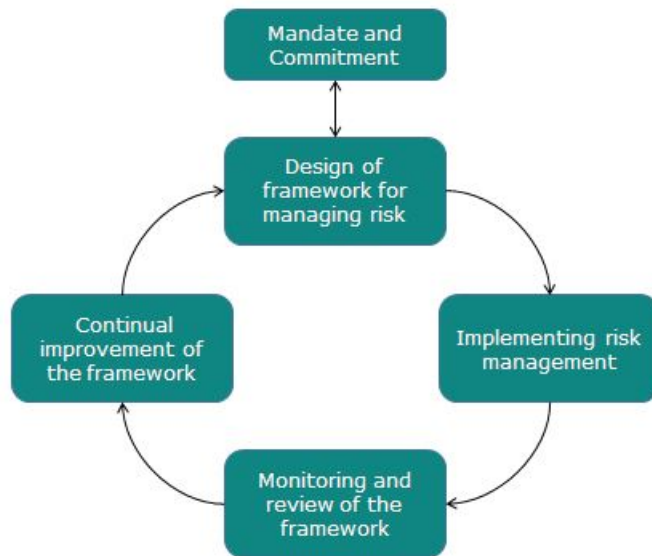


The background of the cover is a deep red color. It features a faint, semi-transparent image of financial data. On the left, there's a candlestick chart with several price points labeled: 2911.98, 3041.05, 2988.88, and 3349.52. To the right, a magnifying glass is held over a bar chart. The magnified area shows a series of bars of increasing height, with the text '93% Updated' visible below them. A white diagonal line runs from the top left towards the center, and another runs from the bottom right towards the center, meeting near the bottom right corner.

INTEGRATED RISK ASSESSMENT

PART VIII
VOL 2



Volume 2

Part VIII

Integrated Risk Assessment

Risk assessment and management are integral to the application of border regulations and compliance. This Part deals with the handling of risks and the implementation of risk-based selectivity in a Single Window environment.

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1. Introduction

The Single Window primarily serves as a platform for the regulatory reporting of import, export and transit goods for release and clearance. In Customs, it is an established principle that goods will be controlled selectively, based on risk. It would not be possible for regulatory authorities to check each consignment. Therefore, in a Single Window, all participating agencies must apply a system of risk-based selectivity to better target consignments posing a potential risk, and to judiciously utilize resources for the effective application of the regulations. The principles of risk-based selectivity apply to all participating government agencies, including Customs. As the lead agency, Customs must build the necessary features in the Single Window environment to facilitate risk-based interdiction.

1.1 Relationship to other Parts of the Compendium

This Part provides an overview and introduction regarding the concept and practice of risk management as currently employed by agencies other than Customs. It supports the basic standards of risk-based controls in the Revised Kyoto Convention and the SAFE Framework of Standards. This Part also discusses the concept of risk assessment, as applied in the context of food and agricultural products, in terms of the principles contained in the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (the ‘SPS Agreement’) and the standard-setting organizations recognized under that Agreement. It considers a range of initiatives promoted under the Green Customs programmes of the United Nations and the WCO, and provides examples of risk assessment in Mauritius Customs. This Part further refers to the case study ‘Integrated Risk Management System’, which was prepared by the Korea Customs Service and published in Volume 1 of the WCO Risk Management Compendium. The strategic context of the Single Window is discussed in Part III of Volume 1 of the Single Window Compendium, which places a high value on the holistic implementation of risk management techniques. Part III of Volume 2 describes business processes where risk assessment is prominent. The current Part elaborates on what it means to provide risk management.

2. Risk Assessment in a Single Window

Most Customs administrations have adopted automated declaration-processing systems. These systems typically provide Customs administrations with the facility to apply selectivity criteria for drawing regulatory attention to different declarations, based on an analysis of risk associated with those declarations. Where a Single Window is not implemented, the declarations are simply Customs declarations. However, in a Single Window, information required by all participating agencies for the regulatory clearance of goods is submitted at a single entry point. The common data requirements of various agencies are harmonized into a single integrated declaration, which may be submitted in different parts. Data received at the single entry point, i.e. at a single virtual address, is used to process the release and clearance of the goods. This arrangement offers an opportunity to all participating agencies to co-ordinate action in terms of inspection and controls based on risk.

The perception of what constitutes risk is different for each agency. However, the framework for managing risk is a common one and can be described with reference to the approach in ISO 31000:2009. This ISO standard comprises a set of high-level principles and guidelines on how to implement risk management in any organization. The framework is based on the ‘plan, do, check, act’ cycle. Planning what needs to be done, executing the plan, checking if the actions have helped achieve the goals, and acting in the identified areas for improvement in the subsequent cycles. This framework is not only useful for Customs, but has largely been adopted by all participating government agencies, as will be seen in the following analysis.

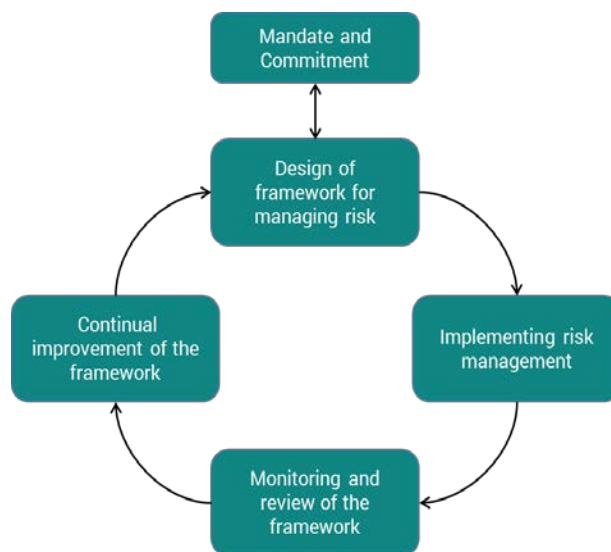


Figure 1: Risk management framework (Plan-Do-Check-Act) (Source: ISO 31000:2009, ‘Risk management – Principles and guidelines’).

The WCO Risk Management Compendium recommends the adoption of the framework described in this ISO standard, with Volume 1 of that Compendium describing the framework’s application in the Customs context.

The ISO 31000 series covers the following documents: ISO 31000:2009, ‘Risk management – Principles and guidelines’, IEC 31010:2009, ‘Risk management – Risk assessment techniques’, ISO Guide 73:2009, ‘Risk management – Vocabulary’, and Technical Report ISO/TR 31004:2013, ‘Risk management – Guidance for the implementation of ISO 31000’. Besides the framework, the ISO standard also describes the risk management process, which is also followed by the WCO Risk Management Compendium.

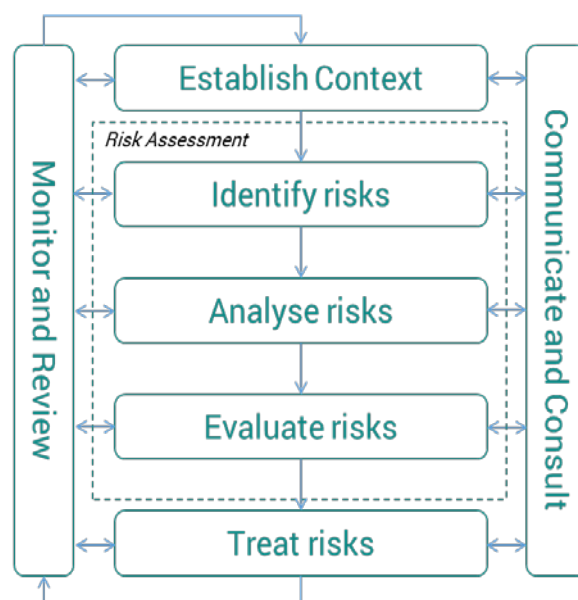


Figure 2: The ISO 31000:2009 risk management process.

Figure 2 illustrates the essence of the risk management process. Any systematic application of risk management will resemble this ISO-defined process. Early iterations of the same basic process have been adopted by different organizations, including the WTO. Article 5 of the WTO SPS Agreement states, “Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account **risk assessment techniques** developed by the relevant international organizations.” Figure 2 illustrates the three stages involved in risk assessment – **Identify risks**, **Analyse risks** and **Evaluate risks**. Another organization to have done so is the World Organization for Animal Health (OIE), the intergovernmental organization concerned with the improvement and protection of animal health globally. OIE has developed a framework that looks at the cross-border flow of animals and animal products from the perspective of preventing the spread of disease in animals. Importing countries face a degree of risk of disease and infection when animals and animal products are brought in. OIE recommends that the importing administration conduct import risk analysis in a transparent manner for the importation of animals, animal products, animal genetic material, feedstuffs, biological products and pathological material.



Figure 3: Framework of risk analysis used by OIE.

To summarize, the text box below provides different definitions of risk assessment adopted by international organizations associated with standards for import and export of food products and products of plant and animal origin.

Risk Assessment Definitions & Contexts

Risk assessment – the evaluation of the likelihood of the entry, establishment, or spread of a pest or disease ... and the associated potential biological and economic consequences ... (SPS Annex A)

'Risk Assessment: Risk assessment is the process of estimating , as objectively as possible , the probability that an importation would result in the entry of an exotic disease agent and that local livestock would be exposed to the agent. Risk assessment ought to examine the effect of the introduction of an exotic disease . Risk Assessment in the OIE context - MacDiarmid S.C. (1993)

Risk Assessment: A scientifically based process consisting of the following steps: (i) hazard identification, (ii) hazard characterization, (iii) exposure assessment, and (iv) risk characterization. (Codex Alimentarius – Definitions of Risk Analysis Terms-related to food safety)

Risk assessment: The process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it - (1997 IPPC)

For decades, Customs administrations have used the tools and techniques of risk management to determine areas of exposure to risk, and the allocation of the limited resources to effectively

manage these risks. In risk management, the technical terms are often used interchangeably and could potentially be a source of confusion. The WCO has developed a glossary of risk management, which serves as a controlled vocabulary. Some of the terms and definitions are listed in the text box below.

Controlled Vocabulary on Operational Risk Management

(Source: WCO Risk Management Compendium, Volume 1)

Risk: Effect of uncertainty on objectives.

Risk analysis: Systematic use of available information to determine how often defined risks may occur and the magnitude of their likely consequences.

Risk appetite: Amount and type of risk that an administration is willing to pursue or retain.

Risk assessment: Overall process of risk identification, risk analysis, risk evaluation and prioritization.

Risk evaluation and prioritization: Process of comparing the results of risk analysis with risk criteria to determine whether the risk and/or its magnitude is acceptable or tolerable.

Risk indicators: Specific criteria which, when taken together, serve as a practical tool to select and target movements that pose a risk of potential non-compliance with Customs laws.

Risk management: Co-ordinated activities by administrations to direct and control risk.

Risk management framework: Set of components that provide foundation and organizational arrangements for designing, implementing, monitoring, reviewing and continually improving risk management throughout the organization.

Risk management plan: Scheme within the risk management framework specifying the approach, management components and resources to be applied to the management of risk.

Risk management policy: Statement of an administration's overall intentions and direction regarding risk management.

Risk management process: Systematic application of management policies, procedures and practices to the activities of documenting, communicating, consulting, establishing the context, and identifying, analysing, evaluating, treating, monitoring and reviewing risk.

Risk owner: Person or entity with the accountability and authority to manage a risk.

Risk matrix: Tool for ranking and displaying risks by defining ranges for consequence and likelihood.

Risk profile: Description of any set of risks, including a predetermined combination of risk indicators, based on information which has been gathered, analysed and categorized.

Risk register: An organizational planning document identifying the administration's risks and allocating risks to risk owners.

Risk tolerance: An administration's or stakeholder's readiness to bear the risk after risk treatment, in order to achieve its objectives.

Risk treatment: Decision or action taken in response to an identified risk.

Targeting: The selection for examination/audit of a certain consignment, passenger, means of transport, transaction or entity based on risk analysis, profiling, document review, observation and questioning techniques.

2.1 The SPS Agreement and Risk Assessment

The Agreement on the Application of Sanitary and Phytosanitary Measures deals with the application of food safety, and animal and plant health regulations. Under Article 2 of the SPS Agreement, Members have the right to take sanitary and phytosanitary measures necessary for the protection of human, animal or plant life or health, which are not inconsistent with the Agreement's provisions. The measures should be based on scientific evidence, and not be arbitrary or discriminatory. The SPS Agreement defines risk assessment as:

The evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; or the evaluation of the potential adverse effects on human or animal health arising from the presence of additives, contaminants, toxins, or disease-causing organisms in food, beverages or foodstuffs.

The SPS Agreement does away with the need for risk assessment where the applied measures are based on international standards. This is because the international standards are themselves based on thorough risk assessment. Deviation from international standards is allowed, but must be supported by risk assessment.

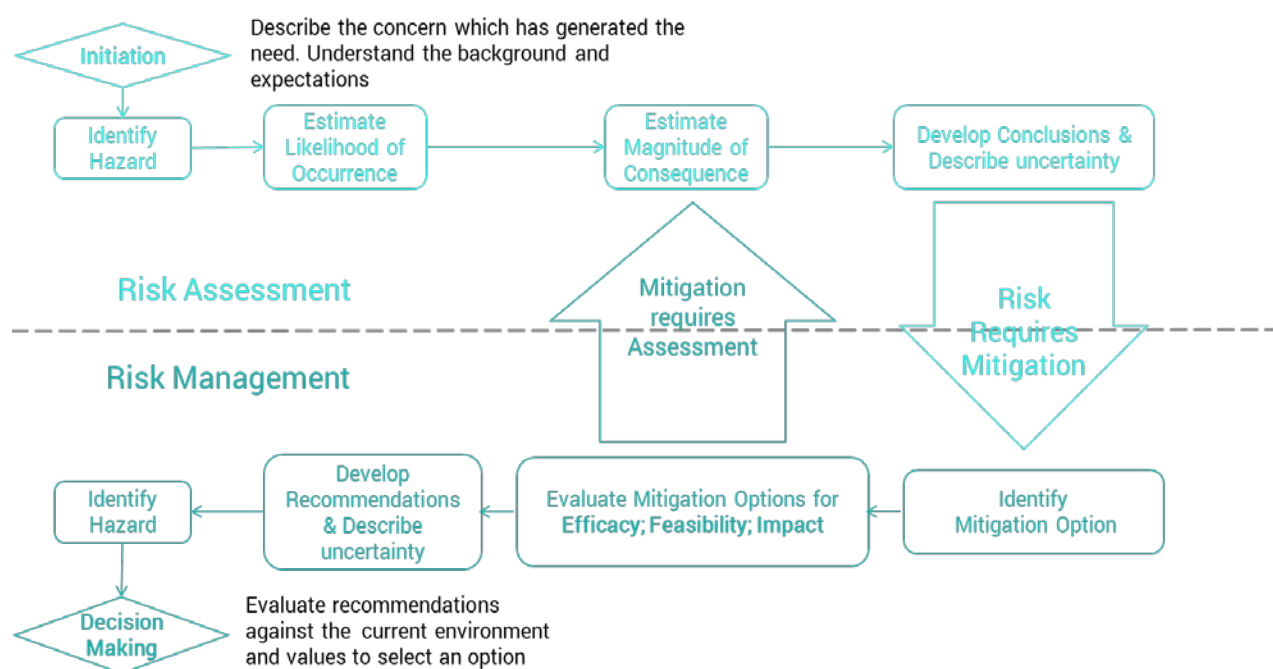


Figure 4: A process overview of risk analysis (Source: IPPC).

Under the SPS Agreement, where standards do not exist or are judged inappropriate, risk assessment is needed to provide the justification for applying control measures. The International Plant Protection Convention (IPPC) adopted standard guidelines for pest risk analysis (PRA) in 1995, along with the SPS Agreement. PRA is based on risk assessment and risk management. The decision to implement control measures is based on PRA. It is also vital to communicate the analysis to officials who make decisions on controls. PRA helps justify phytosanitary measures and is vital in the implementation of phytosanitary systems.

Risk Assessment: What does the WTO Trade Facilitation Agreement Say?

Article 7 of the WTO Trade Facilitation Agreement lays down that each Member shall, to the extent possible, adopt or maintain a risk management system for Customs control (paragraph 4.1 of Article 7). In designing and applying risk management, each Member shall avoid arbitrary or unjustifiable discrimination, or a disguised restriction on international trade (paragraph 4.2 of Article 7).

Paragraph 4.3 of Article 7 clearly indicates that the risk management system may be applied beyond the realm of Customs, and states: “Each Member shall concentrate Customs control and, to the extent possible other relevant border controls, on high-risk consignments and expedite the release of low-risk consignments. A Member also may select, on a random basis, consignments for such controls as part of its risk management.”

The practice of introducing selectivity criteria is also enshrined in the Agreement. Paragraph 4.4 of Article 7 even spells out some of the risk criteria: “Each Member shall base risk management on an assessment of risk through appropriate selectivity criteria. Such selectivity criteria may include, inter alia, the Harmonized System code, nature and description of the goods, country of origin, country from which the goods were shipped, value of the goods, compliance record of traders, and type of means of transport.”

The WTO Trade Facilitation Agreement recommends that the processes of release and clearance of goods be informed by a system of risk management. It clearly suggests that risk assessment may inform not just Customs clearance processes, but also other border agency controls.

2.2 Why Integrated Risk Assessment?

The WTO Trade Facilitation Agreement and the WTO SPS Agreement both align in supporting strategies for border control based on risk. The question is: Should risk assessment and management be disjointed, with each agency looking at risk separately – or should there be a more inclusive, co-ordinated process, resulting in convergence among border agencies when it comes to decisions on interdiction and selectivity?



Figure 5: Risk analysis framework (Source: Food Standards Australia New Zealand).

Risk assessment is a scientific process which is carried out on the basis of data and advance information. It is a systematic process, involving the identification of hazards and the formulation of a qualitative and quantitative assessment of risks. Mitigation steps are taken based on results of the assessment, scientific analysis of data received upon verification to enable authorities follow up actions. Risk assessment involves data, statistical analysis, qualitative judgment and inferencing, and should be viewed as part of the overall process of risk management.

Risk management, on the other hand, is a policy-driven process, involving different layers of administration. Risk management determines the overall levels of interdiction, risk thresholds, governance of selectivity criteria, the workflow processes to manage risk, performance metrics, and the risk management organization. This allows the risks involved in the import or export of goods to be handled in a very flexible manner between organizations participating in a Single Window. The scientific process of risk assessment and the development of risk-based selectivity criteria can be managed by the organization having the relevant expertise. Likewise, the decision-making process in relation to the application of risk-based techniques can be conducted by the agencies that have legal and administrative responsibilities. Independent of these processes, the chosen risk criteria and mitigating measures will be implemented separately in automated systems, such as the Single Window.

2.3 Commodities Attract Multiple Regulations

While Customs is concerned primarily with duties and taxes, it is also often responsible for a host of other regulatory requirements related to economic security, national security, public safety and health. Imported and exported commodities must meet different regulatory requirements. An imported item could be subject to control simultaneously by multiple agencies. Fresh fruits and vegetables are a case in point: producers and exporters must bear in mind the regulations in place in the importing country. Likewise, the regulatory authorities in the importing country should be able to assess the risks attaching to the importation of the produce. In some cases, the regulatory authorities in the exporting country also support compliance with regulations on export products through a compliance and quality assurance process.

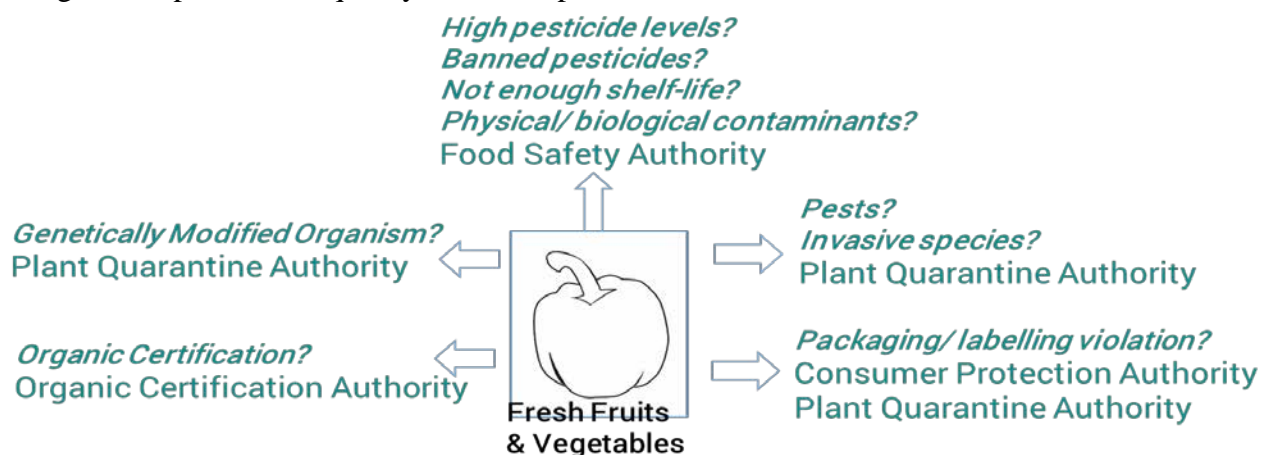


Figure 6 provides a glimpse of the number of risks and controls that could apply to fresh fruits and

Figure 6: Different regulations attaching to fresh fruits and vegetables, with risks indicated in italics.

vegetables. Application of these controls in a haphazard and uncoordinated fashion, with no regard to the overall process, will be detrimental to trade facilitation, as well as to the actual application by regulatory authorities. The Single Window environment provides an opportunity to ensure that the controls are applied in a manner that earns the confidence of businesses, participating government agencies and all other stakeholders.

The analytical process of risk assessment and development of risk criteria could be carried out in a distributed process by the respective agencies. However, the application of controls and actions to mitigate risks can be carried out in a co-ordinated manner. In a Single Window, all data and documents are submitted at a single entry point. This ensures the simultaneous availability of information to all participating agencies. In the absence of a Single Window, where multiple agencies open Windows to receive and process data, the function of risk-based interdiction is distributed. This requires the trader or his broker to approach different agencies and to wait for their individual responses. This splitting up of operations is avoided in a Single Window: as stated, all the regulatory data and documentation must be provided at a single entry point; in addition, there is the opportunity to assess risk and take mitigating action at a single entry point. The implementation of this concept allows all participating agencies to assess risk and identify consignments suspected to be in violation of regulations. Participating government agencies will thus be able to intervene and implement risk-based selectivity for physical inspection, documentary examination, and drawing of samples for testing.

2.4 Risk Management from Concept to Operations

In order for each participating agency to take advantage of the Single Window in managing risks, it must develop an overall concept of risk management at the organizational level. This will include a determination of organizational priorities and responsibilities in respect of risk. Managerial and decision-making roles must be established as part of the operational concept of risk management. The concept will cover surveillance to identify hazards and risks associated with different commodities. It will also include development of the capacity for producers and importers to understand compliance requirements (informed compliance). And it will further cover the implementation of selectivity for inspection, testing and verification of compliance of incoming and outgoing consignments. Selectivity criteria are developed based on a study of risk indicators.

2.5 Identification of Hazards and Risk Areas, and Assessment of Risk Levels

The objective of the risk management process is to identify hazards in terms of impact, assess levels of risk in terms of probability and impact, and then select and implement mitigating measures. During the entire process, there should be two-way communication and monitoring of the actions in that process and the organization implementing it.

The process of risk management begins with the identification of hazards and the risks associated with them. In a typical Customs environment, risks are understood in terms of the loss of revenue, and the smuggling of prohibited/restricted goods. The risks against which a Customs system will take preventive or mitigating action include loss of Customs revenue due to misdescription, under-

invoicing and over-invoicing, misdeclaration of quantity, and other types of misrepresentation. Traditional Customs violations, such as concealment to smuggle illicit goods, are also risks. Protection against dumping, supply of spurious goods, and goods infringing intellectual property rights, are also of concern for Customs. In a Single Window, however, participating government agencies are concerned about other types of risk. The table below provides examples of hazards and the associated risks.

Hazard	Type of Risk
Biological hazard	Risks to hygiene; risks of disease and infection.
Chemicals hazard	Risk to human, plant/ animal life and environment exposure
Radiological hazard	Risk of exposure to radiation; impact on health & safety
Product/Equipment hazard	Risk of electrical safety, noise, temperature etc
Communications equipment hazard	Risk of radio interference, electromagnetic radiation etc
Vehicle/road hazard	Risk to road safety, environmental pollution etc.
Machinery hazard	Risk to operational safety with machinery and hand tools.

Table 1: Hazards and associated risks.

These types of risk do not fall within the traditional scope of Customs action, but are matters for plant and animal health authorities, food safety authorities, and drugs/pharmaceutical control

Likelihood	Consequence				
	Insignificant Impact	Minor Impact	Moderate Impact	Major Impact	Critical Impact
Near Certain Occurrence	Medium	Medium	High	Extreme	Extreme
Likely Occurrence	Low	Medium	High	High	Extreme
Possible Occurrence	Low	Medium	High	High	Extreme
Unlikely Occurrence	Low	Low	Medium	Medium	High
Rare Occurrence	Low	Low	Low	Medium	Medium

authorities. Inspectors from each agency may not have a presence in all locations. Some agencies will therefore delegate to Customs the authority to inspect, or to take samples from, import and export goods. (Volume 1 of the Risk Management Compendium describes techniques on risk likelihood, consequence/impact and tolerance ratings, and provides several illustrations.)

Table 2: Likelihood scale.

Identification of hazards is followed by risk assessment, which is a scientific process involving qualitative and quantitative factors. The analysis involves an assessment of probability and impact. Here, probability is an *a priori* determination, based on the analysis of past data. The level of risk is assessed based on a combination of probability and impact. The level of risk will in turn help determine the nature of the mitigating action that needs to be taken to deal with it. Table 3 provides an example of risk mitigating strategies for

Risk Level	What does it mean?	How to respond?
Low	If consumers are exposed to this product there is very little probability of any harm to health or safety	Existing controls suffice
Medium	If consumers were exposed to this product, there would be some probability of harm to health and/or safety. .	Consider additional preventive controls
High	If consumers are exposed to this product, there would definitely become risk to health and safety of the consumers	Additional controls would be necessary starting at the origin of the product going down the supply chain
Extreme	If consumers are exposed to this product, there would certainly be irreversible, debilitating or catastrophic consequences to life	Immediate and pervasive measures to contain and eliminate the threat at the origin

Table 3: Risk mitigating strategies for different levels of risk.

different levels of risk.

The example in Table 3 relates to the risk to consumers from the use of a product. The matrix of probability (likelihood) and impact gives rise to risk levels. Each risk level has a corresponding preemptive, preventive and mitigating response.

2.6 Agency Response to Risk

In light of the risk levels for the importation/exportation of commodities, regulatory authorities calibrate their responses to counter those risks. The types of response can be made by the regulatory authorities, but also by businesses themselves through self-regulation. The following table presents a range of responses that it is possible to roll out when implementing a Single Window environment.

	Risk Mitigation Strategy	Regulatory Activity
Educative Strategy ↑	Prompt publication	Regulatory agency publishes regulatory requirements promptly, communicates with industry stakeholders regularly and keeps communication up-to-date.
	Industry Partnership	Government- Business joint programs Training & Guidance on product regulations
	Manufacturer Accreditation	Government and businesses(manufacturer/producer) join hands to carry out inspection to promote compliance
	Importer Self-assessment	Importer self assesses product risk and applies to regulatory authority for a low-risk categorization
	Import prioritization	Importer provides data and samples on proposed items for priority/expedited testing
	Product /Type Approval	Importers obtain certification for product pre-approval with regulatory agencies. Import would not be permitted for those types not approved.
	Laboratory Certification	Regulatory authority permits import based on testing and/or Certification by an internationally accredited body approved by the regulatory agency
	Import Permitting	Regulatory agency requires importers to apply for a permit for the import of a commodity requiring inspection and/or testing. The permits issued may contain conditions including testing at source.
	Withholding release	Regulatory authority withholds release pending the furnishing of additional information/ documentation about the product.
	Sampling and detention	Regulatory authority draws samples of products and detains consignment until product is proven to be compliant
↓ Coercive Strategy	Random testing	Regulatory authorities interdict consignments to test products randomly. A higher percentage of consignments may be selected where items are high-risk.
	Port & Route restriction	Regulatory authorities mitigate risks by restricting products to be imported by specified ports or navigational routes;
	Product Licensing	Regulatory authority issues licenses a product under which only the product of a specified kind and quantity are permitted.
	Conditional Release	Consignment is delivered from Customs control under bond to importer's custody. Products will not be used until the regulator approves for use. It will be redelivered into regulatory control, if the product fails testing or other conditions of release.
	Sanitization-fumigation	Imported product is subject to appropriate processing or treatment that minimizes or eliminates risks.
	Reconditioning/rectification	Regulatory authority requires importer to take corrective action voluntarily. Corrective action applies to only rectifiable defects or violations.
	Rejecting consignment	Regulatory authority determines that the import of a product(or the imported product) is not in conformity regulatory standards/ specifications or attract prohibition
	Re-export products	Regulatory authority orders re-export of products refused admission with or without fine/penalty
	Destruction	Regulatory authority orders destruction of products refused admission with or without fine/penalty

Table 4: Regulatory authorities risks response types.

Each of the above risk mitigation strategies has implications for a Single Window environment. As a minimum, each participating agency must:

- (i) Adopt policies based on the principles of risk management.
- (ii) Establish a lead office for risk. All agencies should maintain a central risk register, and maintain and use data on compliance history.

- (iii) Establish functional roles in respect of risk assessment; appoint officers to the risk management function and communicate with the organization responsible for risk management.
- (iv) Proactively publish the list of requirements, with a view to educating industry on regulatory requirements and mitigating risks.
- (v) Adopt pre-approval processes for the certification of products and product facilities to reduce risks.
- (vi) Adopt a system of licensing and permitting for controlled commodities, along with regimes of inspection to mitigate risks.
- (vii) Rely on a system of selective inspection and testing, instead of routine selection of all consignments for examination, testing and referral.

In real time, risk-based selectivity becomes an important aspect. If participating agencies routinely refer consignments for testing, this will reduce levels of facilitation and defeat the main purpose of the Single Window. All participating agencies must spell out, in the necessary detail (within the Single Window administrator), their respective risk-based criteria. Such criteria may include: recommended indicators for referrals; levels of sampling for testing different categories of items; delegation of authority regarding the drawing of samples; periodicity for drawing samples; key risk indicators; percentage selection for physical examination; label checking; and norms for documentary examination.

2.7 Targeting and Risk Assessment Centres – a CBM Perspective

Targeting and risk assessment centres can contribute to integrated risk assessment. Such centres embody the operational concept of inter-agency co-operation in the context of co-ordinated border management (CBM).

Several countries have established targeting and risk assessment centres to promote closer interaction between specific risk management and intelligence personnel from multiple disciplines and agencies. The WCO Risk Management Compendium (Volume 1) briefly discusses this topic, pointing out that there are different organizational models for operating a risk assessment/targeting centre: some are centralized, whilst others are decentralized or hybrid; some are focused on security and protection against terrorism, whilst others are more focused on regulatory compliance.

Regardless of the model, targeting centres depend on the centralization of sources of information, and the availability of advance information. Whilst the WCO study on these types of facilities reveals that there is no ‘one size fits all’ solution, there are nonetheless common themes, including: centralized management of selectivity and targeting criteria; control over information sources and systems; round-the-clock operations; capacity to co-ordinate with field officers and operations; real-time action on risk; active hotlist tracking; and the provision of a feedback loop on the results of action based on targeting. With the presence of key resources from all participating agencies, targeting centres provide a platform for co-ordinated border management.

Targeting centres help manage centrally all systems of selectivity across multiple agencies. Such management would not be possible without close co-operation and co-ordination between agencies. When the selected targets result in a ‘hit’, the centres can quickly decide on how to deal with it, by rapidly dispatching the required information to frontline staff regarding the nature of required intervention. Targeting and risk assessment centres also act as hubs for exchange of information on alerts, lookouts and offenders. This helps move information rapidly into the selectivity system and also to the field offices. Volume 1 of the WCO Risk Management Compendium suggests that, in many countries, Customs have invited other border agencies to work in the centre. Targeting and risk assessment centres can greatly contribute to the successful implementation of integrated risk assessment in the context of a Single Window.

3. Case Studies

There are considerable gains to be derived from following a system of integrated risk assessment. These are discussed in the case study by the Korea Customs Service, ‘Integrated Risk Management System’, which has been published in Volume 1 of the WCO Risk Management Compendium. Furthermore, the Customs Administration of Mauritius has contributed a paper on risk assessment in the context of a Single Window. The case study below is based on that paper.

An integrated Risk Management Platform Leveraged on Single Window (SW) Infrastructure for Co-ordinated Border Controls¹

1. Customs administrations are playing a major role in promoting trade facilitation, as well as enforcing effective control over the movement of people, goods and conveyances. An integrated and holistic risk management approach has been recommended in the WCO Risk Management Compendium, with a view to ensuring co-ordinated border controls, allowing effective allocation of resources, and targeting of high-risk consignments/passengers. In turn, this should expedite clearance of low-risk consignments and genuine passengers/traders.
2. With the advent of the Single Window concept, Customs and other government agencies (OGAs) have been brought together to work on a single platform/architecture, underlying the need for effective communication, increased collaboration and co-ordinated interventions to keep the balance between trade facilitation and border control. Before the inclusion of OGAs in the Single Window architecture, Mauritius Customs was implementing its own risk management approach, embedded in its national Customs system, called the Customs Management System (CMS).

¹ A paper by Anoushka Permalloo, Mauritius Customs, presented to the WCO Information Management Sub-Committee in June 2013. This case study is based on that paper.

3. Based on internal risk parameters, Customs routes traders' (import, export, transit) declarations to three different channels: the Green Channel, the Yellow Channel and the Red Channel. Green Channel declarations relate to consignments involving no risk/low-risk criteria, implying clearance from Customs within 30 minutes. Yellow Channel declarations relate to consignments requiring documentary evidence or involving queries, as determined by Customs. These declarations could be cleared within one hour. Red Channel declarations involve mandatory sending to examination bays because of the high-risk indicator settings hit. Red Channel declarations could be cleared within three hours to one day, depending on the nature of consignment inspection.
4. At a later stage, with the arrival of the Authorized Economic Operator (AEO) concept recommended in the WCO SAFE Framework of Standards, the Blue Channel was introduced for automatic clearance of consignments for authorized operators. This involves faster Customs clearance, based on a trusted relationship with economic operators, and their proven compliance. The channel distribution and related treatment are depicted in Figure 7 below.



Figure 7: Channel distribution and related treatment.

*Note: BOE = Bill of Entry (goods declaration)
COR = Customs Offence Report

5. The Single Window architecture is based on one-time submission of electronic trade data from a single point of entry in real time. 'One-time' submission implies that data submitted will be incrementally used as one moves through the process workflow in the Single Window. OGAs included in the existing Single Window architecture for electronic licence/permit approvals must comply with best practice in terms of Customs risk

management and the AEO concept, through risk intelligence exchange. The SW architecture for the Mauritius national Single Window is shown below.

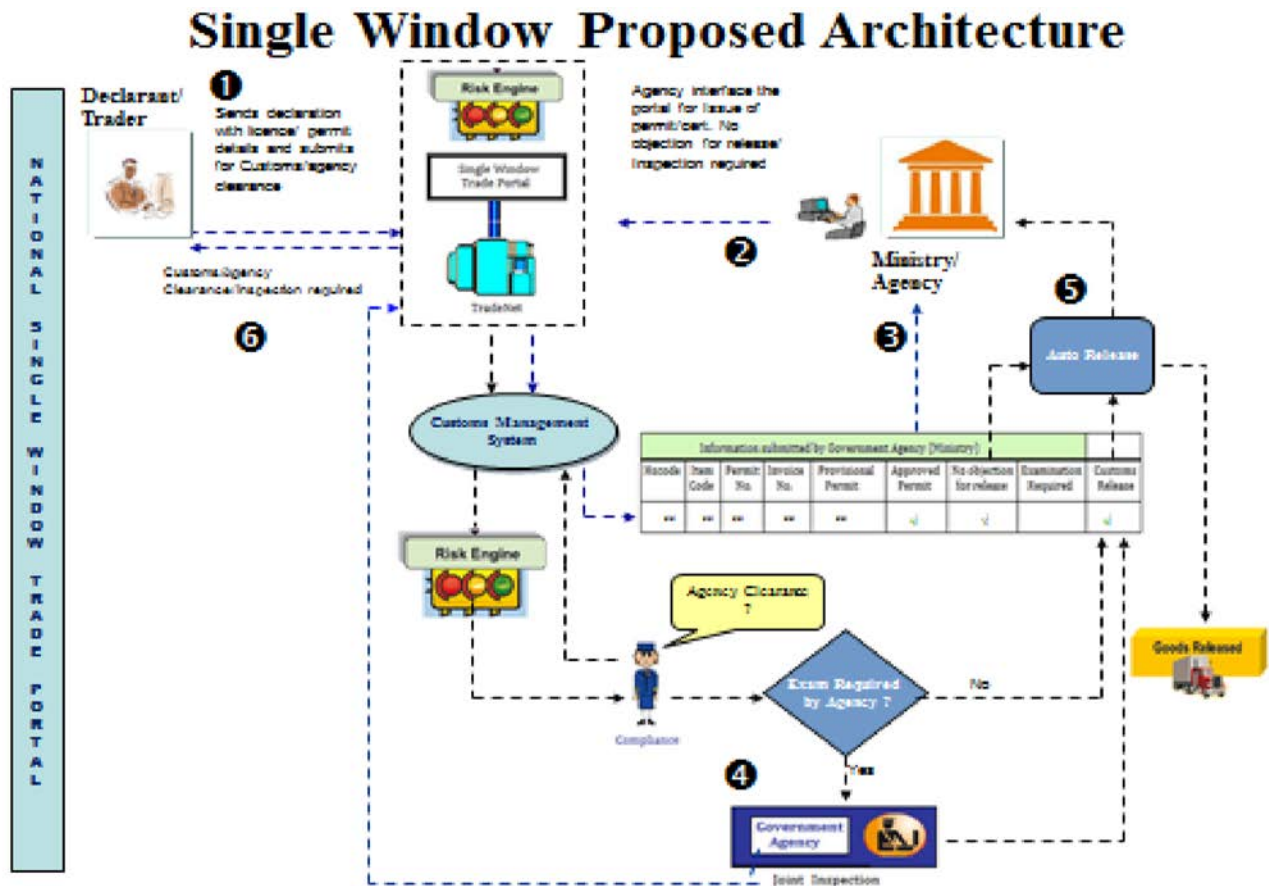


Figure 8: Single Window Architecture.

6. In order to provide low-cost implementation of the Single Window, a web portal has been chosen to allow increased flexibility and efficiency of processes, and the plugging in of future OGA workflows. The one-time submission of goods declarations and licence/permit applications is effected by a declarant/authorized trader from a single point of entry, which is the Single Window portal. As one moves through the process embedded in the Single Window workflows, data is incrementally provided, without the need for the declarant/trader to enter the same data repeatedly in the logic of business processes, covering OGA clearance in its entirety.
7. Both OGAs and Customs will have independent risk parameter settings to ensure the confidential treatment and independent consignment hits of agencies. The risk engine for OGAs will process the data entered and provide alerts to the respective agencies, based on individual risk settings. Possible fields of concern include country of origin of consignments/products, commodity code, supplier identifier, importer identifier, exporter identifier, Customs regime for transaction, country of intermediary destination (transit),

port of landing, and manifest details (e.g. vessel name, flight number, voyage number, bill of lading number, container number).

8. OGAs may decide on an internal logic for determining the degree of risk of a submission. Risk will be classified into three categories: low, medium, and high. Each category will be attached to a set of predefined workflows in the Single Window. Once submission goes through the OGA risk engine, the agency will be alerted to the degree of risk pertaining to the goods declaration submitted. Probable scenarios for OGAs are listed below:

Risk category	Risk Settings	Treatment
LOW	Highly compliant Importer/ Country of Origin/ low risk commodity code	Agency clearance granted
MEDIUM	Country of Origin under monitoring	Agency clearance may be granted if documentary evidence in order
HIGH	Highly non-compliant importer/ country of origin, dangerous commodity, risk of contamination	Request for Consignment Inspection to Customs Authority

Table 6: Treatment for risk categories.

9. If an application has been hit by a high risk parameter setting, the OGA will be alerted on the SW portal with parameters for which the consignment was selected. The agency will electronically send an inspection instruction to Customs through the Single Window, into the linked Customs Management System. It should be noted that a consignment may be hit by multiple agencies' risk settings in cases where an application involves the approval of multiple agencies for clearance or for the issue of permits/licences. Under current legislation, any inspection needs to be carried out in the presence of the trader or his authorized representative (broker). Consequently, mutual agreement needs to be reached by Customs, the agency and the trader/broker to call at an examination bay for the physical inspection. The request for an appointment may be electronically triggered through the Single Window portal by the trader/declarant who will be informing agencies and Customs about the consignment's arrival/departure. The SW electronic platform may be extended to automatic allocation of examination slots at regular time intervals.
10. The consignment will be inspected jointly by Customs and the OGA(s) concerned, thus eliminating several distinct inspections, and enforcing co-ordinated border control. Due to the harmonized business processes and data elements encompassed in a Single Window, standard messaging will be enabled for different exchanges of information/consignment statuses, including G2G, G2B, B2B (for linkage between a cargo community system and trader/declarant) and B2G. The trader/declarant will thus be kept informed electronically about agency clearance, Customs clearance and inspection requests, where applicable. As recommended by the WCO SAFE Framework of Standards, more than one solution may be used for data exchanges, which can include international standards such as XML, UN/EDIFACT, or email. The trader/declarant may be informed of consignment status through either email notifications or through the portal.

11. The second risk engine (that located at Customs level) will be solely for Customs control, and agencies will have no visibility on the same, unless required under legislation for criminal investigations. Once an application has gone through the OGA risk engine, it will be routed to the engine embedded in the Customs system, where the routine of selectivity will be triggered to alert Customs about the channel for treatment (Green, Yellow, Red or Blue Channel). The scenarios below are highlighted to better illustrate co-ordination.

Agency Risk Settings	Customs Risk Settings	Treatment
None	Hit to Red Channel	Customs carrying out examination
Hit to High Risk	None	Agency/Agencies request for Inspection to Customs for joint/coordinated inspection
Hit to High Risk	Hit to Red Channel	Agency/Agencies request for Inspection to Customs and all CBRAs perform joint/coordinated inspection

Table 7: Joint/co-ordinated interventions.

12. The outcome of an effective risk management approach also results in promotion of voluntary compliance by traders. The AEO programme, whereby recognized traders benefit from fast-track cargo delivery, is another Customs best practice which can be applied at OGA level. As per the compliance management model in the WCO Risk Management Compendium, a high risk level is associated with highly non-compliant clients. This is shown in the table below.

	<div> <div>LOW</div> <div>RISK LEVEL</div> <div>HIGHT</div> </div>			
Client Categories	Voluntary compliance People who want to comply	Assisted compliance People who try to comply, but don't always succeed	Directed compliance People who will avoid complying if they can	Enforced compliance People who deliberately do not comply
Client Behaviours	<ul style="list-style-type: none"> Voluntary compliance Informed clients 	<ul style="list-style-type: none"> Attempting to comply Uninformed clients 	<ul style="list-style-type: none"> Resistance to compliance Will avoid if possible 	<ul style="list-style-type: none"> Criminal intent Illegal activity

Table 8: Compliance management model.

13. Risk parameters for AEOs will be set by OGAs, such that their agency clearance process is expedited, with examination excluded unless high-risk cargo criteria are hit. The holistic risk management approach will thus provide incentives for trader compliance, and effectively and efficiently detect and punish non-compliance.
14. A legal framework needs to be established to cater for the SW processes flow. Legal issues to be handled for a co-ordinated risk compliance approach for CBRAs include:

- The electronic movement of information between CBRAs, which should be prescribed in relevant legislation. A single electronic submission of data legislation may be applied for all the CBRAs;
- The legal liabilities and obligations of agencies in relation to data handling;
- The legal liabilities and obligations of the service provider in relation to data handling, data confidentiality, the helpdesk and maintenance of the system; data privacy and information transparency; and submission of electronic documents as part of the SW process;
- Legal definition of the liability of third parties in relation to their ability to use and exchange data;
- Action of checking declarations, confirmation of verifications and legally valid notifications arrived at by CBRAs;
- Binding agreement on the service levels to be achieved across the different business processes of CBRAs;
- Legal amendments to cater for fast-track clearance for authorized economic operators;
- Government Management Entity, to be mandated by national legislation, to manage any changes to be introduced in the risk management module of the Single Window; and
- Any conflicting issues relating to co-ordination among CBRAs.

Conclusion

Integration of the risk management platform in a country's Single Window architecture is of critical importance to enforce both trade facilitation, and effective and co-ordinated border control assisted by standardized information, advance receipt of cargo information for risk management, and standardized data exchange, leading to efficient real-time communication and joint interventions. As part of this, the national Single Window will apply international standards for joint interventions by CBRAs, and expedite clearance for compliant traders, with the aim of promoting trade facilitation and voluntary compliance by traders.