163,

which is ongoing. In addition to livestock, the Workshop will explore how similar E-traceability technology is (or can be) applied to other sectors. Dr. Apichai called for the contributions and ideas from participants to explore strategies for market and private sector engagement, and to devise a plan for strengthening agrifood trade information systems, and modernizing electronic traceability (E-traceability) as an instrument for promoting sustainable improvements in food security and inclusive economic growth.

E-Traceability for Food Safety and Public Health

8. Dr. David Roland-Holst, Berkeley Economic and Advising and Research (BEAR), and Dr. Suwicha Kasemsuwan, Kasetsart University, presented on the role of E-Traceability in promoting food safety and public health. Dr. Roland-Holst highlighted how across the globe increasing concerns for food safety as well as animal and human health have prompted adoption of agrifood identification and traceability systems, which are becoming internationally recognized as essential components to food production and trade. GMS producers need reliable and cost effective ID and traceability systems to competitively integrate in global markets. Traceability systems support food safety by facilitating risk identification, controlling risk propagation, deterring food misrepresentation and inappropriate distribution, and by rewarding investments in quality and consistency. As food systems become more and more globalized, technology will play an important role in tracing products and ingredients to ensure food safety.

9. Smallholders comprise the vast majority of producers in the GMS, as well as the majority of the poor. It is essential to create a system that incentivizes voluntary participation among smallholders, ensuring they are part of the solution, rather than establishing overly stringent control measures, which can further undermine safety by creating adverse incentives. Adverse incentives could lead to producers selling illegally to avoid health standards, traders profiting off of insider knowledge, and buyers ignoring minimum sanitary requirements to save money, all of which undermine product safety. In this system animals are commonly blended throughout the supply chain, contributing to bio contamination problems and increased disease risk, ultimately leading to a lower willingness to pay among consumers.

10. Traceability addresses these adverse outcomes by providing information at each step along the supply chain, eliminating adverse selection and moral hazard and incentivizing investment in animal health status and improving product value. National programs without international cooperation cannot solve the problem, and Dr. Roland-Holst emphasized the need for regional coordination in order to address transboundary disease risk, without which transboundary interactions could undermine national traceability efforts. Sustainable coordinating institutions will be needed to provide funding, monitoring, research, and cooperative extension.

Innovations in e-Trade: Making the Best Use of ICT Development in Agriculture

11. Mr. Gerard Sylvester, Knowledge and Information Management Officer, FAO RAP, gave a presentation on the state of e-Trade and how E-agriculture affects other ICT interventions in agriculture. In general ICT has grown from small to large very quickly. With smallholders making up 80% of the agricultural sector, Mr. Sylvester framed the conversation around making ICT work for smallholders, and asking how small farmers can take advantage of ICT innovations, and how this can influence market access, and contribution to global food security. ICT in agriculture has included a number of interventions, which has improved the accuracy and timeliness by which we learn information. ICT interventions include phone voice responses

enabling rural farmers to easily access market information as well as advanced technology including high quality satellite imagery enabling rapid weather predictions, and sensor networks providing real time forecasts. All interventions have led to better data quality and increased data quantity. These gains in data access, quality, and quantity, are relevant for devising credible and readily accessible traceability systems, which will form a part of the whole ICT system rather than stand on their own.

12. Mr. Sylvester noted that over the last 10 years, the large number of programs and projects promoting ICT in agriculture represent only 20%, noting the large number (80%) of failed interventions. A comprehensive e-Agriculture strategy requires the coordination of many fields; agricultural ministries must work in accord with other sectors such as finance, telecom, public health, etc. Furthermore, most ICT projects are implemented in isolation, but national and international linkages could promote sustainability and expansion. The technology does not have to be re-invented as much as re-applied to new local contexts.

13. To move forward, Mr. Sylvester suggested each country draw from their national agricultural policy documents their respective pressing challenges. From these challenges, work to identify how ICT can fit into potential solutions. Future ICT collaboration with development partners and/or the private sector should be focused on this identified agricultural priority. Bhutan and Sri Lanka have both been successful in formulating e-Agriculture Visions, and FAO is now working with the Philippines, and Pakistan to develop e-Agriculture strategies.

C. SESSION 2: IMPLEMENTING REGIONAL LIVESTOCK TRACEABILITY (LITS) IN CAMBODIA, LAO PDR AND MYANMAR – PILOT AND BEYOND

Background, by Dr. David Roland-Holst, BEAR

14. Dr. David Roland-Holst presented on the background for LITS pilot in Cambodia, Lao PDR and Myanmar. Dr. Roland-Holst drew from a rapid assessment conducted by BEAR in collaboration with Chiang Mai University on animal trade along the border of Thailand, which concluded that informal trade is dominant in the region. The rapid growth in agrifood trade has increased challenges in food security. To accommodate the growing challenges in food security, Dr. Roland-Holst emphasized the leading role of private sector companies, such as CP and Beta, in developing supply chain information management. International supply chain partnerships have made essential contributions to OECD food standards for export market access, and technology transfer. To achieve regional integration, he advised GMS governments to establish coherent standards. There is tremendous agrifood potential for inclusive growth, and for promoting higher agrifood productivity and higher agrifood value. To achieve these goals, as well as reduce food/disease risk in the livestock sector, the Livestock Identification and Traceability System (LITS) project was developed and tested in three GMS countries. LITS is an important initiative under the GMS Core Agriculture Support Program, Phase II (CASP 2) since it aims to expand market access for smallholder farmers and provide an effective mechanism for disease risk management.

15. Traceability is the ability to follow an agrifood item through production, processing and distribution, and is an important mechanism to overcome information barriers in markets, which can undermine product safety, quality, and value. The objective of electronic trading is to create a clearinghouse for livestock transactions, connecting individual buyers with sellers and facilitating the exchange of information across the market supply chain.

16. The LITS project piloted a unique, low-cost, traceability technology, which is simple to implement, and compatible with existing supply chains and with national, regional, and international health reporting standards. A successful system must have the right incentives for adoption by private parties, and provide credible record keeping at a low cost. In the tested LITS system animals were tagged with individually unique digital tags, which corresponded to respective animal records stored on an online database. Scanning software was compatible with IOS and Android devices, and all software and databases were open-source. The movement and history of each registered animal was recorded in that animal's online record. Each pilot included a central training followed by pilot implementation to test the technology in domestic and cross-border market chains. Results of the Pilots were collected, and presented in an assessment report within the project, and shared with national counterparts. A Roadmap Report for national and regional build-out will be issued.

Overview of LITS Implementation in Cambodia, by Dr. Suon Sothoeun, Deputy Director of Department of Animal Health Production, LITS Cambodia TFP

17. Dr. Suon Sothoeun, LITS Technical Focal Point for Cambodia, presented the LITS pilot project in Cambodia. During pre-pilot site visits the Cambodian team together with BEAR consultants visited trade routes and the Cambodia/Vietnam border checkpoints for movement of live animals and animal products. Dr. Sothoeun briefed participants on the current animal movement along the borders between Cambodia and Thailand, the large pig movements from Cambodia to Laos, and cattle movement from Cambodia to Vietnam, much of which is taking place without proper identification. To commence the implementation of the LITS pilot project, the Department of Animal Health and Production (DAHP) in partnership with BEAR conducted a workshop on LITS technology and implementation, which was attended by 35 participants from multiple provinces. After the training, the team conducted a field demonstration instructing how to safely restrain and tag cattle, as well as how to register, and scan animals. Participants practiced tag application and using mobile scan devices.

18. The transit routes were from Bantheay Meanchey (entry point), Khamphong Chang (mid-point) and Takeo (end point). In general, Dr. Sothoeun expressed that the government greatly supports this project as it aligns with the country's legislation on animal health and production, and livestock sector priorities, namely to promote broader livestock farming, enhance food safety, and manage the spread of disease. As the ASEAN has officially implemented the ASEAN Economic Community (AEC), LITS provides an additional stepping stone for promoting safe trade and food security. Dr. Sothoeun further addressed that Cambodia will need further technical support to upscale LITS in Cambodia as well as to harmonize with other countries in the region, particularly to work with ASEAN to harmonize this technology in the near future.

Overview of LITS Implementation in Lao PDR, by Ms. Tessa Emmer on behalf of the IITS Lao PDR Technical Focal Point (TFP)

19. Ms. Tessa Lynn Emmer, LITS Implementation Supervisor, presented the LITS pilot project in Lao PDR. The LITS pilot activities were conducted in Xiengkhouang and Vientiane Provinces to target both domestic and cross border market chains. Cross-border cattle trade is driven by high demand for meat products in Vietnam and China markets, whereas domestic cattle trade is driven by Vientiane Capital's steady demand for fresh meat. In Xiengkhouang, the team worked with provincial livestock officers and the regional trader association to identify cattle and buffalo bound for Vietnam. To test the technology, the LITS team tagged and

registered cattle in Pak district at farmer and trader locations. Registered cattle were then re-scanned at the final checkpoint located in Nonghad District at the Lao border prior to crossing into Vietnam. Livestock officers are stationed at this checkpoint to approve paperwork for exiting animals. The preliminary result concluded that about 80% of the animals were seen again – from the farm to the border – within the week. After the pilot activities in Xiengkhouang, the LITS team conducted a training in Vientiane Capital to introduce the LITS project and technology and enhanced knowledge in livestock traceability as a tool for managing transboundary animal disease (TAD), improving food safety, and enhancing opportunities for smallholder farmers to access higher value markets. The pilot activities in Vientiane province enabled the team to study the domestic market chain. In this pilot animal registration took place at farmer and trader locations in Savannakhet Province, since regional traders and officers identified Savannakhet as the province where most buffalo are purchased from for processing in capital abattoirs. The endpoint scan was conducted at Dondu Slaughterhouse prior to slaughter. Preliminary results concluded that 97% of the animals were rescanned at the slaughterhouse. In summary, the pilot activities concluded a successful use of the technology, and in part succeeded in the short frame due to the strong network between officers, farmers and traders. To strengthen the use of such technology, Ms. Tessa advised that the government consider up-scaling the use of this technology at the national level and expanding networks to access a greater number of smallholder farmers.

Overview of LITS Implementation in Myanmar, by Dr. Khin Myat New, Deputy Director, Livestock Breeding and Veterinary Department (LBVD), LITS Myanmar TFP

20. Dr. Khin Myat New, LITS Technical Focal Point for Myanmar, addressed the LITS pilot activities implementation in Myanmar. The LITS team together with BEAR organized an inception meeting that was attended by relevant department and agency representatives to introduce the project and identify implementation sites. The team decided to visit Mandalay and Yangon regions due to their high level of livestock activity. Due to the limited time available for implementation period, the team decided to focus on Yangon region for pilot activities. Differing from other countries, Myanmar does not have animals imported from other countries. The team targeted cattle markets in several Yangon townships to engage farmer and trader participation and conduct cattle tagging and registration. Animals were re-scanned in transit, and, when possible, an end-point scan was conducted at the Yangon slaughterhouse. Preliminary results found that approximately 87% of the animals registered were seen again during the pilot and re-scanned. In conclusion, Dr. Khin informed that the project received a great support from local authorities and has great opportunities to up-scale in the near future. To upscale the project, Dr. Khin advised that the project must continue to conduct public awareness and training on the technology.

Challenges and Lessons Learned, by Ms. Tessa Emmer, BEAR

21. Ms. Tessa presented on the challenges and opportunities of the LITS pilot projects in the Cambodia, Lao PDR, and Myanmar countries. She expressed that the same LITS technology was deployed in each location, and all pilots targeted cattle and buffalo market chains, however, local sector characteristics varied by pilot. In considering all three country implementations, the project encountered four key challenges. The first challenge was accessing smallholder farmers. Registering cattle at farm locations is important for establishing a credible traceability system, and for achieving the smallholder benefits of a LITS such as improving product value and market access. Despite efforts to reach as many farmers as possible, LITS pilot highlighted some of the timing and geographic constraints that made this difficult. Remote locations, and far

geographic distances between individual farmers limited access both physically and socially. The second challenge was inconsistent network access in remote areas. Slower or no network access made it difficult to retrieve animal information from livestock tags, and in some locations data was recorded on paper data sheets and uploaded after when network access was available. Overall, network access is rapidly expanding across the region, and these conditions are likely to improve. A third challenge was willingness among farmers and traders to participate, which varied among individuals as well as between locations and countries. In some areas, ear tags were unfamiliar, causing uncertainty among traders on how subsequent buyers would receive the tag and how it would impact product value. Apart from technology adoption, some traders were hesitant about having their product traced. The final challenge was associated with market uncertainty. Information regarding cattle location and movement fluctuated as traders and markets responded to shifts in regulations and fees. In these cases animals might be held for longer, transported through alternate supply networks, or not transported at all. A regional LITS system must be resilient to constantly shifting markets and market conditions.

22. Despite these challenges, Ms. Tessa addressed some of the key lessons learned: I) coupling livestock registration with animal health initiatives was a useful strategy for engaging local farmer participation, and connecting provincial and district officers with resident farmers. II) Tagging and registering livestock in public locations, such as cattle markets or communal grazing locations, helped to increase public interest and awareness in LITS and the benefits of traceability, as well as spark participation among additional farmers and traders. III) Proximity to urban markets provided a concrete context for understanding the benefits of traceability in terms of expanding market access, and traders working directly with urban markets quickly made connections to LITS product-value benefits. At the same time, traders operating farther from high-end markets were typically more skeptical of technology and market opportunity. IV) Finally, implementing more local trainings and education on the technology and benefits of traceability is necessary to increase public awareness among farmers, traders and consumers, and can be valuable for strengthening relationships and knowledge exchange between district officers and resident farmers. In summary, the challenges were associated with adopting new technology among traders and farmers, and ensuring the system is regionally compatible while effective in local conditions and resilient to market uncertainty. The lessons learned revealed opportunities to engage with a broader audience by integrating education and animal health initiatives into implementation, and insight into what locations are more likely to quickly adopt.

Prospects for Scaling-up to a GMS Regional Initiative, by Dr. David Roland-Holst, BEAR

23. Dr. David Roland-Holst addressed the prospects for scaling LITS up to a GMS regional initiative. Agrifood modernization is essential to keep pace with the growing GMS regional agrifood market. The successful LITS pilot implementation with national partners in Cambodia, Lao PDR, and Myanmar indicates that LITS should be expanded to a national program in the pilot countries and other GMS countries. In addition, e-traceability should be extended to other agrifood product categories such as fish, fruit, vegetables and pharmaceutical ingredients. To do so, Dr. David highlighted 7 steps as a suggested framework for moving forward: 1) Coordination with public institutions involved in agriculture, health, trade, land/resources, and taxation; 2) Regional dialog on standards and information sharing; 3) Recruitment of partners in supply chain development in both private and public sectors, global trade partners, especially in the larger and more advanced economies, have strong incentives to support GMS agrifood modernization; 4) Sponsorship for public sector capacity development and technology transfer to build capacity for GMS countries to move in the direction of OECD standards and

strengthening of multilateral relationships; 5) Dedicated extension support programs to help farmers participate more effectively and assist in bottom up approaches for expanding agrifood supply chain; 6) Deploy a prototype system for all countries (beginning with livestock for example) and establish a multilateral framework to test institutional models; and 7) begin parallel development of other product platforms, such as vegetables, timber, spices, pharmaceutical ingredients, precious metals and minerals. In addition, Dr. David stressed public sector coordination to establish a strong multilateral network. This can start with the three pilot countries and extend to the rest of the GMS. To increase product value, Dr. David stressed the importance of making incentives clear to both the trader and consumers.

Facilitated Discussion:

24. Mr. Stewart Pittaway, TA 8163 Mid-term Review Consultant, addressed that e-traceability system could be applied to milk because New Zealand is the leader in dairy products to Asia.

25. Myanmar addressed that fishery industries in Myanmar can use the e-traceability system.

26. Viet Nam expressed interest in utilizing traceability and ear tag technology for livestock management, and encouraged the project to be implemented in Vietnam. In this context, Vietnam inquired whether the project conducted a cost-effective analysis.

27. Ms. Tessa responded that ear tags were inexpensive – US\$ 0.80 per tag, and this value would be lower with economy of scales. Dr. David that smart phone technology contributed to the cost-effectiveness of LITS design. To save costs, the website should be maintained by public identities. Dr. David highlighted that Viet Nam has the best experience in this, especially in seafood – catfish and shrimps.

28. Dr. Somany, WGA National Focal Point of Cambodia, commented that presentation handouts should be disseminated to the participants for easy follow-up. He also inquired about the lessons learned from the Xiengkhouang province. Ms. Tessa elaborated that challenges concerning smallholder access and network availability informed pilot implementation in Vientiane Province and were presented at the LITS training in Vientiane Capital.

D. SESSION 3: KNOWLEDGE SHARING ON E-TRACEABILITY INITIATIVES IN THE GMS

Value Creation through Increasing Product Quality: National Bureau of Agricultural Commodity and Food Standards (ACFS) Small-and-Medium Enterprises e-Traceability Program for Vegetables and Fruits in Thailand, by Dr. Ponprome Chairidchai, Advisor, Information Technology Center, National Bureau of Agricultural Commodity and Food Standards (ACFS), MOAC, Thailand

29. Dr. Ponprome Chairidchai, Advisor, Information Technology Center, National Bureau of Agricultural Commodity and Food Standards (ACFS), Ministry of Agriculture and Cooperatives (MOAC), Thailand presented on the agricultural commodity and food standards of small-medium enterprise (SME) traceability systems in Thailand. ACFS is a government agency responsible for setting safety standard controls under MOAC and the Public Health Department in Thailand. The ACFS traceability program aims to improve the efficiency of food safety control, promote the adoption of e-traceability systems among producers, and improve consumer

confidence. The program utilizes QR codes as a tool to improve efficiency and to communicate food information to consumers directly. Product categories using the traceability system include vegetables, fruits, and rice as well as processed food. QR codes take consumers to product webpages with information on production processes and the entire supply chain. The system is used to manage information relating to farmers, packers, and packing process, and works by tracking products from farm to raw material, production, quality inspection, packing, and distribution. The system benefits manufacturers and producers by improving supply chain management, building consumer trust and confidence, strengthening risk management, and providing product branding. Farmers also benefit by increased market access and revenue, and consumers gain information assurance in food safety. ACFS has conducted training courses on the traceability systems for over 700 participants including farmer groups and entrepreneurs in six provinces.

Promoting Sustainability: Traceverified Project in Viet Nam for Shrimp, Catfish, Fruits and Vegetables, by Ms. Dau Thuy Ha, Co-Founder of Traceverified

30. Ms. Dau Thuy Ha, Co-Founder of TraceVerified, Vietnam presented on TraceVerified's technology and functionality, as well as its customer profile and inclusive business model. TraceVerified has designed an electronic traceability solution for responsible food producers in Vietnam. The company began as a project funded by the Global Competitiveness Facility (Danida) from 2011-2014 to develop electronic traceability software for seafood producers and exporters of Vietnam. In 2015 the project became a private company with the vision of becoming the "leading electronic traceability service provider serving at least 70% responsible food producers in Vietnam by 2020, with a sustainable network of partners to enable regional scale-up". TraceVerified produces a low-cost, easy-to-use product, which works on any smartphone enabling small-scale farmers to easily access and use the system with minimal instruction and training. TraceVerified technology seeks to tackle inadequate food safety controls, low consumer trust, and missing product information by developing a community of responsible food producers and a transparent database on safe food, readily accessible via smartphones. In this system the flow of goods will be paired by the flow of information. Ms. Dau emphasized that the complexity is not in the technology but in implementation, and that building a food transparency alliance will require support from Government agencies, private sector service providers, and consumers.

Implementing a Traceability and Animal Identification System to Address Illegal Cross-Border Cattle Movements (CASP 2 Letter of Agreement Initiative), by Mr. Li Huachen, Director General of Yunnan Academy of Animal and Veterinary Science

31. Dr. Li Huachen, Director General of Yunnan Academy of Animal and Veterinary Science, the People's Republic of China presented on illegal cross-border cattle movement and implications for implementing a traceability and animal identification system. Dr. Li gave a background to Yunnan Province, which shares thousands of kilometers of boarder with Vietnam, Lao PDR and Myanmar. Border infrastructure varies significantly from place to place from a bamboo bridge or dirt toad to highly monitored checkpoints. Demand for meat in China has risen over the past 10-15 years in line with rising GDP per capita. Overall population growth paired with economic growth, rising standards of living, urbanization, road construction, and changes in livestock production systems all drive cross-border trade of live animals and animal products, contributing to the rising spread of animal disease.

32. Dr. Li conducted an animal movement study in PR China, Lao PDR, Myanmar, Thailand, and Vietnam. The study worked with traders and officers at many border locations, and found large numbers of informal movement and blending in holding locations. The study estimated 500,000 to 800,000 cattle and buffalo crossing into Yunnan Province, P.R. China every year. The cattle originate from GMS countries, and possibly Bangladesh and India. The extensive network of live animal movement increases the risk of FMDV spread in Asia. The lack of regional cooperation and political and financial commitment all constrain progress in regulating live animal movement and addressing TAD controls. To move forward Dr. Li proposed state level collaboration between ministries of regional countries, evaluation of current policies for border control of animals and animal products, and setting up cross border disease control zones as step towards establishing disease free zones.

European Trade Control and Expert System (TRACES), by Mr. Vincent Andre, AETS Representative in Thailand

33. Mr. Vincent Andre, AETS Representative, Thailand presented on the organizational structure and background of the European Trade Control and Expert System (TRACES). TRACES is a French Company based in Thailand and Jakarta. TRACES tracks the movement of animals, semen and embryo, food, feed and plants imported from outside the EU or travelling through the EU. In addition to tracking trade movement, TRACES facilitates the exchange of information throughout the supply chain, and ensures food safety. Mr. Vincent highlighted animal health, public health, and plant health as three relevant policy areas in facilitating trade and certification. The system is multilingual and web based hosting workflow between the private sector and public administration. As a management tool TRACES assists in certification, and provides end-to-end information and controls planning, as well as statistics and crisis management instruments. There are 49 non-EU countries participating in TRACES. TRACES is moving towards a paperless system, where all health certificates, controls, and official documents will be combined into one electronic certification eliminating the need for document exchange and handwritten signature, which currently slow down the system.

E. SESSION 4: SYNCHRONIZING STANDARDS, CERTIFICATION SYSTEMS, AND EXPLORING POSSIBLE AREAS OF COLLABORATION

National Agrifood Standards and Regional Coordination: Overview of OECD Experience, by Dr. David Roland-Holst, BEAR

34. Dr. David Roland-Holst presented on the OECD experience in regards to regional coordination and establishing national agrifood standards. OECD economies have established the most advanced standards for agrifood product identification and traceability, which can provide some lessons for other countries. Dr. David noted that although national policies can vary among members, OECD countries have invested a great deal of effort in order to harmonize their safety standards. Similarly, GMS countries will also need to harmonize regionally and/or globally as they continue to upgrade their own standards and integrate into global markets. The European system exhibits highly structured collaboration. The United Nations (UN) – Economic Commission for Europe (ECE) sets quality standards and definitions of practices. Products are divided by quality, size, tolerances, presentation, etc and then labeled according to its category. Dr. David shared the European Union Marketing Standards for fruit and vegetables to demonstrate the level of detail and rigor in standardizing quality, which includes metrics on total soluble solids, firmness, juice content, skin color, etc. Rigorous methods are used to ensure quality metrics are transparent, well defined, and comparable. The

goals of the OECD/EU system include: objectively verifiable quality parameters, labeling standards, promote credibility, implicit contracts governing quality characteristics, and transparency. Bottom-up consistency is also important for ensuring standards are consistent from the enterprise/household level up to the regional/global market level.

35. Dr. David identified valuable mechanisms for supply chain management, including registration and licensing, supply chain monitoring, information systems development and sharing. In addition to these mechanisms, a high level of coordination and consistent dialog will be critical for promoting standards in the GMS. Among the most valuable lessons from the OECD experience are institutions to promote smallholder modernization and more effective value chain participation: Certification, Contracting, and Cooperatives. All “three C’s” help reduce market uncertainty and connect producers with retailers facilitating value creation. Potential partnerships and coordinating institutions include regional and sub-regional secretariats, Agriculture and Trade ministries, Global trade, food, and health institutions, development partners, OECD and other export partners, and leading regional and global agrifood enterprises and commercial organizations. In conclusion the partnerships and coordination between institutions both regional and sub-regional are crucial for standard development and application.

Public and Private Partnerships for Agrifood Supply Chain Development, Trade Facilitation, Product Quality and Safety, by Dr. Samuel Heft-Neal, BEAR

36. Dr. Samuel Heft-Neal presented on public and private partnerships for agrifood supply chain development, trade facilitation, product quality, and safety. Public private partnerships (PPPs) is a generic term for a relationship between private and public sector players. Traditionally, national governments have partnered with the private sector for infrastructure projects, however, PPPs have evolved to include a variety of arrangements including partnerships between donors, development partners, and international, national, and/or regional organizations. The value of PPPs is to combine expertise, share risks and financial responsibilities, and stimulate innovation. Agrifood PPPs are an important part of promoting standards and traceability. Existing partnerships include setting food safety standards, infrastructure projects (e.g., roads, ports), value chain development (e.g., help meet SPS standards), and trade facilitation (e.g., streamline international trade procedures). A successful partnership is grounded in shared incentives, clear expectations about financial commitments from both sides, well defined expectations with respect to responsibilities, fair risk management/sharing strategies, and well designed legal framework that is flexible enough to allow for unexpected events. Common challenges faced by public/private partnerships include different cultures and methods among partners, difficulty coordinating, differing expectations, political oppositions (e.g. change in government), and delays in the decision-making processes.

37. Successful PPPs related to food safety include: (i) trade facilitation in Thailand, where government agencies jointly partnered with Thai food exporters and IT companies to harness smart IT solutions for safe food supply chains and to promote high value agricultural exports (2002); and (ii) SPS inspections in Mexico, where a private company was hired to monitor imports’ compliance of SPS standards (2004). In conclusion PPPs are increasingly playing roles in global agrifood value chain development, trade facilitation, and improvement of product quality. Partnerships must be carefully designed to maximize chance of . Under the right conditions, PPPs can be mutually beneficial relationships that promote agriculture at home and abroad.

Review of Technological Progress Across Agrifood Products: Livestock, Vegetables, and Processed Foods, by Dr. Samuel Heft-Neal, BEAR

38. Dr. Samuel Heft-Neal gave a review of the technological progress across livestock, vegetables, and processed food products. Agrifood value chains have benefited from a variety of technological advances including: new varieties, optimization of inputs, traceability and identification, improved logistics/efficient delivery of goods, and producer access to market information. The components driving adoption of new technology by stakeholders include profitability of new technologies, increased linkages between rural and urban markets, and safety standard requirements. Progress within the Livestock sector include adoption of RFID and QR code technology used for identification and traceability, electronic identification (EID) software to enable precision livestock farming, rapid dissemination of market information, and improved ICT enabling lower search costs linking poor livestock farmers to urban markets.

39. Technological progress within vegetable sectors include mechanized farming leading to optimization of inputs, access to new crop varieties, ICT for locating markets and pricing information, and improved storage methods, packing, post-harvest treatments, and transport conditions all contributing to minimizing post-harvest loss and improved product quality/safety.

40. Progress within the processed food sector includes enhanced nutrition, new preservatives (adding nutrition and increased shelf life), mechanized processing, tools for safety inspections and branding, and increased opportunity for branding and advertising.

41. In conclusion, technology plays an increasingly important role in agricultural value chains. Technological innovation can contribute to production, post-harvest storage, buyer identification, and delivery phases of an agricultural value chain. While large producers have long used technology in production, many technologies are becoming increasingly available to small producers as well.

Other GMS Product Certification Schemes, by Ms. Tessa Emmer, BEAR

42. Ms. Tessa Emmer presented on other GMS product certification schemes. There are limited regional GMS certification schemes in practice, and different commodities and sectors have varying schemes in place. Ms. Tessa presented on timber, aquaculture, and farmer groups. Certification is in increasing demand on the consumer side. Demand for certified timber, for instance, is increasing worldwide. Current Pan-ASEAN Timber Certification Initiative is working on developing a step-by-step process to achieve sustainable forest management in each member state, with the objective of improving performance standards and international market access. The Forest Stewardship Council (FSC) has certified over 530,000 hectares of forest in five GMS countries. While most certified forests are managed by state entities or private companies, a significant portion of non-certified forests are managed locally by families and/or communities. Certification can be prohibitively expensive for smallholders, which has given rise to Smallholder Group Certification Projects in Thailand and Vietnam run through PEFC (Program for the Endorsement of Forest Certification) enabling smallholders to achieve economies of sale in production and marketing, and access global timber markets.

43. Aquaculture certification schemes have developed to target food safety in harmony with environmental sustainability and responsible fisheries management. There are a large number of

aquaculture and fisheries certification schemes, which can be based on International or Regional standards depending on intended market. Given the large number of small farmers, Group Farm Programs are also available under, for example, Global Aquaculture Alliance Best Aquaculture Practices (BAP) schemes. In contrast to international third party certification schemes, VietGAP is an example of a first-party certification scheme based on government-developed standards and managed through a national certification body.

44. In response to growing concerns about food quality and safety worldwide, farmers and food producers will be increasingly required to be certified against a food safety standards. Agriculture certification schemes include widely recognized Fair trade and Rainforest alliance, group certifications, as well as complimentary (or alternative) participatory guarantee systems (PGS), which reinforce locally focused benefits. In summary, successful GMS-wide certifications should consider regional involvement and compliance, harmonization of different certification schemes, inclusion of small-scale farmers/operators/fisheries, capacity building at local, national, and regional levels, and governance and stakeholder involvement.

Open Discussion:

45. Ms. Zang Yun, delegate from China raised a question as to how smallholder farmers benefit from PPP. In response, Dr. David Roland-Holst stated that the benefits of a PPP are based on the project design. Normally projects aim to address the smallholder farmer's binding constraints, such as market access and financial and logistic support. Often projects work with groups of smallholder farmers and partner with larger producers.

46. Representative from Thailand agreed with Dr. David Roland-Holst that coordination mechanism is very important and asked what level of agency should be targeted, and whether the focus is on creating new organizations or working with existing organizations. In response, Dr. David Roland-Holst stated that we will work with all levels, but the national level is crucial to engage agencies for national dialog and to get regional agreements on fundamentals such as minimum standards, coordination mechanisms, and information sharing.

F. SESSION 5: SUSTAINABILITY AND MARKET ENGAGEMENT

Strategies for Strengthening Supply Chain Benefits and Market Incentives, by Mr. Chatta Udomwongsa, Chief Operating Officer, OpsSmart Technologies (Thailand) Company Limited

47. Mr. Chatta Udomwongsa, Chief Operating Officer of OpsSmart Technologies (Thailand) Company Limited, gave a demonstration of their traceability technology. Mr. Chatta purchased products from Tesco supermarket and demonstrated how the mobile phone application can be used to scan the QR code on the package and readily view product information. The demonstration included a pack of TESCO meat and of TESCO vegetable products. Any mobile smartphone scan App can be used to scan the package QR codes. Product information includes name of producer, location of farm, packinghouse, etc. Meat products were traced back to the factory, and vegetable products were traced back to google earth factory. Some products show farm locations, and others do not. Sellers of farm produce could also add bonus material, such as cooking videos, showing consumers how to prepare recipes with purchased ingredients. OpsSmart provides the software and the industry fills in the information.

E-Traceability for Market Supply Chains in Thailand, by Ms. Sunisa Maud-en, Director of Quality Assurance of Betagro Group

48. Ms. Sunisa Mauden, Director of Quality Assurance of Betagro Group, presented on the company's e-traceability program. She gave a brief introduction of the 5 business lines of Betagro, which includes: Poultry, Swine, Feed, Animal Health and Processed Food. The program strives for complete traceability. In 2003 Betagro introduced poultry supply chain traceability and since then has grown to include additional traceability supply chains and features, including a website for EU customers, QR code traceability, and a partnership with TESCO. The current e-traceability system covers all Betagro brands of farm products with information recorded at all stages of the supply chain. Ms. Sunisa demonstrated what traceability information is displayed to customers who scan QR codes on purchased products. Detailed information on the entire production process including farmer, veterinarian, and other personnel involved in production is included. The traceability technology also can be linked to social media Facebook. Betagro Group has found traceability technology to help build trust among consumers in regards to the quality and safety of food products, and has helped spur supplier enthusiasm in sharing information and seeing the benefits of having their names displayed when their products are sold.

Available Support from International Organizations for Implementing e-Traceability, by Ms. Maame Agyeben, Associate Economic Affairs Officer, Trade Facilitation Unit, Trade and Investment Division, UNESCAP

49. Ms. Maame Agyeben, Associate Economic Affairs Officer from the Trade Facilitation Unit, Trade and Investment Division of United Nations Economic and Social Commission for Asia and Pacific (UNESCAP) presented on UNESCAP and available trade facilitation resources. UN ESCAP combines legislative, capacity building, and knowledge products for users, and works with customs, ministry of trade, and ministries of agriculture to facilitate trade.

50. Current work is focused on promoting paperless trade and e-traceability in the region, and drawing on diverse experts to build knowledge and engage other agencies working in a similar space. Objectives include reducing the time and costs associated with cross-border trade, ensuring compliance with relevant laws and regulations, and gaining and maintaining market access. UNESCAP has capacity building activities and resources available on their website to promote paperless trade. Successful traceability cases include GrapeNet in India and TraceVerified in Vietnam's aquaculture sector, both of which are featured on UNESCAP's website. Future work and assistance include a forthcoming guide on UNNExT Handbook on e-Business Standards in Agricultural Trade, a roadmap for implementation on electronic sanitary and phytosanitary (SPS) certification, risk management systems for agricultural trade, quality standards for agricultural trade, and capacity building on agricultural trade facilitation.

Private Sector Perspective, Support and Network Linkages from National and Regional Institutions, by Mr. Paul Apthorp, GMS Business Forum and Vice Chairman of GMS Freight Transport Association (GMS FRETA)

51. Mr. Paul Apthorp, Vice Chairman of the GMS Freight Transport Association (GMS FRETA), represented the private sector transport industry of the GMS. GMS FRETA works to improve the flow of cross border freight in the GMS, reduce delays, and bring down the cost of transport as well as bring together Road Transport Industry with Operators. Mr. Paul expressed an overarching emphasis on standardization across the GMS to achieve a better freight transport industry. FRETA priorities are to: (i) improve border operating hours for all major borders in the GMS Economic Corridors to a minimum of 12 hours, 7 days a week; (ii) establish mutual recognition of trailers enabling member country trailers to be swapped at borders and pulled by home country tract units; (iii) allow recognition of electronic transferred documents to speed up clearance since many borders still require hard copies; and (iv) access finance to upgrade CLMV fleets to enable transport companies to invest in more environment friendly safer and fuel efficiency equipment, and to enable official commercial vehicle leasing markets.

52. Some challenges include transporting perishables, for which transit time is critical and late delivery results in reduced product quality and loses customers, as well as transshipment at borders, which often faces delays, infrastructure failures, and rent-seeking behavior. Engaging SMEs could help work towards ensuring on time delivery, every time. FRETA strives for competitive transport with easy connections in global routes, consolidation of feeder services, and ease of export. Solutions include free movement of trucks, allowing for trailer exchange at borders, and building the infrastructure to swap containers with a crane. These improvements would eliminate the need for manual trans-loading operations, which cause delays and pilferage of products. Furthermore, development of cold-chain warehouses would provide needed storage, power, and value-added services, strengthening the agri-food value chain. Mr. Paul also called for attention to the “tea money” issue happening, and stressed that there is still a long way to go address the current challenges, however developing more efficient e-trade in the region is an important step.

G. SESSION 6: POLICY LEVERS AND THE WAY FORWARD

53. Dr. David Roland-Holst gave the final presentation of day one, outlining policy levers and the way forward. Dr. David suggested a framework for anticipating institutional and technical requirements to support market expansion across the GMS. Within this framework Dr. David gave 10 recommendations as a starting point for member countries to work off in building national strategies to move forward with electronic traceability. The ten recommendations included: (1) policy support for market access and supply chain modernization; (2) policy support for adoption of appropriate technologies and institutions including e-traceability, certification, contracting, and producer cooperatives; (3) technological modernization including e-traceability to improve supply chain transparency and product quality accountability; (4) partnership with private sector actors to accelerate supply chain modernization and reduce public costs; (5) regional government partnership and transboundary coordination to harmonize standards and adoption; (6) global trade partnerships to support GMS agrifood modernization, technology transfer, and export market access; (7) targeted investments in low-cost use technologies to overcome information-based market access barriers and improve supply chain

performance and participation; (8) develop internet database platform while protecting privacy; (9) expand LITS cattle pilots to national programs across the GMS; (10) expand LITS pilots to other animals including fish, fruits and vegetables, timber products, and other processed agrifood products.

Facilitated Discussion:

III. DAY 2

A. SESSION 7: GROUP DISCUSSION – ENHANCING E-TRACEABILITY/LITS IMPLEMENTATION AND PROCESSES AND WORK PLANNING

Cambodia Break away group

54. Top five priority initiatives identified:

1. Policy Support for market access and supply chain modernization
2. Governments to take a leadership role in establishing and administering standards and partner with the private sector.
3. Expanding LITS cattle pilots to national programs in all GMS countries
4. Expand e-Traceability/LITS to other product categories including fish, fruits and vegetables, timber products, and many other live and processed agrifood products
5. Regional government partnership and coordination for harmonized standards

Lao PDR Break away group

55. Top five priority initiatives identified:

1. Policy support for market access and supply chain modernization
2. Governments to take a leadership role in establishing and administering standards and partner with the private sector
3. Promote technological modernization, including e-traceability to improve supply chain transparency and product quality accountability.
4. Make targeted investments to overcome information-based market access barriers.
5. Expanding LITS cattle pilots to national programs in all GMS countries.

Myanmar Break away group

56. Top five priority initiatives identified:

1. Policy support for market access and supply chains modernization
2. Target lower income actors with appropriate technologies and instructions that facilitate market access (i.e. e-traceability, certification, contracting, and producer cooperatives
3. Governments to take a leadership role in establishing and administering standards and partner with the private sector
4. Promote universal information access (such as internet database platform) to promote market transparency and raise policy issues regarding privacy
5. Expanding LITS cattle pilots to national program in all GMS countries

PRC Break away group

57. Top five priority initiatives identified:
1. Policy support for market access and supply chains modernization
 2. Target lower income actors with appropriate technologies and instructions that facilitate market access (i.e. e-traceability, certification, contracting, and producer cooperatives)
 3. Governments to take a leadership role in establishing and administering standards and partner with the private sector
 4. Regional government partnership and coordination for harmonized standards
 5. Expanding LITS cattle pilots to national programs in all GMS countries.

Thailand Break Away Group

58. Top five priority initiatives identified:
1. Policy support for market access and supply chains modernization
 2. Regional government partnership and coordination for harmonized standards
 3. Target lower income actors with appropriate technologies and instructions that facilitate market access (i.e. e-traceability, certification, contracting, and producer cooperatives)
 4. Promote technological modernization, including e-traceability to improve supply chain transparency and product quality accountability.
 5. Promote linkages with global trading partner countries and enterprises to promote joint ventures, technology transfer, and export market access

Vietnam Break Away Group

59. Top five priority initiatives identified:
1. Policy support for market access and supply chains modernization
 2. Target lower income actors with appropriate technologies and instructions that facilitate market access (i.e. e-traceability, certification, contracting, and producer cooperatives)
 3. Governments to take a leadership role in establishing and administering standards and partner with the private sector
 4. Promote universal information access (such as internet database platform) to promote market transparency and raise policy issues regarding privacy
 5. Expand e-Traceability/LITS to other product categories including fish, fruits and vegetables, timber products and many other live and processed agrifood products.

Appendices

[Appendix 1: List of Participants](#)



GREATER MEKONG
SUBREGION
CORE AGRICULTURE
SUPPORT PROGRAM

Working Group on Agriculture Secretariat

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