## UNECE

# Pandemic Crisis Trade-Related Response





## **United Nations Economic Commission for Europe**

United Nations Centre for Trade Facilitation and Electronic Business

# Recommendation No. 47: Pandemic Crisis Trade-Related Response



#### © 2022 United Nations

This work is available open access by complying with the Creative Commons license created for inter-governmental organizations, available at: http://creativecommons.org/licenses/by/3.03/igo/

Publishers must remove the UN emblem from their edition and create a new cover design. Translations must bear the following disclaimer: "The present work is an unofficial translation for which the publisher accepts full responsibility." Publishers should email the file of their edition to permissions@un.org

Mention of specific names and commercial products and services does not imply the endorsement of the United Nations.

The designations employed and the presentation of the material in this publication are the responsibility of the authors and do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning any form of endorsement including that of the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The use of the publication for any commercial purposes, including resale, is prohibited, unless permission is first obtained from the UNECE secretariat. Request for permission should state the purpose and the extent of the reproduction. For non-commercial purposes, all material in this publication may be freely quoted or reprinted, but acknowledgement is required, together with a copy of the publication containing the quote or reprint.

Photocopies and reproductions of excerpts are allowed with proper credits.

This publication is issued in English, French and Russian.

United Nations publication issued by the United Nations Economic Commission for Europe.

ECE/TRADE/469

eISBN 978-92-1-001318-5

#### **Foreword**

The COVID-19 pandemic has revealed the challenges of facing a health crisis and its impact on society. In an effort to slow down and ultimately stop the spread of the disease, many countries have instituted lockdowns, restrictions on movement, curfews, additional sanitary measures, among others. However, such measures have negatively impacted the global economy.

The disruptions caused by the COVID-19 pandemic left a lasting scar on the global economy. The World Trade Organization reported that in 2020 the value of global trade in goods and services in nominal dollar terms fell by 9.6 per cent. Such gloomy scenarios are the result of an overall decrease in investment flows, an erosion of human capital through lost work and schooling, and a fragmentation of global trade and supply linkages.

There are ways to ensure that trade can continue to flow despite such a pandemic. For example, an increased use of electronic information exchange through internationally agreed upon e-business standards can reduce, and in some cases eliminate, human contact, while allowing smoother trade flows. Consultation with all stakeholders, from both the public and private sectors, can also help achieve mutually agreeable solutions; this could be achieved through National Trade Facilitation Bodies.

In an effort to ensure that global supply chains remain functional despite the pandemic, the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) has developed this Recommendation to outline measures to mitigate the adverse impact of the pandemic on trade flows. Recommendation N°47 has been developed in partnership with several international organizations from both the public and private sectors. It has also benefitted from the experience and input of several United Nations agencies, including the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the United Nations Conference on Trade and Development (UNCTAD), the International Trade Centre (ITC) and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

This Recommendation is part of a larger effort within the United Nations Economic Commission for Europe (UNECE) to assist countries in containing and mitigating the effects of the COVID-19 pandemic, with the three pillars of: facilitating connectivity, addressing transboundary and other risks, and promoting a resilient, sustainable and inclusive recovery. Among others, UNECE's COVID-19 response includes a series of reports on the pandemic's impact on trade, with the findings of these studies relating in many ways to the guidance provided in this document. Moreover, additional electronic business standards have been developed to help countries and companies with their efforts to dematerialize their cross-border data exchange. A platform has been created to allow national statistical offices to share their data on COVID-19 responses. Statistics have been compiled and shared on the impact of this pandemic on transport.

As the situation evolves, the UNECE secretariat will be monitoring the effectiveness of the measures proposed in this Recommendation through the UN Global Survey on Digital and Sustainable Trade Facilitation. In the meantime, I invite all concerned actors to make effective use of this and other UNECE resources.

Olga Algayerova

United Nations Under-Secretary-General Executive Secretary of the United Nations Economic Commission for Europe

#### Note

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

# The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

#### Simple, Transparent and Effective Processes for Global Commerce

UN/CEFACT's mission is to improve the ability of business, trade and administrative organizations, from developed, developing and transitional economies, to exchange products and relevant services effectively. Its principal focus is on facilitating national and international transactions, through the simplification and harmonization of processes, procedures and information flows, and so contribute to the growth of global commerce.

Participation in UN/CEFACT is open to experts from United Nations Member States, Intergovernmental Organizations and Non-Governmental Organizations recognised by the United Nations Economic and Social Council (ECOSOC). Through this participation of government and business representatives from around the world, UN/CEFACT has developed a range of trade facilitation and e-business standards, recommendations and tools that are approved within a broad intergovernmental process and implemented globally.

UN/CEFACT is committed to ensuring that the gender dimension is reflected in norms, roles, procedures, and access to resources. Government and trade are encouraged to promote equal opportunities for women and men within the scope of Trade Facilitation activities. UN/CEFACT specifically encourages the collection, analysis, and monitoring of gender disaggregated data in order to better understand and support women's engagement in international trade and transport facilitation.

This Recommendation encourages governments, business communities, development partners, international organizations, and other policymakers to follow UN/CEFACT's commitment to ensure inclusiveness for women.

## **Contents**

Pages

FO	REW	ORD	······	Ш	
I.	REC	СОМ	MENDATION NO.47: PANDEMIC CRISIS TRADE-RELATED RESPONSE	. 1	
	A.	INT	RODUCTION	. 1	
	В.	PUI	RPOSE AND SCOPE	. 1	
	C.	BEN	NEFITS	. 2	
	D.	INT	ERNATIONAL STANDARDS	. 2	
	E.	REC	COMMENDATION	. 2	
II.			INES TO RECOMMENDATION NO. 47: PANDEMIC CRISIS TRADE-RELATED	. 3	
	A.	INT	RODUCTION	. 3	
	В.	SCC	DPE	. 3	
	C.	C. COMPLEXITY OF PANDEMICS			
		1. 2. 3. 4.	DEFINITION	. 4 . 6	
	D.	GU	IDELINES TO FACILITATE PANDEMIC RELIEF	. 7	
		1. 2.	COLLABORATION REQUIRED		
	E.	USI	E OF TECHNOLOGIES	16	
		<ol> <li>2.</li> <li>3.</li> <li>4.</li> </ol>	IMPORTANCE OF SYSTEM-TO-SYSTEM EXCHANGES  (REMOVING/REDUCING HUMAN CONTACT)	17 18	
	F.	CO	NCLUSIONS	19	

# I. Recommendation No.47: Pandemic Crisis Trade-Related Response

#### A. Introduction

1. In addition to devastating human losses and suffering, during 2020 the COVID-19 pandemic has had a profound impact on the global economy and economic operators across international value chains. Not only is the pandemic creating shockwaves in both demand and supply, but it is also disrupting trade linkages and the movement and release of goods between countries. Faced with the pandemic, some public authorities are tending to increase controls on imports to prevent the virus from spreading. They are also imposing export restrictions on essential goods for national health and food security reasons. Bottlenecks and delays at the border may emerge due to a lack of clarity, guidelines or prescriptions for emergency cross-border formalities and/or insufficient capacity of border regulatory agencies to apply and enforce expedited controls to release priority consignments during a pandemic.

#### B. Purpose and scope

- 2. This recommendation provides guidance on the trade-related measures to be considered during a pandemic crisis. Developing and installing a framework of standard operating procedures during a pandemic crisis can help to facilitate effective and efficient border controls. Ultimately, it can help facilitate the continued compliance with regulations while expediting the movement of essential goods. This recommendation aims to do the following things:
  - It aims to highlight to governments the necessity of adopting specific measures in order to facilitate and expedite joint controls of goods thus easing cross-border trade flows during, and in the aftermath of, a global health crisis. Such measures can also help governments deliver the United Nations 2030 Agenda for Sustainable Development, particularly the Sustainable Development Goal (SDG) 8 pertaining to decent work and economic growth; SDG 11 which prescribes integrated policies that build resilience of communities, as well as SDG 17, which contributes to the growth of exports of developing countries. In particular, the implementation of such measures will also contribute to the compliance of World Trade Organization (WTO) member States with the Trade Facilitation Agreement (TFA);
  - It aims to highlight the importance and relevance of this work to a wider range of stakeholders including the private sector, regulatory bodies and non-government organizations.

#### C. Benefits

- 3. Facilitating and expediting the cross-border movement of goods is critical for two reasons:
  - First, in the short term, it will ensure rapid international distribution of essential goods such as medical equipment and food products during a health crisis;
  - Second, in the intermediate term, it will mitigate the impact of pandemic-driven disruption on global economic activity and the cross-border movement of goods by reducing disruptions to the supply and consumption of goods.

#### D. International standards

4. The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) has developed several key concepts such as Single Window, National Trade Facilitation Bodies and Single Submission Portals, which are presented in this document and are the subject of other UNECE recommendations. Additionally, UN/CEFACT has developed a series of e-business standards to harmonize and streamline exchanges which can be instrumental in responding to a pandemic crisis. Whenever possible, it is recommended that international standards be used, notably those that are available free of charge and that are the result of a robust, inclusive development process, like those of UN/CEFACT.

#### E. Recommendation

- 5. In light of the above, UN/CEFACT at its twenty-seventh session in April 2021, recommends the following when implementing a response to a pandemic:
  - a) Governments should take into consideration trade-related aspects as outlined in the guidelines of this recommendation;
  - (b) Authorities should put in place standard operating procedures specific to a pandemic crisis;
  - (c) All actors involved in trade both from the public and private sectors should become involved in the trade-related responses to a pandemic (this could be done through a National Trade Facilitation Body); and
  - (d) All actors should use technology to reduce the spread of the pandemic while allowing economic activity to continue.

## II. Guidelines to Recommendation No. 47: Pandemic Crisis Trade-Related Response

#### A. Introduction

6. In the future, the year 2020 will be remembered for the COVID-19 pandemic and its related consequences. This may lead to a new normal way of working; but in the meantime, such pandemics could lead to major disruptions in trade flows and damage the overall economic performance of countries. There are measures which can be put into place to reduce this impact and allow trade to continue.

#### B. Scope

- 7. This recommendation aims to provide clear, accessible, and concise best practice guidelines to enable efficient control, clearance, and release measures, and outlines standard operating measures for pandemic situations. The objective is to provide a vision of what best practice looks like. This recommendation does not aim to be a list of legal obligations.
- 8. This recommendation concentrates on the trade-related aspects of pandemic situations from the point of view of the public and private sectors. The content of this recommendation can also apply to epidemics, which are confined to a country, territory, or region.

#### C. Complexity of pandemics

#### 1. Definition

- 9. A pandemic is the global outbreak of a disease. It is generally classified as an epidemic first, which is the rapid spread of a disease across a particular region or regions. This normally implies a sudden spread, leading to high mortality rates in certain cases.
- 10. The World Health Organization (WHO) defines a pandemic as "the worldwide spread of a new disease"<sup>1</sup>, citing the example of a pandemic involving a new strain of influenza for which there is no immunity just as we have seen with COVID-19 in 2020. Once an epidemic has spread to at least three WHO regions, it is called a pandemic.
- 11. The WHO is responsible for the announcement of a new pandemic based on how the disease spreads. There are six phases of an outbreak, defined as follows:
  - Phase 1: No viruses circulating among animals have been reported to cause infections in humans.
  - Phase 2: An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a specific potential pandemic threat.

World Health Organization, "What is a pandemic?", 24 February 2010. Available at: <a href="https://www.who.int/csr/disease/swineflu/frequently/asked/questions/pandemic/en/">https://www.who.int/csr/disease/swineflu/frequently/asked/questions/pandemic/en/</a>

- Phase 3: An animal or human-animal influenza reassortant virus<sup>2</sup> has caused sporadic cases or small clusters of disease in people but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks.
- Phase 4: Human-to-human transmission of an animal or human-animal influenza reassortant virus able to sustain community-level outbreaks has been verified.
   The WHO classifies this phase as medium to high risk and requires rapid containment and readiness for pandemic response.
- Phase 5: The identified virus has caused sustained community-level outbreaks in at least two countries in one WHO region. Pandemic response: each country implements actions according to their national plans.
- Phase 6: In addition to the criteria defined in Phase 5, the same virus has caused sustained community-level outbreaks in at least one other country in another WHO region. The response to such a pandemic should be based on readiness plans, each country implementing actions as called for in their national plans.
- 12. The first three phases are classified as a period of uncertainty and, as such, much of the reporting and management of actions rests on national governments, who are to ensure proper communication and provide updates on the situation.
- 13. It is recommended that all trade bodies and associations remain abreast of developments to ensure adequate preparation as a means of maintaining the smooth flow of goods and services in the event that a phase four ensues. It is of critical importance that major points of entry and global value chains are kept open to avert delays in finding suitable remedies for the pandemic.
- 14. Beyond these first three phases, international coordination of trade rules and procedures is needed. As countries enter the different phases of the pandemic at different times, the responses of individual governments may diverge. This can lead to severe trade disruptions and dislocations which can in turn impede efforts to contain effectively the pandemic.

#### 2. Trade-related impacts of pandemic response

- 15. Measures adopted by Governments can have a varying level of impact on economic activities and trade: from minor disruptions to a nearly complete breakdown of supply chains. The trade-related impact can be quite severe not only to the region but also to the global economic landscape.
  - A shutdown or lockdown of business-related activities as a means of preservation of lives often results in a reduction in manufacturing and production;
  - Restrictions on the movement of people and goods and strict lockdown measures
    intended to contain the spread of the infectious disease can have an extremely
    negative impact on trade and transport, disrupting value chains. The movement
    of goods and resources is essential to the production and manufacturing process.
    Many companies rely on just-in-time processes to manage cashflow and maintain

The English Oxford Dictionary states that a reassortant virus has a "genome consisting of parts derived from the genomes of two (or more) different viruses, as a result of reassortment during mixed infection of the same host or cell." See: https://www.lexico.com/definition/reassortant

- overall resource efficiency. This is impacted by any form of interruption in how and when goods can move;<sup>3</sup>
- Requirements to test people or goods, to quarantine, or to perform sanitary fumigations can provide assurances for governments during a pandemic; but new procedures and documentation requirements (certificates) can also create disruptions in trade;
- The implementation of export restrictions on certain products is a measure sometimes used by governments to ensure that essential resources (medication, personal protective gear, raw materials, etc.) are reserved for internal markets. This can hinder the free flow of goods and disrupt orders that were placed prior to the restrictions. It should be compliant with previous agreements made by the government (e.g. multilateral, bilateral or regional trade obligations).

#### Box 1: Impact of the 2020 COVID-19 crisis

The United Nations Industrial Development Organisation (UNIDO) used data from its Index of Industrial Production (IIP), to analysis "...49 countries representing around 87 per cent of world manufacturing value added (MVA). A comparison of IIP data (adjusted to take seasonal effects into account) for March 2020 vs December 2019 shows that approximately 81 per cent of countries have experienced a decrease in industrial production of 6 per cent on average. A comparison of data for April 2020 vs December 2019 reveals that industrial production fell by 20 per cent on average in 93 per cent of countries."

While reduction in production and manufacturing might be the general trend, there are nations and industry sectors that will, nonetheless, make some gains. It is expected that information technology, pharma, food and drink and other essential sectors will be among these.

Source: UNIDO, https://www.unido.org/stories/coronavirus-economic-impact-10-july-2020

In the last four decades, much of the manufacturing and production worldwide has been incorporated into global value chains (GVCs) involving multiple countries and regions. See UNECE survey-based assessments "The impact of COVID-19 on trade and structural transformation: Evidence from UNECE's survey of micro, small and medium sized enterprises" in Belarus, Armenia, Georgia, Moldova and Serbia, available at: https://unece.org/trade/studies-regulatory-and-procedural-barriers-trade.

#### 3. Key supplies

- 16. A pandemic can have a direct or indirect effect on various supplies and services worldwide. As long as there is limited knowledge about the disease, it can be difficult to identify or forecast the individual needs of items and services This increases the risk that medical or other supplies will not be procured in appropriate volumes. A timely exchange and constant monitoring of qualified information along supply chains (such as the needs, available suppliers, and compliant supply chains) is important to mitigate such risks and to streamline the importation of essential items.
- 17. As COVID-19 and other pandemics have clearly demonstrated, many supply chains and services are very susceptible to disruptions at the level of individual suppliers. A bottleneck, or failure of an individual supplier, can bring one or even several supply chains to a standstill, especially when it turns out that several suppliers directly or indirectly depend on a single, or very few supplier(s). Many companies may not even be aware that such risks in their supply chains exist. Bottlenecks can be triggered by a pandemic in other ways as well, such as: lack of staff, logistics issues due to borders that are closed or have limited capacity, production or service limitations due to strict health and safety regulations.
- 18. To mitigate the risk of dependency on limited sources, collaboration and sharing of relevant information along supply chains is essential. However, the need for transparency and collaboration may conflict with interests in confidentiality and competition. Innovative software tools and services may help to balance these conflicts. These tools will be outlined in more detail in section E (Use of technologies).

#### 4. Key stakeholders

- 19. Obviously, various stakeholders will be involved in a pandemic crisis <u>health-related</u> <u>response</u> governments and authorities in diverse areas of competence and location; companies, suppliers and donors from various industries; individuals/consumers; non-governmental organizations and participants in health-related public-private partnerships.
- 20. When considering the <u>trade-related response</u> management during a pandemic, a number of additional, trade specific stakeholders should be involved the list includes but is not limited to:
  - Public sector stakeholders:
    - Regulatory bodies involved with cross-border trading (customs, border authorities and other relevant agencies);
    - Regional economic communities (see section 4 "Extra-national coordination" below); and
    - Trade offices and chambers of commerce.
  - Public-private partnership stakeholders including National Trade Facilitation Bodies;
  - Private sector stakeholders;
    - Transport and logistics sector; and
    - Manufacturing and production sector and their import/export agents (particularly providers of medical supplies, personal protective gear, and other goods that a scaling demand is focused on in a pandemic).
  - Stakeholders in unaffected regions (notably transit corridors).

21. Some areas of a country may be more affected by a pandemic than others resulting in more restrictive measures being implemented in these regions. Insofar as possible, it is advisable to include these local stakeholders in consultations regarding trade-related aspects of the pandemic.

#### D. Guidelines to facilitate pandemic relief

22. We must recognize that the world has entered unchartered territory in the year 2020. The way the private and public sectors operate needs to be reassessed urgently so that sustainable development can be achieved. If it is not, similar pandemics and climate change crises will leave the most vulnerable at risk and cause societal crises.

#### 1. Collaboration required

- 23. A comprehensive plan to address a pandemic crisis and mitigate its potential impact on trade will be more productive if all relevant stakeholders are involved in defining and implementing the solution. Some decisions need to be made quickly but making decisions without considering the impact on those who implement and those who will be affected may result in unworkable solutions or delays. Establishing effective coordination and information sharing prior to a crisis can mean getting vital feedback quickly, enabling appropriate responses that work for everyone. public-private partnerships can be powerful collaborative mechanisms, as they capitalize on the organization of the public sector and the innovation and financing capacity of the private sector.
- 24. The 2020 COVID-19 pandemic has involved the airlifting of thousands of tons of protective gear around the world for health-care workers. Later in the crisis, it has been necessary to organize the movement of fragile vials of medicine. A holistic supply chain approach has been necessary in which cooperation between private-sector actors and government agencies has been essential.

#### 1.1. Cross-border cooperation

25. One mechanism to help expedite border crossing of goods is the recognition of the results of clearance procedures at export (inspection, goods analysis, verification of certifications, etc.) from a partner country. Such cooperation is useful in information exchange, not only concerning the progression of the virus, but also of the measures and the impacts for trade. The private sector can also establish this kind of cooperation with partners in other countries to monitor and share how the evolution of the pandemic is impacting trade.

#### 1.2. Supply chain resilience – capacity sharing among countries

- 26. Recently, the term "resilience" has become a hot topic in the supply chain world, but we still need to understand the two main aspects of resilience. First, resilience implies several concepts that apply to supply chains:
  - Interoperability/modularity;
  - Adaptability/flexibility;
  - Access to capacity and assets;
  - Access to knowledge and talent; and
  - Transparency/traceability along supply chains.

27. The second principle characteristic of resilience is the established network. Diversified sourcing and supply and the routing channels provide a solid network that allows for the continued operation of a supply chain in the face of crisis. This network needs to be continuously monitored with the changing phases of a pandemic. Being able to allocate resources for securing public health service levels will depend on the level of preparedness (availability of resources and capacity to allocate in precise quantity and quality to meet the public health service demand). The implication is that resources and capacity need to be dynamically (re)allocated in each phase of a pandemic. For instance, phase 5 means that a pandemic is imminent and high demand for public health services and supplies are expected; should resources and capacities not be available, there will be little time and a high risk of not being able to service the population in a specific health structure.

#### 1.3. Role of the National Trade Facilitation Body

- 28. The revised UNECE Recommendation No. 4<sup>4</sup> provides guidelines for, and a detailed description of the steps involved in, the establishment of National Trade Facilitation Bodies (NTFBs) as well as a model Terms of Reference for an NTFB, which countries can customize to the context of their respective situation. It also provides a non-exhaustive list of those stakeholders who should be represented in an NTFB: importers, exporters, freight forwarders, carriers, customs, other government agencies, banks, insurance companies, among others. These stakeholders within the NTFB reflect the list of stakeholders listed in section C.4; the NTFB can be a strategic partner for governments in addressing the trade-related effects of a pandemic.
- 29. In a pandemic situation, the NTFB should be the resource and natural focal point for a country's pandemic (and emergency) response when it comes to facilitating trade and ensuring as little disruption of trade flows as possible. To this end, it is crucial for the Chair of the NTFB to participate as a substantive member in the government's designated body or pandemic emergency task force that leads the pandemic response with regard to trade-related cross-border activities. This will ensure a "two-way" liaison, which in turn will ensure rapid bi- and multinational coordination of any proposed trade-related crises measures and feedback to the designated national and international bodies.
- 30. Beyond being involved in formulating the immediate response and designing traderelated measures and procedures, the NTFBs should also be involved in elaborating a plan to be put in place for future, similar crises, thus establishing a well-defined, well-tested response framework.
- 31. Furthermore, with respect to communication, the NTFBs can play an important role in ensuring structured information flow between borders, making sure that challenges and possible solutions are communicated upstream to the NTFB and that harmonized recommended responses are communicated downstream to border posts after having been developed at the NTFB or government level.
- 32. With a view to ensuring communication at the bilateral and regional levels, the Chair of the NTFB would be a natural liaison and focal point for communication and coordination with

UNECE (2015). Recommendation No. 4: National Trade Facilitation Bodies, (ECE/TRADE/425). Available at: http://tfig.unece.org/contents/recommendation-4.htm

This directive is also discussed in the UNESCAP Expert Group Meeting on Trade Facilitation in Times of Crisis and Epidemic: Final Report", 29-30 July 2020. Available at:

https://www.unescap.org/sites/default/files/EGM%20on%20TF%20in%20times%20of%20crisis%20and%20epide mic-final%20report.pdf

regional organizations and NTFBs from neighbouring countries. In this context, the role of the transit coordinator (outlined in Art. 11.17 of the World Trade Organization Trade Facilitation Agreement) is indispensable and should also be part of the NTFB and pandemic response.

- 33. To be effective in its role in a pandemic crisis, the NTFB response work must have at least four focus areas:
  - Process optimization (developing recommendations and measures to streamline and accelerate the release and clearance of essential goods and to distribute vaccines on a global scale);
  - Cost reduction (alleviating the financial burden of traders negatively impacted by the pandemic);
  - Transparency and cooperation enhancement (increasing transparency which promotes cooperation and vice versa); and
  - Technology use (making use of information and communication technology (ICT) to ensure the continuity of cross-border trade and reduce direct contact among people through remote operation).<sup>6</sup>
- 34. In many developing and least developed countries (including countries and economies in transition) the effectiveness of the NTFB in assuming its role in the pandemic response will depend on whether existing structural challenges in the country are addressed. Some examples of structural challenges are the absence of a national database of key contacts at national borders; the lack of involvement of NTFBs in the national pandemic emergency task force rendering the emergency issues such as disruptions at the borders being dealt with only at the political level; and the lack of digital connectivity exacerbated by the absence of regulatory guidelines about teleworking, online meetings and messaging (further described in section 5).<sup>7</sup>

#### 1.4. Extranational coordination – multilateral, regional, bilateral

- 35. Each country or economy has established coordination at various levels: on a multilateral level through organizations like the United Nations or the World Trade Organization; on a regional level (such as the European Union, the Eurasian Economic Union or the Association of Southeast Asian Nations); and on bilateral levels through trade agreements between two trading nations. Each of these levels could potentially be instrumental in dealing with the trade-related impacts of a pandemic.
- 36. Multilateral organizations can help by providing recommendations, standards, best practices, and by convening (virtual) meetings for information sharing. A bi- or multi-lateral free trade agreement can help to foster cross-border cooperation such as mutual recognition of controls and analysis, ultimately streamlining border crossings.
- 37. Regional economic communities could potentially assist their member States to pool resources and coordinate trade-related responses to assist their stakeholders. Having a coordinated response can help traders understand regulatory frameworks to maintain their activities during a pandemic. Sharing information will also be key for a successful response of

United Nations Conference on Trade and Development (UNCTAD), How Countries can Leverage Trade Facilitation to Defeat the COVID-19 Pandemic, 22 April 2020, (UNCTAD/DTL/INF/2020/2). Available at: <a href="https://unctad.org/en/PublicationsLibrary/dtlinf2020d2">https://unctad.org/en/PublicationsLibrary/dtlinf2020d2</a> en.pdf

Poul Hansen and Celine Bacrot, "The role of the National Trade Facilitation Committees in the global economic recovery following COVID-19", UNCTAD Newsletter, 07 July 2020.

Available at: https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2420

member States. It could also be beneficial for regional economic communities to establish a predefined, formalized mechanism, either through regulations or informal ad-hoc groups, to address such coordination in a crisis period.<sup>8</sup>

#### 1.5. Special economic zones

- 38. Special economic zones can also help to simplify processes for and the financial burdens of companies in approaching international markets. This can be particularly important for micro, small and medium-sized enterprises (MSMEs). Such zones can help ensure buffer stocks of key goods needed for the disaster response are available which can be kept in warehouses, thereby suspending duties and taxes until they leave the zone.
- 39. It must be noted though, that there is no single model for such zones; the facilitations, fiscal and regulatory measures can vary from one economic zone to another. It may be worthwhile for the leadership of these zones to consider disasters and pandemic crises in the facilitations that they propose.

#### 2. Standard Operating Procedures / Emergency Operating Procedures

#### 2.1 Accuracy measures

40. In cases where a pandemic is disrupting business as usual, it usually comes with the massive lack of knowledge and uncertainty at the level of individuals, companies and institutions. This missing knowledge and uncertainty can lead to bad decisions and inaccurate allocations of efforts, demands and supplies; this can, in turn, lead to a vicious circle of further uncertainty and lack of predictability. To mitigate these risks, it is necessary to provide reliable, up-to-date information and systems to duly notify stakeholders on all levels of relevance for pandemic and trade-related informed decisions.

#### 2.2 Reliable information

- 41. Obviously, to be able to make informed decisions, reliable information is of the essence. In a pandemic response, timely dissemination of the following information is essential:
  - Information on how and where the pandemic spreads;
  - Contact points;
  - Personal protection requirements;
  - Indications of affected supply chains, transportation routes, borders, etc.;
  - Labour implications such as restrictions in working hours at regular entry points;
  - Special documentation requirements;
  - Fumigation or other special treatment measures; and
  - Localized measures occurring in specific areas of a country.
- 42. However, as the recent pandemic has shown, it is important to establish global standards and qualified international information tools and workflows on pandemic data. This helps to

ESCAP, in cooperation with UNCTAD, WTO, UNECE and other UN regional commissions, through a Policy Hackathon in July 2020, gathered inputs for the development of model provisions that could bridge the gaps in existing RTAs, promote cooperation and predictability in times of future crises and build resilience in the post-pandemic future, accessible at: https://www.unescap.org/resources/online-repository-contributions-policy-hackathon-model-provisions-trade-times-crisis-and

mitigate the risks stemming from various sources of data, which lack comparability and leave too much room for interpretation and uncertainty.

43. To assure that reliable information is available to all stakeholders affected by a pandemic, these stakeholders should not only constantly evaluate and assess the reliability of the information they need and receive at their end, but also disclose the source of the information they disseminate to their audience. This transparency can not only help the identification of and distinction between reliable and unreliable information, but also help to further establish qualified sources and best practices globally.

#### 2.3 Qualified information and notification systems

- 44. In particular, in cross border movement of goods, the risk of bottlenecks can be mitigated by establishing notification systems and global best practices for the relevant stakeholders and their audiences. To avoid disruptions in trade, it is important to have official, timely information dissemination as soon as it is available.
- 45. Where possible, qualified and reliable notification systems should be linked to each other with the option to initiate cascades of notifications along cross-border supply chains and relevant stakeholders. It is important that the respective sources, links and cascades are made transparent, so that the quality and efficiency of the notification systems can be monitored and duly assessed by all relevant stakeholders and their respective audiences.
- 46. A body such as an emergency task force, an NTFB, or the management team of a Trade Information Portal (TIP) (see below) may create a dedicated website of qualified sources of information that are relevant for trade-related disease-response activities. Moreover, the task force may establish multilingual translation and dissemination workflows and tools. These tools could provide options for interested parties to receive qualified information about indicators and the respective response activities and recommendations. For example, an information service tool in the form of a software application may allow an importer, who usually delivers products to specific regions, to subscribe to this information service. This may include:
  - local data on infection rates;
  - subsequent trade-related consequences (e.g. for suppliers, logistic companies, import/export agencies) in case specific indicators are met; and
  - push notifications with early warnings related to specific regions of interest to the subscriber.
- 47. Such services may collect and disseminate "real-time" data that is updated and disseminated immediately.
- 48. A body or task force, such as the ones mentioned above, may also provide options to collect, or incentivize suppliers to provide, qualified data about their supplies in case they are directly affected by disease-response activities of local authorities. This "feedback data" may be disseminated to local authorities and other relevant stakeholders. Interactive tools and iterative workflows can help decision makers to make informed decisions and adapt to changes without undue delay.

# 2.4 Enquiry points to provide information on crisis-related restrictions and regulations

49. An enquiry point – an official, or a government office whose job it is to deal with queries from governmental agencies, traders and other interested parties on trade-related issues – is a

good mechanism for providing information on crisis-related restrictions and regulations. New enquiry points can be established specifically for this purpose or existing ones can have their mandate expanded to cover the provision of such information. Beyond providing up-to-date information on restrictions and regulations, enquiry points can also be important sources of information about the immediate and medium-term effects that these restrictions and regulations may have on the movement of people and goods across borders. This could include the impact that a health crisis and related government measures are having on the availability of air and shipping cargo, changes in labour capacity at ports due to increased protective measures for workers, and changes in times and costs of international trade. Moreover, ensuring the transparency of crisis-related measures related to essential goods, such as medical supplies, can play an important role in international coordination and help to avert scenarios such as hoarding and unreasonable export restrictions.

#### 2.5 Operational measures

- 50. Most emergencies create sudden and urgent demand for medical equipment and food products, many of which can only be sourced abroad. Pandemics give rise to a unique challenge, as they are usually accompanied by another policy imperative: the need to prevent the spread of the disease across borders. Containing the spread of a virus like COVID-19 is particularly difficult when there is a risk of contracting the virus from specific types of goods (e.g. refrigerated foodstuffs) and packaging, or via human transmission from logistics professionals. The resulting trade-off is as challenging as it is unavoidable: how can one facilitate the efficient movement of essential goods across borders, so that they can reach populations that need them, while simultaneously tightening controls and mitigating the risk of cross-border transmission.
- 51. The operational measures that are presented in this section combine some commonsense border management techniques with general trade facilitation principles of transparency, information sharing, risk management and trust-based collaboration for a more efficient and effective pandemic response.

#### 2.6 Measures by border agencies

#### Special regimes for expedited clearance of essential medical goods and food products

52. First and foremost, governments and border authorities must recognize that emergencies cause a sudden and drastic increase in demand for specific goods<sup>9</sup>, as people fall ill or as companies begin to stockpile in preparation for expected supply shortages. At the same time, the producers of these goods (or the companies that transport them) may be unable to meet this demand due to capacity constraints, sudden shortfalls in labour (due to illness) or government restrictions on industrial activity or cross-border movement. Therefore, when these essential goods *can* be sourced, it is important for importing-country governments to carry out import clearance procedures on a priority basis, even if this implies some additional delays for non-essential goods. Both the European Union and the Central European Free Trade Area, for example, have established "green lanes" for priority supplies as part of their pandemic response to the COVID-19 pandemic.

The World Customs Organization has proposed a list of such goods: <a href="http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/nomenclature/covid 19/hs-classification-reference edition-2 en.pdf?la=en">http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/nomenclature/covid 19/hs-classification-reference edition-2 en.pdf?la=en</a>

#### Pre-arrival processing and prior release

53. Whenever possible, border authorities should carry out clearance procedures *before* the goods arrive at the port of entry, to ensure that no time is lost upon arrival at the border. Insofar as clearance procedures usually consist of document checks only, these procedures can be completed without the need for the cargo to be physically present at the border. Even in cases where physical inspections are mandatory, these can in some cases be conducted away from the border (e.g. at the premises of a trusted trader or authorized economic operator), allowing for prior release of goods and eliminating the logistical bottleneck that results from lengthy procedures at the border itself.

#### Effective risk management

- 54. The use of risk management is now quite common among customs authorities, as it allows them to optimize the use of their resources: documentary checks and inspections are concentrated on "high-risk" goods (which are directed toward a "red" channel) while inspections on a significant proportion of "low-risk" goods can be waived altogether (the "green" channel).
- 55. Post-clearance audits are an integral part of risk management and moving controls away from the border. The objective of post-clearance audits is to allow for quicker clearance of goods while ensuring that due compliance is achieved through an audit mechanism that can be effectively conducted after the release the of goods. Post-clearance audits can take place at the premises of the trader and can either focus on individual transactions or cover imports and/or exports undertaken over a certain period of time. During a pandemic, such on-site audits reduce physical contact and potential clearance bottlenecks at entry points and can release space for public infrastructure (warehouses, storage) at the border.<sup>10</sup>

#### Expanded use of integrated risk management

56. Customs authorities' risk management systems are often oriented towards the policy objectives of revenue authorities (e.g. the detection of under-invoicing, misclassification or the misdeclaration of country of origin) while other border agencies, including sanitary and phytosanitary authorities' systems, operate separately and have a different focus. The COVID-19 pandemic is an opportunity to expand the use of risk management techniques to include health-related criteria, allowing border regulatory authorities to accurately identify shipments that pose a risk to human health while accelerating the clearance of low-risk goods. SPS authorities, in particular, should advocate for investment in the skills and hardware needed to implement good risk management systems.

#### **Enhanced coordination between border authorities**

57. Use of the integrated risk management techniques described above can be rendered practically impossible if the data sets on cross-border flows collected by each border agency (customs, health) are not collected in a consistent manner, or if the IT systems used by each agency to manage their data are incompatible. For effective and coordinated border control, data must be easily shareable or combined into a centralized government database, which is then made accessible to all interested agencies. Policies must then be developed and implemented in

The UN Global Survey on Digital and Sustainable Trade Facilitation 2021 includes a module dedicated to trade facilitation measures in times of crisis, providing an overview of implementation across over 115 countries. Available at untfsurvey.org from June 2021.

coordinated manner.<sup>11</sup> For example, health authorities may need to communicate regularly with customs to ensure that the list of essential medical supplies eligible for expedited clearance (and the corresponding customs nomenclature) is up-to-date; they may also need to communicate regularly with immigration authorities to ensure that restrictions on the movement of people are not inhibiting the entry of essential medical supplies or the technical professionals needed to install or repair equipment (e.g. ventilators). Social distancing rules may also push border authorities towards greater collaboration, as the delegation or sharing of responsibilities can optimize the use of human resources and reduce the number of officials present at the border.

#### Authorized operator or trusted trader schemes

58. Governments may wish to expand their use of authorized economic operator (AEO) or trusted trader (TT) schemes to (temporarily or permanently) include more companies involved in sourcing, manufacturing, or transporting essential goods. To become an AEO/TT, companies must provide information to border authorities on their internal operations, including the management structures and procedures that are in place to manage international trade transactions. This could include information regarding their supply chain management processes, their compliance and due diligence functions, their internal codes of conduct (ethical standards, occupational health and safety) as well as their own risk management strategies. This information can be combined with the data that governments already possess on companies' track record of compliance, allowing border authorities to identify traders that present a low risk of noncompliance and to soften or remove some of the controls that these companies would ordinarily be expected to undergo. Like risk management, AEO/TT schemes use information to assess risk and enhance trust between border authorities and compliant traders, facilitating the border control process for all concerned. The inclusion of health-related criteria presupposes smooth and effective collaboration between different border authorities such as customs and SPS.

#### Emergency mutual recognition arrangements for priority goods

59. Ensuring that priority products urgently needed during a pandemic (e.g. medical equipment and food) meet the appropriate quality and technical standards is essential to safeguard the health and safety of citizens. Countries may apply different standards and regulatory regimes to the treatment of goods and professional certifications, thus creating discrepancies in their recognition and acceptance by other countries that apply different rules. Mutual recognition promotes the recognition of equivalence of safety and health requirements, or conformity assessment procedures/results, applying to goods and certifications in countries who have adopted similar or higher standards. Having mutual recognition of conformity assessment procedures and results for medical equipment, essential food items and farming inputs results in faster movement of goods between partner trading countries by reducing the number of conformity assessment procedures the products need to undergo when being traded across borders – meaning it facilitates the acceptance of goods in one country based on the results of a assessment in another.

UNECE (2011), Recommendation No. 34: Data Simplification and Standardization for International Trade provides a methodology to harmonizing data requirements, eliminate redundancies and creating a single national data set. Available at: <a href="http://www.unece.org/fileadmin/DAM/trade/Publications/ECE-TRADE-400E\_Rec34.pdf">http://www.unece.org/fileadmin/DAM/trade/Publications/ECE-TRADE-400E\_Rec34.pdf</a>

#### **Box 2: Mutual recognition**

Countries may unilaterally recognize/adopt technical standards for medical devices issued by the competent regulatory authority in another jurisdiction to expedite administrative procedures in importing these products. For example, the United States authorized the importation and use of masks that met requirements approved in other countries, even if these requirements were not formally approved by the National Institute for Occupational Safety and Health. Likewise, in the United Kingdom, the Medicines and Healthcare products Regulatory Agency adopted facilitative measures to reduce retesting of medicines manufactured in a third country if the manufacturer had been inspected by a mutual recognition partner or if the product had obtained good manufacturing practice (GMP) recognition in that third country.

Source: OECD, 2020.

60. In the context of a pandemic, mutual recognition between countries facilitates clearance and release of cargo at the border, allowing fewer security and safety-related controls, and expedited treatment at customs clearance. Countries can also utilize international standards to fulfil health and regulatory objectives while also reducing the possibilities of raising unnecessary burdens to trade. Alternatively, countries could also consider adopting regulatory approaches of countries of similar levels of economic and regulatory development.

#### 2.7 Measures by the private sector

- 61. Logistical supply chains are run primarily by private sector actors. These private sector actors can contribute to the effectiveness of trade facilitation measures by engaging with governments and border authorities, sharing relevant information about their sectors and/or the ways in which their internal business operations have been reorganized to manage the risk of transmission and contributing to the design of emergency border controls.
- 62. For example, if transport companies have already made provisions to regularly test their staff members for infection, or if they are taking adequate measures to regularly disinfect lorries, containers, or other transport equipment, then these precautions do not need to be performed again at the border by public authorities. In addition, by submitting cargo manifest information well in advance to border authorities, shipping companies can significantly help to anticipate and facilitate border operations at the port of destination.
- 63. The private sector actors can also improve the effectiveness of the controls that have been introduced by keeping themselves informed and bolstering their own internal systems to ensure compliance. For example, studies have found that the coronavirus can survive between 24 to 72 hours on different surfaces, depending on the packaging material used. Traded goods may therefore face new regulations on packaging materials and packaging design, intended to minimize the risk of transmission. Producers of goods intended for export, and the transport

David Feber et al., "The coronavirus pandemic has reshaped industry megatrends in ways that will have major short- and long-term implications for packaging design", McKinsey & Company article, 2020. Available at: "<a href="https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/beyond-covid-19-the-next-normal-for-packaging-design">https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/beyond-covid-19-the-next-normal-for-packaging-design</a>

companies that transport these goods, may therefore need to adapt to source appropriate packaging material and ensure that those packaging materials are appropriately handled.

64. Companies should also develop and implement their own pandemic response policies and industry-level norms — especially in cases where governments and/or border authorities may be slow to introduce emergency controls. Companies can provide guidance to their workers on social distancing, hygiene precautions and other measures to curb the spread of the virus in the workplace through codes of conduct or other company policies. Those companies that are active in sourcing, manufacturing, or transporting essential goods can prioritize the movement of those goods over that of the non-essential items in their portfolios.

### E. Use of technologies

# 1. Importance of system-to-system exchanges (removing/reducing human contact)

- 65. The importance of enabling system-to-system electronic data interchange (EDI) of information is essential to reducing human contact; this should aim to replace a paper process and may accompany a direct trader input (DTI) transmission of information. This dematerialized data exchange is within a view to facilitate paperless and contactless border crossing operations, electronic submission of trade and transport data prior to the arrival of goods, and the initiation of risk assessment in order to release all priority and low-risk shipments upon arrival.
- 66. The following is a non-exhaustive list of EDI exchanges:
  - Commercial, an EDI exchange of commercial documents such as orders, packing lists, invoices, etc., which can enable companies to streamline their processes and automatically integrate information without recapturing the data;
  - Logistics, an EDI exchange between private sector actors for the movement of goods, which can enable companies to streamline their processes and automatically integrate information without recapturing the data;
  - Regulatory, an EDI exchange of regulatory information including customs declarations, inspection declarations, health and sanitary declarations, which often provides better quality data as it can be directly transmitted from the company's computer system, avoiding recapture of data and potential human errors; and
  - Transport, including:
    - Air Cargo, an EDI exchange between airlines and other air cargo stakeholders such as shippers, freight forwarders, ground-handling agents, regulators, and customs and security agencies, to facilitate air cargo business processes, fulfil customs requirements for advanced cargo information (ACI) filing, comply with security regulations, and receive details about actions taken by customs or other government agencies such as shipments required for examination or released for delivery;
    - Ocean Cargo, an EDI exchange between a ship data provider's ICT systems
      and customs to enable real-time, more efficient processing and transfer of
      advance cargo information to customs, and affording the opportunity to
      reuse supply chain data (transport and trade) to complete the entry/exit

- customs formalities and support customs clearance and risk management processes;
- Containers, an EDI container status message (CSM) and real-time smart
  container data exchange to automatically capture and communicate
  information on container status (gate out, gate in, stuffing, loading,
  discharge, stripping, etc.), arrival to or departure from an authorized
  location such as an authorized economic operator (AEO) premises,
  stuffing/stripping location, terminals, customs office etc;
- Post, an EDI exchange of electronic advance data (EAD) between postal operators and customs to enable an efficient customs clearance process and the timely delivery of postal items;
- **Express,** an EDI exchange between express carriers and customs to enable pre-arrival and pre-departure processing of express consignments; and
- Transit, an EDI exchange between the eTIR international system, customs, and other competent authorities for the international transport of goods under cover of TIR carnets.

#### 2. Single Window and other facilities for cross-border trade

- 67. The dematerialization of processes can contribute to the reduction of human interactions. At the border, clearance procedures require the presentation of a certain number of documents and regulatory declarations. The implementation of a National Single Window<sup>13</sup> for international trade means the submission of all regulatory data to a single entry point through an electronic facility which also consolidates all potential responses. Such a facility also aims to streamline the regulatory processes at the border, further facilitating the passage of goods.
- 68. Beyond the electronic system which provides such a single entry point, the establishment of a National Single Window for international trade requires a certain level of coordination between regulatory agencies, which should help facilitate border crossings and streamline procedures for traders. This can contribute to maintaining trade levels even in the face of pandemic crisis.
- 69. Similar electronic facilities, which may not fulfil all the functionalities of a Single Window, can also help reduce direct human contact and streamline trade. These can include port community systems (PCS), and Single Submission Portals<sup>14</sup>, customs declaration processing systems<sup>15</sup>, and some basic e-facilities such as e-payments, and acceptance of digital copies. Providing information through a Trade Information Portal (TIP)<sup>16</sup> also allows traders to access all relevant information concerning the regulatory obligations in their cross-border operations through a single electronic portal, removing the need to physically go to each administration. The

UNECE (2020). Recommendation No. 33: Single Window Recommendation, (ECE/TRADE/352/Rev.1). Available at: <a href="http://www.unece.org/fileadmin/DAM/cefact/recommendations/rec33/ECE-TRADE-352">http://www.unece.org/fileadmin/DAM/cefact/recommendations/rec33/ECE-TRADE-352</a> Rev.1E Rec33 2020Edition.pdf

<sup>&</sup>lt;sup>14</sup> UNECE (2019). Recommendation No. 37: Single Submission Portals, (ECE/TRADE/C/CEFACT/2019/6). Available at:

http://www.unece.org/fileadmin/DAM/cefact/cf\_plenary/2019\_plenary/ECE\_TRADE\_C\_CEFACT\_2019\_06E.pdf

For example, see UNCTAD ASYCUDA World and its possible adaptations to the COVID-19 pandemic:
https://unctad.org/system/files/official-document/dtlasycudainf2020d1\_en.pdf

Future UNECE (2021). Recommendation No. 38: Trade Information Portals (Pending final approval by the UN/CEFACT 2021 Plenary.)

management team of a TIP may consider consolidating and disseminating pandemic information as described above.

#### 3. Teleworking tools and the implied needs

70. In the context of pandemics countries may implement various measures to contain the spread of the virus, such as reducing non-essential work and promoting teleworking. The following aspects need to be considered when transitioning from office-based work to teleworking.

#### 3.1 Data protection needs adapting to pandemic crisis requirements

- 71. Given the specific needs of a pandemic crisis response, national customs and border authorities staff will likely need to use available devices (e.g. their own devices) to connect to work servers and access data, or to receive necessary ICT equipment provided by their administration. For this, it may be necessary to adopt regulations, policies and technical requirements.
- 72. Internal regulations and policies may need to be adapted to facilitate communication among teleworkers where needed. Providing guidance to teleworkers on how to prevent cybersecurity threats while working from home is advisable.
- 73. Data protection legislation and requirements designed with the specific needs of a pandemic crisis in mind (with reasonable compliance requirements to ensure a quick adoption) may need to be adopted within the framework of applicable data protection and privacy laws and regulations. For example, they could enable reasonable, resilient communication activities by providing guidance to workers to help them comply with data protection and privacy regulations while working from home (using the technical infrastructures that are typically available there such as video and other collaboration tools for surveillance, examination or other relevant activities).

#### 3.2 Webinars, training and templates

- 74. Training and webinars will be essential to understanding how best to act and react during a pandemic. It is advisable to provide the public and private sectors with access to online training platforms, e-learning courses, and webinars to facilitate the organization and delivery of awareness and training sessions.
- 75. It will also be very important to provide model policies, templates and workflows that are easily adopted and implemented by local authorities, companies, and other relevant stakeholders.

#### 4. Use of new technologies

76. Collaboration between stakeholders and providing qualified information along supply chains can be crucial in fighting pandemics and in mitigating bottlenecks in the cross-border movement of goods. Implementing and making use of new technologies can facilitate these collaborations.<sup>17</sup> For example, data related to the cross-border movement of essential goods needed to fight pandemics can be collected, assessed, and shared along supply chains efficiently

For background information, presentations, and documentation, see the Online Conference on the "Role of advanced technologies in overcoming COVID-19 disruptions in international trade", 2 July 2020. Available at: https://www.unece.org/index.php?id=54643

by using a decentralized blockchain-based infrastructure. This infrastructure can be used by authorities and suppliers along cross-border supply chains to provide evidence of the compliant sources of their supplies efficiently and with the relevant and immutable documentation needed for qualification. The nested use of individually encrypted and interlinked data layers can allow data to be immutably transmitted along international supply chains. This can be done in a way that allows efficient collaboration and reasonable verification while meeting and balancing the various and sometimes conflicting interests in transparency and confidentiality needs.<sup>18</sup>

77. Another example is the use of internet of things (IoT) to establish networks by implementing electronic devices that collect data from sensors. These sensors can automatically trigger notifications on basis of relevant indicators that can affect to cross-border movement of goods.

#### F. Conclusions

78. It is not possible to foresee unexpected disruptions to supply chains and trade, but a pandemic will usually arrive in phases, which can provide crucial time to plan for possible future phases. There are clear measures which can be taken to help decrease the trade-related impacts of pandemics described in this recommendation.

For a detailed description of the potentials of blockchain-based supply chain collaboration that builds on the open blockchain Minespider Protocol, and how it works with nested, encrypted and interlinked data layers see the following whitepaper. <a href="https://uploads-paper.">https://uploads-paper.</a>

 $<sup>\</sup>underline{ssl.webflow.com/5bb20121ca2e96ee01db29bc/5c0fa81d4a4585e37ea764b7\_Minespider\_Whitepaper.pdf}$ 



Palais des Nations

CH - 1211 Geneva 10, Switzerland Telephone: +41(0)22 917 12 34 E-mail: unece\_info@un.org Website: http://www.unece.org