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Trade Facilitation at the Peru–Chile Land Border: Policy Impact of Digital Importation and Prearrival Declarations

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This policy report examines the impact of the Peruvian Foreign Trade Public Policy implemented at the Santa Rosa Centre of Compliance (CAFSR) at the land border between Peru and Chile, presenting original research and quantitative analysis of statistics from the CAFSR at the Peruvian border collected by the National Superintendency of Customs and Tax Administration (SUNAT) from 2019 to 2022. The results show that customs compliance controls have been expedited, simplified, and modernised by both the digital importation process and mandatory prearrival customs declarations. However, the analysis calls for two further risk assessment strategies to be adopted by customs administrations in both countries. First, applying additional filters to identify fraud in prearrival customs declarations could expedite the release of low-risk consignments and help to ensure higher-risk consignments are subject to additional border restrictions. This paper suggests implementing an innovative blockchain technology that allows for the timely and accurate sharing of encrypted customs declarations to administrations in Peru and Chile. Second, upgrading infrastructure and logistics at the CAFSR could increase the capacity of the border post to facilitate increased binational trade.

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The views and contents of this document only reflect the author's opinion and do not represent the point of view of the National Superintendence of Customs and Tax Administration of Peru (SUNAT).

Executive Summary

The Peruvian government recognises the critical importance of foreign trade in promoting the state's competitiveness (Minister of International Trade and Tourism of Peru 2013). The Customs Administration

has implemented reforms since 2020, such as the mandatory advance declaration and the 100% digital importation declaration process, while also progressively implementing the Smart Borders Project. The Smart Borders Project aims to automatize customs controls through the extensive use of technology (with high-energy scanners, container tracking, electronic seals, high technology cameras, automated registration, and others) at the borders by 2023. This Project will also incorporate new artificial intelligence tools to predict fraud patterns (risk assessment and data mining) (Delgado 2020, 748).

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The case study of the CAFSR presented in this paper finds evidence of significant advances in trade facilitation from recent reforms due to expedited and simplified customs process. The CAFSR administers customs controls for the entrance of goods into Peru. The new digital platform accepts customs declarations before goods arrive, supports online payment that can be deferred, and allows online requests for physical inspection. This platform allows phones, tablets, laptops, and desktop computers to track and register customs control. The prearrival declaration, which can be made any time prior to the arrival of the goods, improves and expedites authorities' control. Linking the automatic transport and customs declaration simplifies the process, confirming declarations within 30 days of goods arrival without additional paperwork, and reducing the release time of goods from over 70 hours in 2019 to under 20 hours in 2022.

Quantitative analysis of customs data from the CAFSR shows that prearrival declarations increased from 18% in 2019 to 68% in 2022. Importers increasingly prefer the CAFSR process over in-country warehouses, where additional costs for storage are added to the importers. The analysis also found that the type of customs control did not change during the evaluated period, even as the flow of goods increased through the CAFSR. Control type is decided by a selectivity system that assesses risk: “Based upon 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” (WTO 2017). The system then assigns the control channel: physical and documentary (red channel), only documentary (orange channel), and free entrance with no further controls (green channel). Exceptionally, the customs officers can change the channel if more exhaustive control is needed.

This paper proposes a focussed innovation in the form of a binational blockchain system between Peru and Chile. This system could enhance interoperability, traceability, and risk assessment through the real-time sharing of customs declarations to assist with the early detection of fraud patterns and provide an accurate control channel that would facilitate more efficient flow of goods. A blockchain also has the potential to improve collaboration between customs and other stakeholders such as banks, enabling early detection of fraud in the declared price.

This report also recommends upgrading the infrastructure and logistics at the CAFSR, considering successful examples of differentiated control in the USA and Canada with the implementation of a fast-tracked customs process for low-risk cargo. Other lessons may be drawn from the experience of the ‘Los Andes’ customs post at the border of Chile and Argentina (Puerto Terrestre Los Andes 2022).

1. Introduction

In recent years, Peru has achieved sustainable economic growth, reduced poverty, and increased disposable income (WTO 2019). The WTO attributes these outcomes to the open market economy and low taxation rates, as well as the promotion of international trade through specific initiatives (WTO 2019). Notably, the World Bank Group (2020) recognised that Peru decreased import and export times by streamlining customs clearance (World Bank 2020). The customs administration executing the national trade policy regulated by the Strategic Export Plan 2025 (PENX) implemented effective measures such as the mandatory advance declaration for importation and the digital declaration process (Minister of International Trade and Tourism of Peru 2013). The case study undertaken at the CAFSR by the author and described in this paper examines the impact of recent changes to the customs process to facilitate international trade and identifies challenges and opportunities to enhance customs control. This research is presented in the following four sections: first, Section 2 provides context by outlining the public policies that regulate trade facilitation, focussing on recent changes implemented by the customs administration. Section 3 analyses the outcomes of recent reforms and the ongoing implementation of the Smart Border Project to identify challenges faced at the CAFSR. Section 4 offers a brief conclusion, and, finally, Section 5 explores policy options and recommendations, drawing on pertinent international experience.

2. Trade Facilitation Public Policy in Peru

The Ministry of Foreign Trade and Tourism in Peru established the National Strategic Plan for Exports (PENX) in order to promote the consolidation and internationalisation of Peruvian companies by 2025. Key strategic objectives of PENX are facilitating foreign trade and increasing the efficiency of the international logistics chain (Minister of International Trade and Tourism of Peru 2013). PENX is the latest policy to facilitate international trade, following the Trade Facilitation Law 2007 (Peruvian Congress 2007) that complied with international agreements and the Trade Facilitation Agreement (TFA) to enhance the fluidity and transit of goods across borders, reduce trade costs, and expedite the clearance of goods (Peruvian Congress 2016). PENX's focus on improving logistics and transport was supported by a series of changes to the General Customs Law, Legislative Decree N°1053 (Peruvian Congress 2008), and related regulations (Peruvian Congress 2017). The most important changes are the obligation of prearrival declarations on imports, the strengthening of controls at border posts instead of warehouses, clearance of goods in 48 hours, the establishment of online payment options—including

the option to defer payment—and automating digital customs and risk assessment for selectivity controls.

Of these changes mentioned above, two provide the regulatory context for the analysis of the case study of the CAFSR on the Peruvian–Chilean land border: first, prearrival or advance customs declaration (mandatory) and the use of Border Centres as an arrival point for customs control (Section 2.1), and, second, new import procedures that are 100% digital (Section 2.2).

2.1. Prearrival or advance customs declaration

Customs regulations have been modified over the years to expedite the clearance of goods. By 2008, Peruvian legislation (LGA) introduced the prearrival declaration, which could be completed no earlier than 15 days before shipment arrival in Peru. This deadline changed in 2015 to 30 days, and, finally, with Legislative Decree 1433 (Peruvian Congress 2018), users can declare goods any time prior to their arrival, whether by air, sea, or land. Prearrival declaration became mandatory for all import declarations in 2022.

The modification of the terms and the obligation of prearrival declaration allows importers to choose whether to transmit the anticipatory declaration for customs control either (a) at the border post, consigning the centre of compliance as the arrival point, or (b) in any warehouse, including the Free Trade Zone, within the country. In scenario (a), goods assessed as ‘green channel’ are given immediate entrance into the country without further control, whereas ‘orange’ (documentary) and ‘red’ (documentary and physical) channel controls may be executed immediately by the customs administration at the CAFSR, with the digitalized information attached to the declaration (SUNAT 2020[a]).

2.2. The 100% Digital Importation Procedure

The 100% Digital Importation Procedure has eliminated the use of paper records and incorporated digital technology when processing customs controls to facilitate trade. The digitalization of customs controls is part of the public policy that includes Modernization Law N° 27658 (Peruvian Congress n.d.), the development plan of the Information Society and the National Politic of Electronic Government 2013–2017. In response, the Customs Administration released the Digital Government Plan 2020–2022 (SUNAT 2020[b]), which contains short- and long-term strategies for transforming and modernising customs controls using Information and Communication Technologies (ICT).

This new customs process was implemented through the Customs Facilitation, Security, and Transparency (FAST) Program, which develops measures to “facilitate, speed up, automate, and [make] transparent the entry and exit processes of goods on the country’s customs, as well as in the complementary processes of operator

control. They all integrated into the transverse processes of risk management and logistics chain security” (SUNAT n.d.[a]).

The program established the 100% Digital Importation and Exportation processes. These processes were accelerated due to COVID-19 and were fully implemented by August 2020. The main characteristics of the Digital Importation Procedure are described in **Figure 1**: customs declaration, payment method, and type of customs control (channel).

CUSTOMS DECLARATIONS	PAYMENT	TYPE OF CONTROL (CHANNEL)
<ul style="list-style-type: none"> • 100% electronic submission (digitalized documents) • Declaration harmonized with WCO data model (XML) • Online submission any time before goods arrive • Electronic customs broker’s mandate • Online tracking (24/7/365) 	<ul style="list-style-type: none"> • 100% online • Deferred payment and enforceability for guaranteed cargo and Authorized Economic Operator 	<ul style="list-style-type: none"> • Automated linkage between the transport and customs declarations • Digital-based documents • Online requests and functionary assignation for physical inspection • Customs control can be registered by any device (mobile) • Remote customs control

Figure 1. Digital Importation Procedure Main Characteristics.
 Source: the author, based on data from Delgado (2020, 747).

The 100% Digital Importation Procedure has significantly advanced trade facilitation, particularly for maritime transportation characterised by cargo traceability, where all goods are tracked before arrival until they are released. The importers are contacted when the goods arrive. This is not the situation in land transportation, as demonstrated in the case study.

3. Case Study: Analysis of the Control at the Land Border between Peru and Chile.

The following case study, developed at the Peruvian Customs facility at the Peru–Chile border, analyses the extent to which trade facilitation has been impacted by the new digital importation procedures and advanced prearrival clearance processes, examining statistics provided by SUNAT at the CAFSR. This analysis informs discussions of remaining trade impediments and makes recommendations to mitigate them.

Chile is Peru’s sixth largest trading partner and fourth in Latin America. In 2021, Peru’s imported goods from Chile were valued at USD \$1,318,305.40, including cost, insurance, and freight (CIF), and, by June 2022, imported goods were USD \$761,139. Of these imported goods,

73% had passed through the CAFSR border post; this was a similar proportion of imports to the previous three years (SUNAT n.d.[b]).

Commercial activities at the CAFSR are characterised by cooperation between the customs administrations of Peru and Chile. The Bilateral Agreement of Cooperation and Mutual Assistance in Customs Matters (Chilean Customs 2005) and the Free Trade Agreement (Minister of International Trade and Tourism of Peru 2007) are among the most relevant international agreements. The latter ruled that by 2016, all taxes would be liberalised and customs cooperation and trade facilitation measures would be established.

Finally, the Framework Agreement for Implementing Integrated Control and Cooperation Systems for the Facilitation of Transit at the Centre of Compliance between Peru and Chile was implemented in 2017 (Peruvian Congress 2011). It aims to increase border integration, tourism, and trade between the parties in the border posts Chacalluta (Chile) and Santa Rosa (CAFSR). Currently, the integration of migration control and entrance/exit of vehicles with tourist purposes has only been achieved by juxtaposed control (control of the originating country first, then the entrance country). For example, a tourist travelling from Chile to Peru through the CAFSR only has to stop once, as the authorities for both countries are located in the same office.

3.1. Prearrival Declaration, arrival point, and its impact on trade facilitation

The CAFSR has mandated prearrival declarations for imports since January 2022 and has implemented the 100% Digital Importation Procedure to expedite the flow of goods. **Figure 2** shows a sustained increase in prearrival declarations at the CAFSR in recent years. While only 18% of imports had prearrival declarations in 2019, this rose to 68% in 2022. This coincided with a substantial decline in declarations after the arrival of imported goods, from 75% in 2019 to 25% in 2022 (SUNAT 2022[a]).

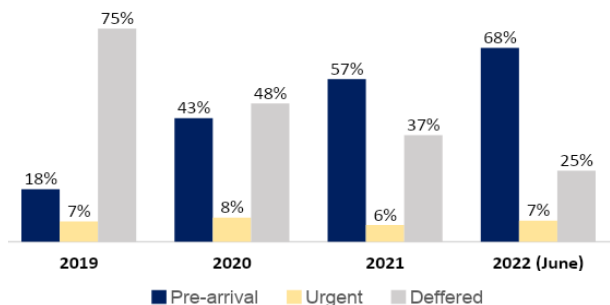


Figure 2. Customs Declarations in USD, including cost, insurance, and freight (CIF) by type of control in Tacna Customs Administration. Source: request for public data from SUNAT (Letter N.º 000030-2022-SUNAT/3G0000 received on 15/08/2022) (SUNAT 2022[a]).

To enhance trade facilitation, Peru is promoting the use of customs border control infrastructures (at the country’s entrance) to provide an efficient service and reduce the time and costs for users who can decide where the customs controls will occur (border post or in-country warehouse).

Consequently, the CAFSR underwent a transformation. While only 21% of import declarations designated it as an arrival point in 2019, that number increased considerably over the course of this study, reaching 54% in 2022 (SUNAT 2022[a]). Logically, this resulted in a gradual reduction in the use of warehouses in Peru, including in the Free Trade Zone (see **Figure 3**) for passing through the customs control in any regime (e.g., importation, exportation, temporal admissions, transit, etc.).

Another factor that can promote trade facilitation is the time taken to release imports from customs. **Figure 4** shows that the average number of hours for the clearance of goods in the Customs Administration has decreased consistently and gradually, going from 70 hours in 2019 to 22.9 hours in June 2022 (SUNAT 2022[a]).

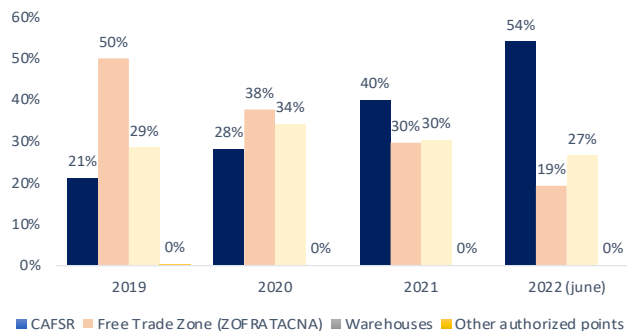


Figure 3. Percentages of Customs Declarations (value USD CIF) by type of control in Tacna Customs Administration. Source: request for public data from SUNAT (Letter N.º 000030-2022-SUNAT/3G0000 received on 15/08/2022) (SUNAT 2022[a]).

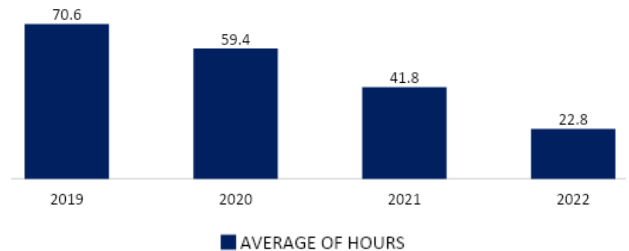


Figure 4. Average Hours for Goods Clearance from 2019 to 2022 in Tacna Customs Administration. Source: request to access public data provided by SUNAT (Letter N.º 000032-2022-SUNAT/3G0000 received on 26/08/2022) (SUNAT 2022[b]).

Table 1. Average Hours for Goods Clearance and Number of Declarations (DAM) from 2019 to 2022 by Type of Dispatch and Selectivity in Tacna Customs, CAFSR. Source: request to release public data from SUNAT (Letter N.º 000032-2022-SUNAT/3G0000 received on 26/08/2022) (SUNAT 2022[b]).

Type of control channel	2019		2020		2021		2022 (June)		
	Average hours	DAM	Average hours	DAM	Average hours	DAM	Average hours	DAM	
Prearrival	Free (Green)	2	4,033	2.7	3,974	2.5	8,786	1.7	5,476.0
	Documentary (orange)	44.7	521	66.2	759	45.1	742	33.8	536.0
	Physical (Red)	61.3	483	108.7	2277	93.8	2405	95.2	1214
Deferred	Free (Green)	71.6	824	83.3	75	107.4	99	97.2	18
	Documentary (orange)	149	787	170	138	210.3	76	138.6	20.0
	Physical (Red)	161.7	4317	209.1	1259	255.6	703	31.8	191.0
Urgent	Free (Green)	0.4	1682	0.8	1426	0.8	1347	0.7	799
	Documentary (orange)	3.2	108	3.9	108	6.8	61	3.4	85.0
	Physical (Red)	17.4	16	8.1	12	5.2	12	12.7	2.0
Average	Total	56.8	12,771	72.5	10,028	80.8	14,231	46.1	8,341

Table 1 shows the average hours for customs clearances and the number of customs declarations of goods (DAM) from 2019 to 2021. The number of hours for customs control was mainly reduced, even as DAM increased. While in 2019, 4,033 green-channel prearrival DAM were controlled in approximately two hours, in 2022 (from January to June), 5,476 were processed in 1.7 hours. Despite the DAM increase by 2022, the time of release was reduced (SUNAT 2022[b]). Also, the difference in terms of hours for prearrival or deferred declarations (made before or after the goods arrived in the country, respectively) is evident. For example, in 2022, for green-channel prearrival declaration, the customs control took 1.7 hours, while the same channel control in deferred declaration reached 97.2 hours (SUNAT 2022[b]).

The CAFSR experienced increased flows of goods, evidenced by the number of controlled DAM and the increase in prearrival declarations managed at the centre. Also, the case study showed a sustained reduction in customs’ time from 2019 to 2022. To maintain the trade facilitation gains achieved at the CAFSR, a continuous evaluation process is necessary; to this end, this report assesses primary challenges and public policy proposals.

3.2. Improvement opportunities at the Peru–Chile border

3.2.1. Infrastructure and logistics at the CAFSR

The CAFSR was inaugurated in 2007 on 168,800 square meters and has a built-up area of 66,800 square meters, located about 250 meters from the Peru–Chile border (Complejo Fronterizo Santa Rosa n.d.). It has three

platforms for control: the bus platform, people control modules, and the cargo platform. The cargo platform is divided into two areas: one for entrance (imports) and the other for exit (exports), in the Centres of Compliance Chacalluta (Chile) and Santa Rosa (Peru) (CAFSR).

In terms of logistics and infrastructure, there are multiple improvement opportunities. First, because of the increase in prearrival declarations and the designation of the CAFSR as an arrival point, as the case study revealed, immediate action is required to reorganise and enhance infrastructure with consideration for the new technologies (with high-energy scanners, container tracking, electronic seals, high technology cameras, automated registration, etc.) aimed to be implemented

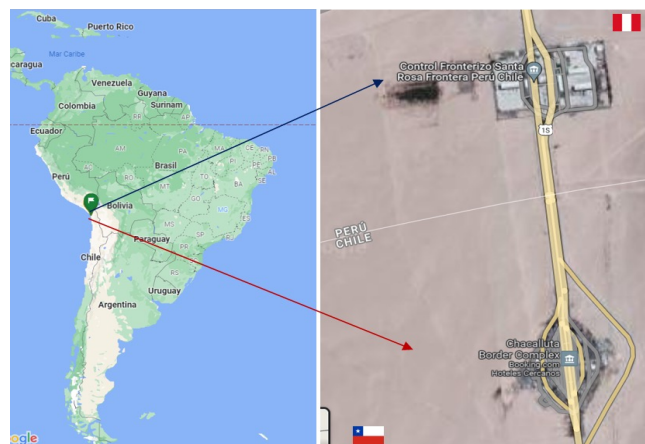


Figure 5. Map Showing Peru–Chile Land Border (Left) and Satellite View of Centres of Compliance Chacalluta (Chile) and Santa Rosa (Peru) (CAFSR) (Right). Source: Google Maps.

in the frame of the Smart Borders Project. Second, the customs controls carried out at the entrance area have separate customs administration processes for vehicles that a) are empty; b) have goods destined for Free Trade Zones or warehouses; c) are at the CAFSR arrival point; or d) are destined for international customs transit. They are currently controlled on a first-come, first-serve basis at the CAFSR, causing long waits. Third, multiple authorities control the entrance area at the CAFSR, processing the flows of people, vehicles, and goods. Customs administration, migration, and sanitary authorities are executing control according to their competencies (Peruvian Congress 2016). **Figure 6** demonstrates the sequential order that cargo vehicle importers need to follow at the CAFSR. First, the vehicle enters the CAFSR, is weighed and parked, then the driver passes through migration, sanitary control of the cargo is undertaken, and, finally, customs revision permits free entrance into Peru.

After the vehicles are parked at the CAFSR, they are subject to control by migration and sanitary authorities before customs control. This situation forces users to go

to different offices (as numbered in **Figure 7**), leaving their vehicles parked inside the entry area (import area). This situation causes some disorder and unnecessary delays in administration.

3.2.2. Release time of goods and control channel at the CAFSR

The second main challenge relates to a) the timeliness of the allocation and acknowledgement of the control channel, and b) the type of channel control assigned in the current conditions of the CAFSR.

In Peru, according to the Importation Procedure (SUNAT 2020[a]), the classifications that determine the type of customs control applied to imports are: a) green (free entrance), b) orange (documentary), and c) red (physical and documentary revision).

The Importation Procedure (Provision A2 1a) also regulates that channel control shall be assigned when the declaration is linked to the cargo manifest, except for land borders which require the transport to register at

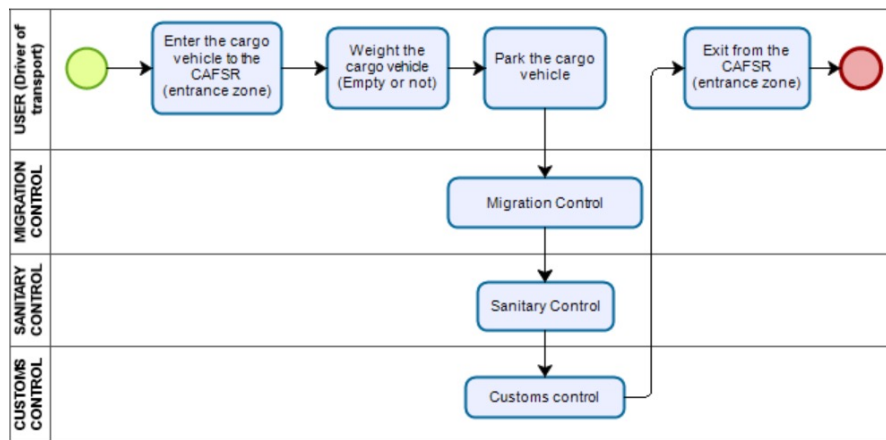


Figure 6. Flow Chart of Control Process of Cargo Vehicles in CAFSR. Source: the author.



Figure 7. Map Showing the Flow of Control Process Cargo Vehicles in CAFSR (Migrations, Sanitary, and Customs)

the border post (SUNAT 2020[a]). This is assigned when the customs specialist registers the imported goods arrival in the CAFSR's customs system.

As a result, importers and international traders become aware of the control channel in the CAFSR. Subsequently, the CAFSR contacts the owner and/or customs agent to request the digitised documents and initiate the corresponding control process without any logistics planned ahead of time (SUNAT 2020[a]).

In the case of document control in 2022 (up to June), the customs processing time was reduced to approximately 34 hours, which compared to 45 hours in 2021. This is an improvement, but there is still a long wait time at the border post and the warehouse for the review of documents (see Table 1) (SUNAT 2022[b]).

According to statistics provided by SUNAT, the percentage of imports at the CAFSR assigned to the green channel from 2019 to 2022 remained steady at around 60%, while around about 30% were assigned to the red channel and about 10% were assigned to the orange channel. This was despite modifications to the legal framework (see **Figure 8**).

The percentages of the channel of control (red, green, or orange) from 2019 to 2022, as determined by a selectivity system that identifies high- and low-risk goods, are likely to be motivated by several factors: type of traded goods, value (undervaluation), and proximity to the Free Trade Zone (Iquique, Chile), among others. The analysis done by the selectivity system at the CAFSR can be limited, as there is no mutual sharing of information between the customs of Peru and Chile that would permit early detection of fraud. In addition, by law, importers are allowed to send declarations upon arrival at the CAFSR, reducing the time of further evaluation by the selectivity system or by Tacna Customs' risk assessment division. This is a major problem meriting further research.

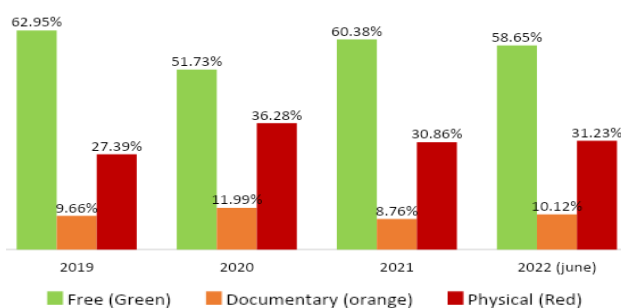


Figure 8. Percentage of Channel Control from 2019 to 2022 in Tacna Customs Administration. Source: Customs Administration of Tacna SUNAT report August 2022, via request for public data from SUNAT (Letter N.º 000030-2022-SUNAT/3G0000 received on 26/08/2022) (SUNAT 2022[b]).

Finally, documentary control occurs when a vehicle is parked at the CAFSR. This may lead to unnecessary delays, as the vehicle occupies a spot at the border post which obstructs the rapid flow of goods that require physical inspection or have been assigned a free entrance.

3.3. Novel solution to identified challenges

As a crosscutting public policy solution, digital blockchain technologies should be implemented for customs purposes. A blockchain, according to a report by the WCO and WTO (2022), is a source of crucial information and a foundation for policy decisions that can guarantee trade facilitation through digitalization.

WCO (Research Paper 45) defines blockchain as sophisticated cryptographic decentralized and distributed ledger architectures that can circulate information among participants in the 'network' (called nodes) on a peer-to-peer basis (Okazaki 2018). At the same time, this technology records changes, movement, and/or transactions almost instantly in a trusted and immutable manner. Another essential feature of blockchain technology is that transactions, or 'blocks', are time-stamped and are thus resistant to data modification. The records are linked, making a blockchain an efficient tool for recording events along the supply chain (Okazaki 2018).

The WCO and WTO Study Report on Disruptive Technologies (WCO & WTO 2022) recognizes several features of blockchain that make it a valuable technology for customs, including:

- **Increased Security:** Cryptographic techniques make blockchain unmodifiable and tamper-proof, and the decentralized and distributed architecture makes it highly secure.
- **Transparency:** The transactions can be traced by authorities using a chronological register to provide complete audits.
- **Efficiency:** Cryptographic techniques allow participants to interact on a peer-to-peer basis. This should increase trust between the participants, who can exchange information immediately.
- **Compliance:** Fraud is more difficult due to the verification of transactions and approval by consensus between the parties. This avoids the double-spending problem, making documentary fraud more difficult, monitoring more accessible, and a complete audit of transactions more straightforward.

3.3.1. Binational blockchain, a partnership between Peruvian and Chilean Customs

This paper proposes that Chilean and Peruvian Customs use binational blockchain technology to enhance

interoperability and traceability of the information between the customs administrations. This is expected to strengthen cooperation through the safe exchange of information, the offering of mutual administrative assistance, and the improvement of risk assessment to fight against illicit trade while facilitating the flow of goods (Yaren 2020). According to the WCO and WTO, the implementation of blockchain is in the experimental phase; of the customs administrations surveyed for 2021, 41% did not have a structured plan on the matter, 24% anticipated its implementation on the agenda over the next three years, 19% were working on proofs of concept, and 14% had pilot projects. (WCO & WTO 2022).

Peruvian and Chilean Customs administrations have already experienced the benefits of blockchain as part of the Cadena Project (Development International Bank 2021). This platform was developed by Microsoft with the sponsorship of the Inter-American Development Bank (WCO & WTO 2022). Its objective has been to enable blockchain users to share and access the Authorized Economic Operator (AEO) certificate status in real-time through its web platform. The country members affiliated with Costa Rica, Mexico, Chile, Colombia, Guatemala, Bolivia, Ecuador, and Peru currently have a Mutual Recognition Agreement that enables conformity evaluations (AEO credentials) conducted in one nation to be acknowledged in another (OECD 2022).

The blockchain technology applied to the customs administrations of Peru and Chile could provide a technological means of addressing the challenges highlighted by the CAFSR case study. This disruptive technology can share information on customs declarations (Yaren 2020), such as harmonized system codes, descriptions of goods, and values. Ideally, it would allow one border agency, whether in Peru or Chile, to receive secure and accurate data from the other, reducing and averting deliberate mistakes constituting fraud (undervaluation, overvaluation, or misdeclaration) (WCO & WTO 2022). It could also be used to track the origin of the data and enhance visibility in the supply chain. A practical example is "providing access to the commercial documents, starting with the initial purchase order between parties" (WCO & WTO 2022).

The blockchain technology used by customs administrations could improve the capacity of risk analysis and data mining. The users who export and/or import products must comply with the requirements and controls of both countries. Due to the lack of electronic, systematized tools operating in real-time, incongruencies are not immediately averted by the customs authorities present in the post or by any risk assessment tool. Consequently, illicit activities cannot be detected beforehand (as with data mining), and the selectivity channel is not sufficiently accurate.

Finally, it is important to note that blockchain can contribute to the accuracy of the selectivity system and the early detection of fraud patterns related to valuation, among others. As mentioned in the case study, approximately 30% of the declarations are red (physical and documentary) (SUNAT 2022[b]). Further investigation on the matter can include the influence of the channel of control, the type of goods traded, and the influence of Free Trade Zones (ZOFRATACNA-Peru and ZOFRI-Chile).

3.3.2. Blockchain partnership between Customs and other stakeholders

Blockchain permits information-sharing between stakeholders and customs administrations for the importation process at the CAFSR. In this way, they facilitate the automatic validation of customs assessments by comparing customs declarations (Format A and B) and money transfers accredited via bank transfer. SUNAT (Customs Administration) would administer tax on money transfers, and linking the information of the customs declaration with the transfers of money could help identify inaccuracies in declarations (Chura & Gomez 2020).

Among successful cases of the use of blockchain for customs purposes is B-Connect in MERCOSUR (the Common Southern Market, a large trading bloc in South America). It was developed by the Brazilian Customs Administration, integrating customs processes with Argentina, Paraguay, and Uruguay to share information on Authorized Economic Operators (AEOs) (ESCAP 2023). Another example emerged from Asia; in 2023, Thailand and Singapore reported their first paperless border transaction by ExxonMobil by the platform Trade Trust, which is based on blockchain technology (Galindo 2023). Taking B-Connect and ExxonMobil into consideration, as for Peru and Chile, the real-time sharing of information pertaining to importation and exportation declarations would be an asset.

The level of red declarations (30% as indicated in the case study) exceeds the recommendations of the WCO and WTO (2022) and constitutes a barrier to trade, especially considering that the flow of goods and prearrival declarations at the CAFSR has increased substantially. Blockchains for customs purposes could contribute to risk assessment and prompt detection of fraudulent activities by the customs administrations of Peru and Chile. Two leading public policy proposals were developed, sharing declarations between Peruvian and Chilean customs administrations and detecting possible value incongruencies. In addition to this, and complementing the developed proposal, additional aspects regarding infrastructure and logistics will be discussed in the section on further recommendations.

4. Conclusion

The Peruvian Customs Administration has recently implemented two measures that prioritise the facilitation of international trade: the 100% Digital Importation Procedure and prearrival declarations. Both measures have had a positive impact on trade facilitation, as the 2019-to-2022 CAFSR case study shows.

These recent modifications to the regulatory framework have coincided with a sustainable increase in importation prearrival declarations since 2020. While prearrival declarations were only made in 18% of cases in 2019, this number rose to 68% in 2022. Users have thus increasingly preferred customs control at the CAFSR over inland warehouses. The implementation of the 100% Digital Importation Procedure (since 2020) has simplified and digitalized the documentation, expediting the process with online tracking and customs notification. This impact on trade facilitation is evident through the reduction of the release time of imports from around 70 hours in 2019 to 20 in 2022.

In sum, most entrance declarations at the CAFSR are prearrival. This has enhanced trade facilitation by reducing the time required to clear imported goods through customs. Nevertheless, CAFSR infrastructure needs to be improved to address new challenges, consider a differentiated control process by type of regime, and reorganise the inter-institutional prerogatives to streamline and foster joint efforts.

In addition to these aspects, a suggested crosscutting innovation is the implementation of blockchain technology for customs purposes at the CAFSR, potentially a comprehensive solution aligned with public policy objectives, security enhancement, transparency, efficiency, and compliance. By establishing a binational blockchain system, information sharing, interoperability, and traceability could improve, in turn strengthening risk assessment and combating illicit trade. Collaboration with stakeholders such as banks enhances fraud detection.

Successful international experiences demonstrate blockchain’s potential for customs. Embracing this technology could foster greater cooperation, facilitate legitimate trade, and ensure effective border control. Overall, blockchain technology holds promise for transforming customs administration and advancing trade facilitation between Peru and Chile. The next section presents further recommendations relating to infrastructure, logistics and the release of goods, and the control channel allocation system.

5. Implications and Recommendations (Public Policy Options)

In this section, some public policy options that align with the framework of PENX (facilitating efficient trade and improving logistics and international transport) and the components of the Smart Borders Project will be discussed. The latter carries the objective of modernising the customs control systems to make them less intrusive and more intelligent, improving trade facilitation.

Smart Borders is based on the five pillars of the World Customs Organisation (WCO & WTO 2022) for a modern entity: to be secure, measurable, automated, with strategic risk management, and promoting the intensive use of technology. It has two components: a) smart maritime, air, and land borders, and b) risk assessment and intelligence in customs processes.

The first component (a) includes a new control model at ports, airports, and land borders, with high-energy scanners, real-time container tracking, electronic seals, advance declarations, facial recognition cameras, and automated registration, which will reduce costs and times for imports and exports.

The second component (b) proposes a new control and intelligence system that will allow for greater

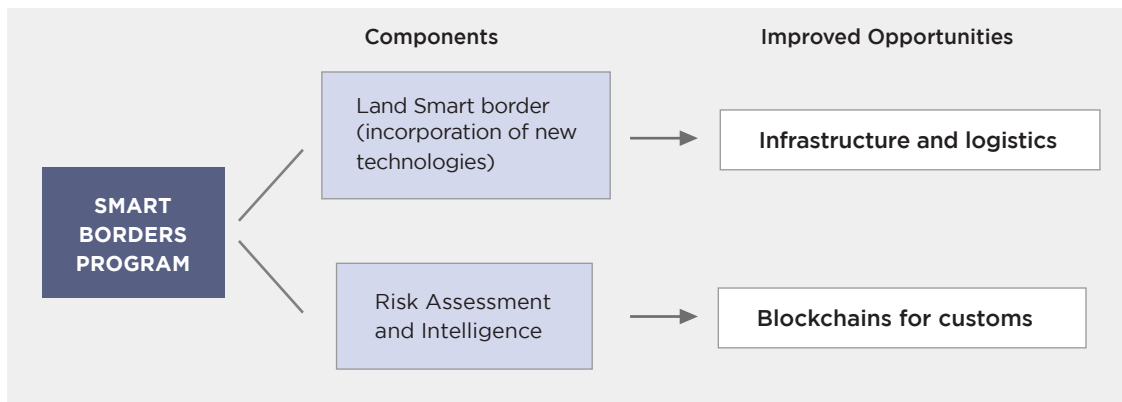


Figure 9. Smart Borders Components and Relationship with Improvement Opportunities. Source: the author.

transparency and for control actions to be traced online. To this end, SUNAT proposes the incorporation of artificial intelligence tools that make it possible to predict new fraud patterns, massively exploiting the information using a new Big Data platform (Delgado 2020, 748).

5.1. Infrastructure and logistics in the CAFSR

The CAFSR is part of the proposed smart land border. The infrastructure, connectivity, and security of the CAFSR will be enhanced as traceability standards in the logistics chain improve and the further development of risk management monitoring mechanisms occurs (among others). Considering the challenges identified, the following policy options should be pursued.

5.1.1. Infrastructure and rearranging authority control at the CAFSR

Improving CAFSR infrastructure is outside the scope of the Smart Borders Project. The Customs Administration announced that the expansion of the CAFSR will be evaluated in the medium term (SUNAT 2022). According to Legislative Decree No 1183, SUNAT is the entity responsible for developing and coordinating the public inversion project for the maintenance and operation of Centres of Compliance infrastructure, equipment, technology, and security (Peruvian Congress 2016). It acts as an articulator, and under its leadership, it is advised that the infrastructure of the Chile–Argentina border post “Los Andes” should be followed as an example when structuring these centres. Los Andes (Figure 10) is organised efficiently with different gates of attention. Vehicles do not park and limit the authorities’ control, and there is a private administration company in charge of the administration of the centre.



Figure 10. View of the Chile–Argentina border post “Los Andes”. Source: Puerto Terrestre Los Andes website (<https://www.ptla.cl/quienes-somos/>), public domain.

The suggested CAFSR improvements are motivated by the following aspects:

- Its infrastructure involves administrative functions from three different institutions: Customs, Migration, and Sanitary. At Los Andes, each authority is placed in the small building on the left (Figure 10). Vehicle parking is separated from the authorities and customs control, resulting in minimal bottlenecks or other obstructions to the flow of goods.
- The Los Andes model has different gates of attention for cargo control, allowing differentiated attention according to the process vehicles need to execute.

The border post is administrated by the private company Land Port Private Concession Los Andes S.A., which also provides warehouses and logistic services to the cargo, among other services. It allows users to hire additional services if necessary. This is an example of the private sector allying with public infrastructure, as, for example, multinational corporations DP World and APM Terminals operate in the Marine Port of Callao-Lima, Peru.

Finally, it is necessary to mention that a joint cargo control (juxtaposed model) is programmed in the second stage of Integrated Control by the governments of Peru and Chile (Peruvian Congress 2011). Currently, Integrated Control only operates for tourism-related vehicles, and both administrations have discussed their performance in bilateral reunions since 2018. Recently, in August 2022, it was reported in the Integration Subcommittee that the Chilean government approved the investment for the infrastructure modification in the Centre of Compliance Chacalluta (Chile) that was required to execute joint control by Peruvian and Chilean authorities, wherein both customs work jointly in both border posts (CAFSR or Chacalluta) (Chilean Customs 2015). An example of this joint control in practice is in the CAFSR, where Chilean authorities control the exportation, and Peruvian authorities conduct importation revision immediately afterwards (Chilean Customs 2015). This should be considered, as it would rearrange customs control so that authorities are pushed to execute border controls collaboratively.

In the short term, it is recommended that a commission be formed by current employees of SUNAT to extensively revise the current process of customs control and identify the best manner to install Smart Borders technological devices. Moreover, in the extended future, the planned expansion of the CAFSR should consider incorporating the main characteristics of the Los Andes border post. It has separated control between customs, migration,

and sanitary in a concessioner infrastructure where other primary logistics and services are provided. Additionally, regarding the rearrangement of control made by authorities, it should include the principles of interagency arrangement under the Coordinated Border Management (CBM) principles. There must be cooperation between border agencies on a voluntary basis to establish joint control, manage customs and sanitary, plan traffic, and reduce bottlenecks (Aniszewski 2009). CBM represents “an approach to manage borders involving public service agencies working across portfolio boundaries in a coordinated manner to achieve a shared goal thus providing a cohesive government response to the challenge of borders” (Aniszewski 2009).

5.1.2. Sub Process customs—lack of differentiated control

PENX recognises the relevance of improving border management to optimise customs clearance and prioritise post-clearance controls (Minister of International Trade and Tourism of Peru 2013). In this regard, customs control should be differentiated based on the type of goods, regime, or destination in the customs process. It is recommended that a fast line be implemented to expedite cross-border traffic of low-risk pre-registered users. To this extent, low-risk cargo, vehicles, or drivers would be subject to a less extensive revision, leaving the high-risk cargo to be controlled by the new technologies that the Smart Borders Project will implement (e.g., non-intrusive scanners). As a reference, the Border Service Agency (CBSA-Canada) and Border Protection (CBP-US) host the programs Fast Line and Sentry, respectively. They enable the rapid flow of low-risk vehicles and pre-approved trusted traders to pass through special traffic light gates, prioritising the rest (Canada Border Services Agency 2022). In sum, the proposals regarding infrastructure modifications and differentiated control should be planned in medium- and short-term, considering the planned Smart Borders Project modifications at the CAFSR.

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