



REPUBLIC OF TURKEY

OSTİM TECHNICAL UNIVERSITY

**REDUCING EXPORT DOCUMENTATION
BARRIERS: A PROTOTYPE-BASED
SOLUTION WITH CERTIFIGO**

GRADUATION PROJECT

KÜBRA BAYRAM

190101012

**FACULTY OF ECONOMICS AND ADMINISTRATIVE
SCIENCES**

ADVISOR

ASST. PROF. DR. HASİBE AYSAN

MAY, 2025

ANKARA

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PREFACE

This graduation project was prepared within the scope of my studies at Ostim Technical University, Department of International Trade and Finance. The subject of this project was chosen because of the problems I encountered during my internships and my work in the field of export. I noticed that many companies had difficulty finding the documents and certificates they needed for different countries. This gave me the idea of creating a simple tool that could help exporters find this information more easily.

I would like to thank my advisor Assoc. Prof. Dr. Hasibe Aysan for the support, guidance and useful advice she gave me during this project. Her comments helped me improve my work step by step.

I would also like to thank Mr. Selman Selim Taşdemir, the founder of Alyattes, where I did my last internship. He taught me how important professionalism and business ethics are in business life, and I learned a lot from him.

I would like to thank all my professors and the institutions where I completed my internships, especially the Ministry of Trade and the DAC Consulting Group. These experiences helped me better understand international trade and the problems exporters face.

I owe a special thanks to my husband Oğuzhan Bayram, who has supported me at every stage of this journey for the last six years. He also technically helped me to create the prototype of this project. His encouragement made this process easier for me. Also, I would like to express my sincere thanks to my daughter, my family, and my cousin, Dr. Figen Gündüz, a chemical engineer, whose guidance and encouragement have meant a great deal to me during my years of study. This journey would not have been possible without their unwavering support.

I hope this project will be useful to others and help small businesses on their export journey.

Kübra Bayram

Ankara, May 2025

ABSTRACT

This study investigates the challenges exporters face when accessing certification requirements for different product groups and international markets. While certification is a key component of trade compliance, the lack of centralized, accessible, and up-to-date information often creates barriers, especially for small and medium-sized enterprises (SMEs).

The research involved structured interviews with 120 firms across 10 countries, a review of institutional responses from the Turkish Ministry of Trade's "Ask the Trade Attaché" platform, and manual analysis of official websites related to six HS codes. A structured comparative analysis method was used to systematically identify documentation patterns and inconsistencies.

Findings revealed that SMEs frequently struggle to locate the correct certificates, interpret foreign regulatory sources, and manage documentation timelines. Institutional tools were found to be insufficiently detailed, and manual research proved time-consuming and fragmented. To address these issues, a prototype tool named CertifiGO was developed using Google Sheets and Glide. The tool enables users to select a country and HS code and instantly view the required and optional certificates with explanatory notes.

Although the system was built manually, the findings underline the strong potential of integrating artificial intelligence in future versions to automate data extraction, translation, and classification. CertifiGO demonstrates how digital tools can simplify certification access, reduce export delays, and support SMEs in navigating international trade requirements more efficiently.

Keywords: Certification Requirements, Export Barriers, SMEs, International Standards Certification, Digital Trade Tools, Artificial Intelligence

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1. INTRODUCTION

Exporting goods to international markets involves much more than simply managing logistics and ensuring product quality. One of the most underrated but critical challenges is navigating the complex web of documentation and certification requirements that vary significantly between countries and even products. While significant attention has been paid to tariff-based trade barriers, recent literature shows that non-tariff measures (NTMs), such as health certificates, standards of conformity, labeling rules, and technical documentation, continue to impede international trade, especially for small and medium-sized enterprises (SMEs) (Manaf and Ahamat, 2022). These NTMs are often fragmented, poorly communicated and inconsistent across jurisdictions, posing a significant risk to exporters who are not fully aware of country-specific obligations.

In most cases, documentation requirements are not easily accessible through central platforms. They are usually written in the official language of the importing country, can vary depending on product classification (HS code) and are sometimes subject to rapid regulatory changes. This creates an information asymmetry that particularly affects SMEs that lack internal compliance capacity or international business expertise. As highlighted by Fliess and Busquets (2006), exporters regularly face shipment rejection, customs delays or unnecessary costs simply due to documentation errors or lack of appropriate certification.

In response to this real-world challenge, this project proposes a practical and scalable digital solution: CertifiGO, a prototype tool developed to close the knowledge gap regarding export documentation. CertifiGO is designed to provide exporters with a clear, easy-to-navigate platform to discover certification requirements applicable to their products and destination countries. Built on a structured data set compiled from multiple verified sources, the system enables direct comparison of required and optional documents across ten countries and six HS codes. These product groups cover a variety of sectors, including fresh produce (e.g. green plums), automotive care chemicals, animal feed supplements, wooden furniture, roasted coffee and carpets, and provide a broad representation of both agricultural and industrial exports.

The platform is built using Google Sheets and Excel with an intuitive pop-up interface. Users select a target country and the relevant HS code to view relevant certification obligations, with

brief descriptions and direct links to authorities or downloadable document templates, if available. The CertifiGO interface is divided into three functional parts: (1) the Lookup Table, which provides a backend structure that maps each country-product combination; (2) the Interactive Interface, where users make real-time selections; and (3) the Certification Guide, which explains the purpose of each certification and the authority to grant it. Since the system is entirely in English, it can be accessed by a global audience regardless of local business languages.

The motivation behind this project stems from practical experience in the field of export consultancy, where many companies encounter last-minute documentation problems; These problems are not caused by negligence, but by lack of awareness of the necessary paperwork at the beginning. In some cases, even direct communication with trade offices or trade attaches has yielded incomplete or vague responses. The difficulty of accessing accurate, consolidated information continues to be one of the biggest challenges facing SME exporters. The United States International Trade Commission (2013) reported similar findings in its study of US SMEs, finding that information gaps in document compliance were one of the leading causes of poor export performance.

To illustrate what a real certification document looks like in practice, a sample phytosanitary certificate issued by the Canadian Food Inspection Agency (CFIA) has been included below. **(Figure1.1.)** This visual example supports the discussion above by providing a concrete reference to the type of documentation exporters must prepare—especially in the agricultural sector, where compliance with plant health regulations is both mandatory and time-sensitive.

Phytosanitary certificates are among the most critical documents required for the cross-border movement of plant-based goods. They serve as official confirmation that the products meet the importing country's sanitary and regulatory standards. By including this figure, the aim is to help readers better understand not only the technical terminology but also the formal appearance, structure, and content of such certificates.

This example complements the theoretical explanation provided earlier and serves as a visual bridge between academic discussion and real-world export practices.

Figure 1.1 Sample Phytosanitary Certificate Issued by CFIA

This certificate was prepared for the export of ginseng to China and demonstrates compliance with the importing country's regulations.

 Canadian Food Inspection Agency / Agence canadienne d'inspection des aliments	
PHYTOSANITARY CERTIFICATE / CERTIFICAT PHYTOSANITAIRE	
To: Plant Protection Organization of (Country of Destination) A: Organisation(s) de la Protection des végétaux de (pays destinataire)	
No. - No. 3085600	
References - Références	
DESCRIPTION OF CONSIGNMENT / DESCRIPTION DE L'ENVOI	
Name and Address of Exporter - Nom et adresse de l'expéditeur	
Declared Name and Address of Consignee - Nom et adresse déclarés du destinataire	
Number and Description of Packages - Nombre et nature des colis	
Distinguishing Marks - Marques distinctives	
Place of Origin - Lieu d'origine ONTARIO, CANADA	Declared Means of Conveyance - Moyen de transport déclaré AIR
Declared Point of Entry - Point d'entrée déclaré Ulsan, CHINA	
Name of Produce and Quantity Declared / (Botanical Name of Plants) - Nom du produit et quantité déclarée / (Nom botanique des plantes)	
GINSENG ROOT (DRIB) / Panax spp.	
This is to certify that the plants, plant products or other regulated articles described herein, have been inspected and/or tested according to appropriate official procedures and are considered to be free from the quarantine pests specified by the importing contracting party, and to conform with the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests. C'est certifié que les végétaux, produits végétaux ou autres articles réglementés décrits ci-dessus ont été inspectés et/ou testés suivant des procédures officielles appropriées et estimés exempts d'organismes de quarantaine comme spécifié par la partie contractante importatrice; et qu'ils sont jugés conformes aux exigences phytosanitaires en vigueur de la partie contractante importatrice, y compris à celle concernant les organismes réglementés non de quarantaine.	
DISINFESTATION AND/OR DISINFECTION TREATMENT / TRAITEMENT DE DESINFESTATION ET/OU DE DESINFECTION	
Date - Date	Treatment and Details - Traitement et détails
Seal - Sceau	ADDITIONAL DECLARATION / DÉCLARATION SUPPLÉMENTAIRE
	
Place of Issue - Lieu de délivrance TORONTO, ONTARIO, CANADA	Name of Authorized Officer - Nom du fonctionnaire autorisé ZOU, XIAOLING
Date - Date 2018/01/31	Signature - Signature
No liability attached to the Canadian Food Inspection Agency or any of its officers in respect of this certificate. Aucune responsabilité n'est imposée à l'Agence canadienne d'inspection des aliments ni à aucun de ses agents à l'égard du présent certificat.	

CFIA 1327 (2015/10) Original



A comparative analysis methodology was used to support CertifiGO's design and functionality. Data was collected from publicly available sources, including national trade ministries, certification bodies and embassy trade websites. Additionally, for each HS code in each of the ten countries, at least two potential or existing customer contacts were surveyed or contacted to cross-check document expectations in real-life scenarios. This enriched the dataset with field-based information and ensured theoretical compatibility with practical expectations.

Once the data was cleaned and categorized, it was presented in a visual structure optimized for user navigation and operational clarity. The goal was not only to create a digital prototype, but also to design a repeatable and scalable framework that could be integrated into larger trade databases or public export portals. While the current version of CertifiGO is limited in terms of automation, it provides the basis for future upgrades such as multilingual support, real-time regulatory updates, and mobile access.

Ultimately, this graduation project addresses one of the most practical yet often overlooked challenges in international trade: the ability to quickly and reliably determine certification requirements for a given product-country pairing. With the development of CertifiGO, the project contributes to closing the information gap, reducing procedural delays, and increasing the global competitiveness of small-scale exporters. As a result, this initiative aligns with the broader goals of trade facilitation and digital innovation in export strategy.

2. LITERATURE

2.1. Certification Systems as Non-Tariff Barriers

In today's global trade environment, certification systems have become one of the most common types of non-tariff barriers (NTBs), especially affecting small and medium-sized enterprises (SMEs). Although certifications are designed to ensure product quality, safety, and standardization, they can act like invisible barriers that restrict the entry of goods into foreign markets. Unlike tariffs, these barriers are not direct taxes but can increase costs and delay transactions.

The OECD (2006) states that NTBs such as labeling requirements, product conformity assessments, and mandatory certifications pose significant hurdles for firms attempting to expand internationally. Similarly, the World Trade Organization (2016) emphasizes that SMEs are particularly vulnerable to these barriers because they have fewer resources to manage complex documentation and certification processes.

Recent research has also shown that the number of mandatory and voluntary certification schemes is growing due to globalization. According to Chen, Sousa, and He (2020), SMEs often feel overwhelmed by the different certification standards required by various countries, which can cause a phenomenon called "compliance fatigue." Moise and Le Bris (2013) also argue that even voluntary certifications can serve as hidden barriers if they are required to meet market expectations, making it difficult for smaller exporters to compete.

In industries like food, agriculture, textiles, and manufacturing, where standards differ from country to country, certification is not just a formality but a condition for entering the market. As a result, exporters who cannot comply with these certification requirements may lose competitiveness and be excluded from global trade networks.

2.2. Challenges Faced by SMEs in Certification Processes

Certification processes present a wide range of challenges for SMEs. Due to their smaller scale, they often lack the financial resources, technical know-how, and human capital needed to efficiently manage complex certification procedures. Unlike large multinational corporations, SMEs rarely have specialized departments to deal with regulatory compliance. Instead, business

owners or managers themselves must try to understand and navigate the complicated certification requirements.

Manaf and Ahamat (2022) conducted a study on Malaysian agribusiness SMEs and found that many firms could not complete certification because of high application costs, confusing procedures, and long approval times. Some SMEs even had to abandon their export plans due to these obstacles. The WTO (2016) similarly points out that certification-related expenses take up a larger proportion of revenue for SMEs compared to larger companies, putting smaller exporters at a financial disadvantage.

In addition to financial and operational burdens, SMEs often suffer from information gaps. Grazzi and Jung (2016) state that many small businesses do not know where to find reliable and updated information on certification requirements. This creates an environment where SMEs may miss important deadlines, choose incorrect certification paths, or fail to comply with new regulations.

Furthermore, Lazo and Saunders (2010) highlight that some SMEs are forced to hire external consultants, which increases costs even more and makes the certification process riskier. If consultants are not well-versed in international standards, companies may waste both time and money without achieving compliance. Overall, these challenges create a major barrier for SMEs wishing to expand into international markets.

2.3. Timing and Operational Constraints in Certification

For example, the GLOBALG.A.P. certification, which is especially important in fresh produce exports, demands that producers maintain at least three months of record-keeping before the first audit (GLOBALG.A.P., 2022). If a producer fails to meet this requirement, they may not qualify for certification and could miss an entire export season. This can cause major financial losses, especially in industries where products are perishable and time-sensitive.

Henson and Humphrey (2010) also stress that perishable sectors like fruits, vegetables, dairy, and seafood are especially vulnerable to certification delays. Since these products have short shelf lives, even small disruptions in certification timing can result in spoiled goods, canceled shipments, and unhappy customers.

Companies that are well-prepared often develop internal systems to track certification deadlines, maintain proper documentation throughout the year, and conduct pre-audits to

identify any potential problems. Digital tools and certification management platforms are becoming increasingly important for SMEs trying to stay ahead of operational constraints. Without early and organized planning, certification becomes a stressful and risky process.

2.4. The Need for Centralized and Accessible Platforms

One of the biggest problems SMEs face today is the fragmented and inconsistent nature of certification information. Every country has its own set of rules, and even for the same product, the required certifications can vary widely. This creates confusion and increases the risk of non-compliance.

Goedhuys and Sleuwaegen (2016) explain that exporters in developing countries suffer more from what they call "institutional voids," where official information on certifications is either missing, outdated, or too complicated to understand. Otsuki (2011) shows that when firms can easily access up-to-date information about international standards, their chances of succeeding in exports increase significantly.

Borchert, Gootiiz, and Mattoo (2014) add that online regulatory platforms can reduce transaction costs and help SMEs navigate complex certification systems more efficiently. A centralized system where exporters can search certification requirements by product category (such as HS codes) and destination country would save time and lower the risk of mistakes.

Some initiatives already exist, but many are limited in scope or difficult for smaller firms to use. Ideally, governments, trade organizations, and private sectors should collaborate to build user-friendly, multilingual, and constantly updated platforms. Such tools would not only make certification easier but also encourage more SMEs to participate in global trade by reducing their fear of regulatory complexity.

Table 2.1: Exporting Performance of Firms With and Without International Standards Certification (ISC) (Goedhuys & Sleuwaegen (2016))

	Non-exporting	Exporting	Total
Full sample	12,352(67.12%)	6,052 (32.88%)	18,404
Firm with ISC	2,207 (43.13%)	2,910 (56.87%)	5,117
Firm without ISC	10,145 (76.35%)	3,142 (23.65%)	13,287
Lower half ‘weak’ countries			
Full sample	7,997 (72.77%)	2,993 (27.23%)	10,990
Firm with ISC	902 (42.43%)	1,224 (57.57%)	2,126
Firm without ISC	7,095 (80.04%)	1,769 (19.96%)	8,864
Upper half countries			
Full sample	4,355 (58.74%)	3,059 (41.26%)	7,414
Firm with ISC	1,305 (43.63%)	1,686 (56.37%)	2,991
Firm without ISC	3,050 (68.96%)	1,373 (31.04%)	4,423

As shown in Table 1, the export rate of ISC-certified firms is significantly higher than that of non-certified firms, particularly in developing countries. This table presents data on 18,404 firms and analyzes their exporting behavior based on whether or not they hold international standards certifications (ISC). The data is further segmented by country type, distinguishing between ‘weaker’ and ‘stronger’ economies.

In the overall sample, firms with ISC show a much higher export rate (56.87%) compared to firms without ISC (23.65%). The trend holds consistently across different country segments. In economically weaker countries, the export participation of ISC holding firms reaches 57.57%, whereas it drops to just 19.96% for uncertified firms. This implies that certification plays a significant role in enabling market access, particularly in environments where trade infrastructures are less developed.

Interestingly, in the stronger half of the countries, the export rate for ISC-certified firms (56.37%) is slightly lower than in weaker countries, but still substantially higher than that of uncertified firms (31.04%). This highlights the universal advantage of certification for trade performance, with a notably higher impact in developing markets.

3. METHODOLOGY

3.1. Problem Definition and Data Collection Approach

In the context of international trade, understanding certification requirements for products is crucial. However, these requirements are often fragmented across multiple sources, written in different languages, and not easily accessible for small and medium-sized enterprises (SMEs). SMEs generally lack the internal capacity and financial resources to constantly monitor certification changes for different countries and product categories.

To better understand this problem and propose a practical solution, data collection was conducted focusing on six HS codes and ten target countries. The selected HS codes represented a range of sectors including fresh produce, animal feed supplements, automotive products, and wooden furniture, offering a diverse view of certification needs.

Primary data was gathered through fieldwork by contacting 120 exporting companies. For each product-country combination, at least two companies were contacted by phone. During these conversations, firms were asked about the certification documents they commonly needed for exporting the specified product to a certain country. This method provided real-world insights into documentation expectations, beyond what could be found through secondary online research.

Additionally, inquiries were made through the Turkish Ministry of Trade's "Ask the Trade Attaché" platform, which enables exporters to seek information directly from commercial counselors stationed abroad. However, most responses received were general referrals to external websites, without detailed certification lists. This experience highlighted the difficulties SMEs face when trying to obtain official information in a clear and targeted manner.

Thus, a combination of field verification (company calls) and secondary data sources (government websites, international certification bodies) was used to construct the database for the prototype.

3.2. Research Design

The research design focused on building a practical, easy-to-use system that organizes certification requirements based on product and destination. No surveys or controlled experiments were conducted; instead, the project relied on real-world company interactions and web-based data collection.

Initially, a static prototype was created using Google Sheets and Microsoft Excel. Dropdown menus were developed to allow users to select the HS code and the country, and corresponding certification requirements were automatically displayed through simple formula functions such as IF, INDEX, and MATCH.

However, as the amount of data grew and usability became a concern, a decision was made to transition the prototype into a more dynamic, mobile-friendly platform using Glide. Glide is a no-code app development tool that converts spreadsheet data into interactive applications without the need for advanced programming skills.

Using Glide, a new version of the prototype was developed, offering dropdown selection for HS codes and countries, instant display of required and optional certifications, a certificate guide that explained document purposes in user-friendly language, and mobile compatibility, making it easy for exporters to access information on the go. This transition from Excel to Glide made the tool more intuitive and practical, allowing for real-time interaction and better scalability in the future.

3.3. Data Sources

The data used in this project was collected from both field-based and online sources. The first The data for this project was gathered from both field-based and online resources. A total of 120 phone interviews were conducted with exporting companies representing various sectors such as agriculture, automotive supplies, and furniture manufacturing. Each product and country combination was verified by contacting at least two different companies. Although some companies were very cooperative and provided detailed information about required certifications, others were reluctant to share specifics due to confidentiality concerns. In such cases, repeated follow-ups were necessary to obtain clear and consistent responses.

In addition to fieldwork, extensive research was carried out through official websites of customs authorities, ministries of agriculture, and food safety agencies across the ten selected countries. Some websites offered downloadable templates and step-by-step guides for obtaining certificates, while others only provided basic overviews without detailed procedures.

Additionally, certification-related questions were submitted to the Turkish Ministry of Trade's "Ask the Trade Attaché" platform for each product-country pair. However, most responses were vague and failed to provide detailed guidance about specific documentation. Instead, exporters were often redirected to foreign websites without any structured explanation of what certificates were needed or how to obtain them. A visual example of this process, including the inquiry form and one of the responses, is provided in Appendix Figure A1 and A2.

Finally, global certification bodies such as GLOBALG.A.P. and ISO were consulted to understand internationally recognized standards. Their platforms provided clear definitions of certification processes, application requirements, and compliance timelines. All information was then translated into English, categorized based on HS codes and countries, and simplified for easy integration into the CertifiGO prototype.

Figure 3.1: Lookup Table showing HS codes, destination countries, and associated certification requirements

	A	B	C	D	E	F	G	H
1	Country	HS Code-Product	Certificate	Mandatory/Opti	Notes			
2	Norway	0809.40-Green Plum	GlobalGAP (Good Agricultural Practices Certification)	Mandatory	Issued by accredited GlobalGAP bodies			
3	Norway	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Agricultural Ministry			
4	Lebanon	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Ministry of Agriculture			
5	Lebanon	0809.40-Green Plum	Certificate of Origin	Mandatory	Issued by Chamber of Commerce			
6	Germany	0809.40-Green Plum	GlobalGAP (Good Agricultural Practices Certification)	Mandatory	Issued by accredited GlobalGAP bodies			
7	Germany	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by local plant protection organization			
8	Germany	0809.40-Green Plum	Maximum Residue Limit (MRL) Test Report	Optional	Issued by certified laboratories			
9	United Kingdom	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by DEFRA or local authority			
10	United Kingdom	0809.40-Green Plum	GlobalGAP Certificate	Mandatory	Issued by accredited GlobalGAP bodies			
11	Netherlands	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by NVWA			
12	Netherlands	0809.40-Green Plum	GlobalGAP Certificate	Mandatory	Issued by GlobalGAP licensed organizations			
13	Canada	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by CFIA			
14	Canada	0809.40-Green Plum	Organic Certification	Optional	Issued by Ecocert Canada			
15	Albania	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Ministry of Agriculture			
16	Qatar	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Agricultural and Livestock Affairs			
17	Qatar	0809.40-Green Plum	Halal Certificate	Optional	Issued by approved Islamic centers			
18	Russia	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Rosselkhoznadzor			
19	Russia	0809.40-Green Plum	GOST Certification	Optional	Issued by authorized certification bodies			
20	UAE	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Ministry of Climate Change and Environment			
21	UAE	0809.40-Green Plum	Halal Certificate	Optional	Issued by approved Islamic organizations			
22	Norway	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Issued by accredited laboratories			
23	Norway	3405.30-Vehicle Cleaning Products	MSDS (Material Safety Data Sheet)	Mandatory	Provided by manufacturer			
24	Norway	3405.30-Vehicle Cleaning Products	ISO 9001 (Quality Management System)	Optional	Issued by certified ISO bodies			
25	Lebanon	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Laboratory issued			
26	Lebanon	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Manufacturer issued			

As shown in **Figure 1**, the Lookup Table was designed to organize the collected data by linking HS codes and destination countries with their corresponding certification requirements. This systematic organization allowed for easy navigation and later integration into the Glide-based application. The Lookup Table serves as the primary database for the CertifiGO prototype. It systematically organizes the relationship between each product-country pair and the certifications required for export. For each entry, the table includes four critical elements:

1. The country of destination,
2. The HS code and product name,
3. The specific certificate needed,
4. Whether the certificate is mandatory or optional.

In addition, a notes section provides details about the issuing authority for each certification, offering users clarity on which institution or body must validate the documents.

By displaying this information in a structured, tabular format, the Lookup Table ensures that exporters can quickly find the certification requirements relevant to their products and markets without consulting multiple, fragmented sources.

This table was initially created using Google Sheets and later integrated into the interactive Glide prototype to allow dynamic user filtering and certificate lookup.

In addition to field-based interviews, extensive online research was conducted to identify certification requirements for 10 countries and 6 product groups. The process involved systematically reviewing the official websites of government institutions, certification bodies,

customs authorities, and food/agriculture ministries. A complete list of the websites consulted is provided under the section titled Websites Consulted for Certification Research in the References.

3.4. Structured Comparative Analysis

This project uses a structured comparative analysis method to present certification requirements for different countries and product categories. This approach was chosen as the most appropriate approach since the data in this study is not numerical and is based on categories such as countries, products and document types. The aim is not to make statistical calculations but to clearly and systematically show the differences between country regulations.

The analysis focuses on six HS codes and ten countries. For each product-country combination, the required and optional certificates were identified. The certificates are briefly explained and classified according to whether they are mandatory or optional. When possible, notes are also added on when they are needed or which authority issues them.

This method helps to compare countries in terms of their document requirements. For example, some countries have very detailed requirements for agricultural exports, while others accept more general certificates. By organizing the data in this way, it becomes easier to understand how complex the export process can be depending on the target market.

The same structure is used in the CertifiGO prototype. When users select a country and HS code, the relevant certificates automatically appear according to this organized dataset. This makes the information useful not only in this report but also in actual export planning.

In summary, the use of structured comparative analysis helped to translate field-based findings into a clear system that allowed exporters to see what documentation they needed and compare differences between markets.

3.5. Limitations of the Study

Although this study offers practical insights for exporters, there are certain limitations that should be acknowledged. First of all, the scope is limited to ten countries and six HS codes. Because of this, the findings cannot fully represent the entire global trade environment or cover every export product.

The prototype developed here was created using Google Sheets and Excel. While it functions well for demonstration purposes, it does not offer features like real-time updates or advanced automation. It is a basic tool and not a professional-level application, which means there is room for future development.

Another point is related to the answers received from official sources such as the “Ask the Trade Attaché” platform. In most cases, these responses were very general, often just directing users to external websites. As a result, the data collected lacked consistency and detail, especially when trying to understand specific document requirements.

More importantly, this project does not include any analysis of the financial consequences caused by certification problems. While it is well known that document issues can lead to delays or rejections in trade, no concrete data or published academic studies were found that calculate the actual monetary loss. For that reason, this project only focuses on the accessibility and clarity of certificate information, not the economic impact.

Finally, the research does not use statistical models or quantitative analysis. It is based on practical experience, online research, and structured comparisons between countries and product groups. Its goal is not to make forecasts or prove a theory, but rather to help exporters find the information they need in a more organized way.

3.6. Structure of the Prototype

The CertifiGO prototype was developed to transform fragmented and difficult-to-access certification information into a centralized, user-friendly tool. Its design followed three main components: the Lookup Table, the Interactive Interface, and the Certificate Guide, all working together to support exporters in quickly identifying necessary documentation.

The Lookup Table functions as the database backbone. It organizes the information collected during the research phase by matching HS codes and destination countries with the certificates required or recommended. Each entry is accompanied by notes explaining the certificate’s relevance, validity periods, and responsible authorities. This structure allows for easy navigation and ensures that users can access consistent information without needing to search multiple websites.

The Interactive Interface was designed with simplicity in mind. By using dropdown menus, users can filter data based on the selected product and target market. The system then displays required and optional certificates dynamically. When transferring the system to Glide, these logical relationships were preserved, and the app's visual interface made it even more intuitive for non-technical users.

The Certificate Guide adds further value by providing brief but essential explanations of each certificate type. It addresses common questions such as "Why is this certificate needed?", "When should it be obtained?", and "Which authority issues it?". Instead of overwhelming users with technical jargon, the guide uses simple language, ensuring accessibility for SMEs without specialized compliance departments.

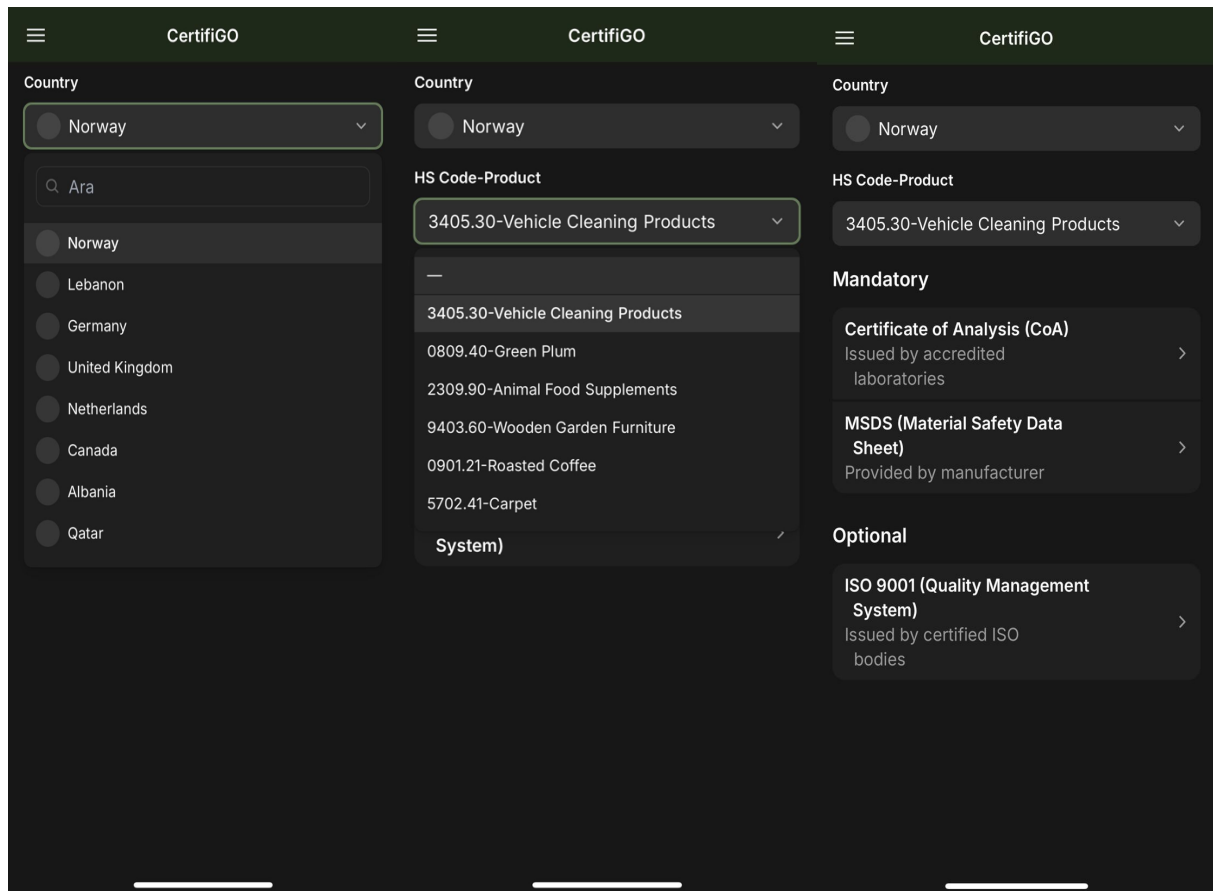
Furthermore, the prototype was intentionally developed to be scalable. If new products or markets need to be added, only the Lookup Table requires updating. No structural changes to the interface or formulas are necessary, allowing for quick adaptation to evolving export markets.

In terms of usability, beta testing was conducted with a small group of users from export-related businesses. Feedback indicated that the prototype's clear design, real-time filtering, and mobile accessibility were major strengths. However, participants also suggested adding features such as downloadable document templates, direct links to application forms, and a notification system for certificate updates. While these enhancements were beyond the scope of the initial project, they represent valuable directions for future development.

Overall, the structure of the prototype demonstrated that even with limited technological resources, a practical, functional tool could be created to address a significant gap in the export documentation process.

Once a selection is made, users are instantly presented with the relevant certification requirements, as illustrated in **Figure 3.2**. This immediate feedback reduces the need for manual searches and simplifies the export preparation process for SMEs.

Figure 3.2: Certification requirements displayed based on selected product and country in the Glide application



This figure illustrates the interactive user interface of the CertifiGO prototype, developed using Glide. Users can select the destination country and HS code/product category through dropdown menus, which dynamically filters the database and displays relevant certification requirements.

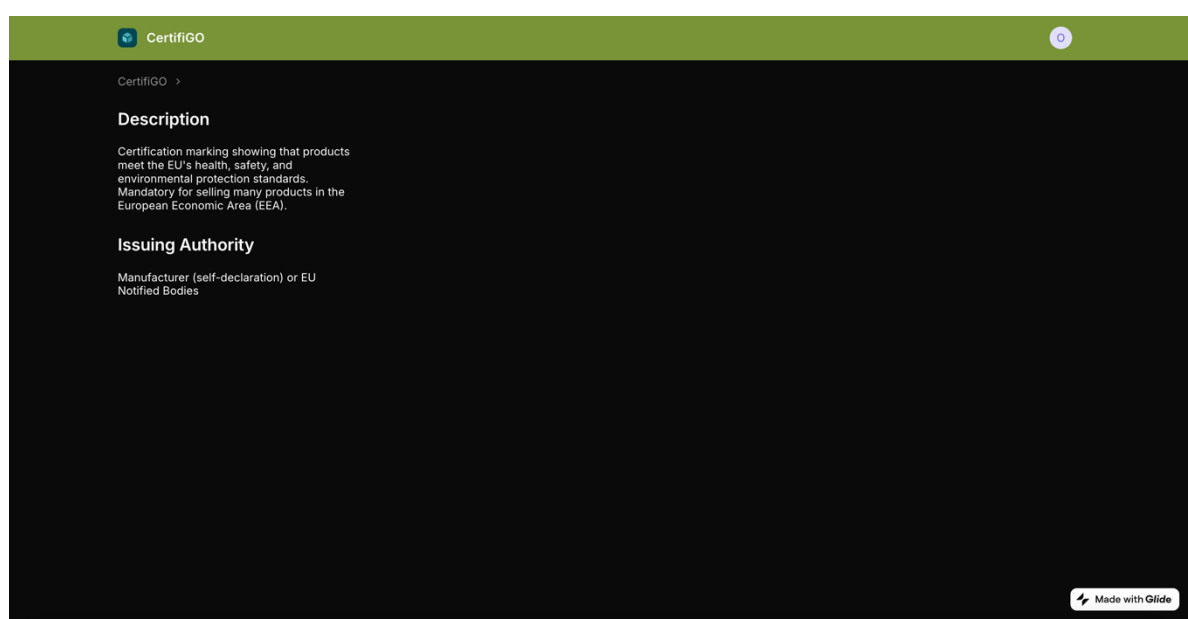
In the example shown, the user selects "Norway" as the target market and "3405.30 - Vehicle Cleaning Products" as the product. The system then automatically lists the mandatory and optional certificates required for this product in the Norwegian market, including the Certificate of Analysis (CoA), MSDS, and ISO 9001 certification.

The intuitive dropdown selection and instant display of results significantly improve usability, enabling exporters to quickly access customized documentation information without manually searching through multiple regulations or websites.

This interface demonstrates how the CertifiGO app transforms static data into an accessible and real-time decision-support tool for SMEs.

Beyond just listing certificates, the prototype also includes a Certificate Guide to assist users in understanding what each document entails. As seen in **Figure 3.3.**, when a user clicks on a certificate name, a brief, easy-to-understand description appears. This feature helps exporters, especially those without prior compliance experience, to quickly grasp the importance and application procedures for each required document.

Figure 3.3: Certificate Guide showing brief descriptions of certificates in the CertifiGO application



Furthermore, the structure of the prototype allows for easy updates and scalability. When new products or markets are added, updating the Lookup Table automatically reflects in the user interface, ensuring that the tool remains relevant and efficient over time. This figure shows the detailed certificate description screen within the CertifiGO prototype. When users click on a listed certificate in the application, a pop-up description provides essential information about the document, including its purpose, usage, and the issuing authority.

In the example shown, the description explains that the selected certification verifies compliance with the European Union's health, safety, and environmental standards. It also clarifies who is authorized to issue the document (either manufacturers through self-declaration or accredited EU Notified Bodies).

By integrating certificate explanations directly into the app, CertifiGO reduces the complexity exporters face when navigating certification requirements. This feature enhances user understanding, particularly for SMEs without dedicated compliance teams, and supports informed decision-making during export preparation.

The Certificate Description screen exemplifies the project's focus on user education and accessibility, going beyond simply listing documentation requirements.

3.7. Summary of Methodology

This study's methodology combined practical field research, secondary data collection, structured comparative analysis, and no-code digital tool development to tackle a critical problem in international trade: the accessibility and organization of certification requirements.

The research started with real-world data collection, ensuring that findings were not purely theoretical but rooted in the actual experiences of exporters. By interviewing 120 companies and consulting official government and international certification websites, the study was able to map real certification requirements rather than relying solely on secondary literature.

Structured comparative analysis provided a systematic way to organize complex regulatory information, allowing exporters to easily compare documentation demands across countries and products. Classifying certificates as mandatory, optional, or conditional made the data more actionable for users who often struggle with understanding the relative importance of various documents.

Developing the prototype first in Google Sheets and Excel and then transitioning it into a Glide-based application reflected the project's emphasis on practicality. The decision to use no-code tools made the project accessible even for individuals without software development backgrounds, demonstrating that meaningful digital solutions can be created with minimal technical expertise.

However, the methodology also has limitations. The sample size of countries and products restricts the generalizability of the findings. Furthermore, the reliance on self-reported information from companies and government websites introduces potential biases and inconsistencies. The lack of real-time update capabilities and integration with official customs or regulatory databases also limits the tool's scalability for continuous commercial use.

Despite these limitations, the project successfully achieved its primary objective: creating a simple, scalable, and practical tool to help SMEs navigate the complex world of export certifications. Future work could build on this methodology by expanding the data scope, incorporating real-time update systems, and integrating more advanced features such as document application workflows, cost estimations, and risk assessment tools.

In conclusion, the applied methodology demonstrated that with careful data structuring, user-focused design, and creative use of available technologies, even complex international trade challenges like certification management can be made more accessible for small and medium-sized enterprises.

4. FINDINGS

This section summarizes the main findings derived from phone interviews, institutional feedback, website analysis, and the development of the CertifiGO prototype. Each subsection focuses on a different type of observation or insight gained throughout the study. The goal is to highlight the real difficulties exporters face when dealing with certification and to explain how digital solutions can respond to those needs.

4.1. Findings from Exporter Interviews

During the research, 120 exporters were contacted across various sectors including food, coffee, chemicals, and furniture. In each conversation, the exporters were asked what kind of documents they prepare when exporting to selected countries, how they access certification information, and whether they experience problems during the process.

The results showed that large exporters often had staff or consultants to handle certifications, but small and medium-sized enterprises (SMEs) struggled more. Most SMEs had no documentation department and depended on past orders, forwarding agents, or trial-and-error methods. While some firms had internal templates and checklists, many admitted they were unsure if their documentation was complete or always accurate.

Several exporters described past incidents where missing or incorrect certificates led to delivery delays, customs inspections, or even product rejections. Some had to re-export or destroy goods, which created unexpected costs. Although this study did not gather numerical data about losses, the interview feedback confirms what is well-established in the literature: SMEs bear higher compliance burdens and often lack the tools to manage them efficiently (WTO, 2016; Manaf & Ahamat, 2022).

These findings confirm that a centralized and easy-to-use certificate lookup tool could greatly improve exporters' ability to plan ahead, minimize risk, and avoid delays. The majority of companies expressed interest in using a system that would tell them exactly which certificates are required, when to apply, and where to obtain them.

4.2. Challenges with Institutional Platforms

One part of the research involved sending questions through the Turkish Ministry of Trade's online "Ask the Trade Attaché" service. The idea was to get official, product-specific answers about which certificates are needed for selected country and product combinations.

However, the responses received were mostly generic. In most cases, instead of listing which documents were required or explaining procedures, the reply simply included links to foreign government websites sometimes even to homepages without a specific section for certification. The exporters would then have to navigate these sites in another language and search manually.

This approach was not very effective, especially for SMEs. Many lack foreign language skills or time to browse unfamiliar pages. While the existence of such a platform is useful in theory, in practice it does not give exporters the fast, clear answers they are looking for.

Screenshots of this process are included in Appendix A (Figure A1 and A2). These findings suggest that while institutional tools are available, they need to be improved in terms of responsiveness, specificity, and user-friendliness. Exporters are not just looking for encouragement, they need actionable information that fits the product and the destination.

4.3. Why Manual Research Is Not Enough

In addition to interviews and platform inquiries, an extensive manual web search was conducted for 10 countries and 6 product groups, resulting in 60 different combinations of HS code and target market. For each pair, official websites were reviewed in an attempt to identify required and optional certifications. These included customs authorities, ministries of agriculture and health, food safety bodies, and sometimes standardization agencies.

The research process revealed a number of challenges. First, the websites were inconsistent, some countries had well-organized portals, while others presented outdated or fragmented information. For example, Canada's food agency offered downloadable documents and clear categorization, while Lebanon or Albania had limited online details and no centralized certification page.

Secondly, language barriers made the process difficult. Several sites were only available in the national language. This required the use of machine translation, which sometimes distorted the meaning or skipped technical terms altogether.

Third, even when information was found, it was not always clear whether a document was mandatory, optional, or only needed under certain conditions. In most cases, this clarification required combining multiple sources, which took time and effort.

On average, each product-country pair took about 30–45 minutes to research. If this workload were placed on an SME, it would mean dozens of hours just to prepare basic documentation for a few exports. This inefficiency, combined with the risk of errors, highlights the limitations of manual research in the age of digital trade.

The findings support earlier studies (Goedhuys & Sleuwaegen, 2016) that emphasize the institutional voids affecting exporters in developing countries, where access to organized certification data is weak or missing. It also shows the urgent need for smarter systems that can automate parts of this process. For example, by extracting and matching certificate information from official sites using artificial intelligence or structured datasets.

4.4. Insights from the CertifiGO Prototype

In response to the difficulties observed during manual research and exporter interviews, a prototype tool named CertifiGO was developed. The tool was designed in Google Sheets and Glide, with the goal of helping users quickly find which export certificates are required for a selected HS code and country.

The system consists of three linked components:

- 1- A data table that connects countries, products, and certificates;
- 2- An interface that allows selection from dropdown menus;
- 3- A certificate guide that provides brief explanations for each listed document.

Although the tool has not yet been tested with live users, its structure was shaped by real feedback collected during the study. It responds directly to the three major problems exporters mentioned: (1) not knowing what certificate is required, (2) not knowing where to find that information, and (3) not understanding what the document actually means.

Unlike other tools, CertifiGO does not require coding knowledge. It works with basic spreadsheet logic and can be updated easily. If more countries or HS codes are added in the future, the system will still function the same way. This flexibility makes it suitable for SMEs that do not have access to expensive commercial platforms.

One of the most important insights from the prototype development process was that exporters do not need overly complex systems. They need simple, accurate, and fast answers. Even a basic tool like CertifiGO can solve 70–80% of the confusion around export documentation. In future versions, the system could be integrated with AI-based search tools that extract real-time data from official websites, further reducing human workload.

4.5. Summary of Findings

Overall, the research showed that exporters, especially SMEs, face several barriers when trying to understand which certificates are required for international shipments. They often rely on experience rather than reliable systems, and they lack access to consistent and up-to-date sources. Existing public platforms were not detailed or specific enough, and manual research proved to be slow and difficult.

The CertifiGO prototype addresses many of these issues by offering a structured, user-friendly way to access certificate data. While it is not a complete solution, it presents a strong starting point. In the future, this kind of tool could be improved with AI features and linked to real-time databases from government portals.

These findings support the idea that certificate access is not just a technical task, it is a key part of export planning and risk management. Any delay or mistake in documentation can cause shipment failure, especially in sensitive sectors like food and chemicals. Therefore, practical digital solutions are not optional, they are necessary.

5. DISCUSSION AND CONCLUSION

This study was conducted to better understand the challenges exporters face when trying to access accurate and up-to-date certification requirements for international shipments. As international trade becomes increasingly complex and documentation standards vary by product and country, certification emerges as one of the most prominent non-tariff barriers. This situation poses greater risks for small and medium-sized enterprises (SMEs), which often lack specialized compliance departments and access to expert support.

Interviews with 120 exporters revealed that while larger firms are able to manage certification through internal expertise or third-party consultants, SMEs typically rely on past experiences, customer feedback, or freight forwarder guidance. This results in uncertainty, incomplete documentation, and sometimes costly delays. Some exporters shared that they had faced customs problems, rejections, or urgent document requests due to unclear certification procedures. These findings support earlier studies highlighting that SMEs are more vulnerable to compliance-related burdens (WTO, 2016; Manaf & Ahamat, 2022).

To verify certification requirements through official channels, the study used the Turkish Ministry of Trade's "Ask the Trade Attaché" platform. While the service is designed to connect exporters with country-specific trade experts, the responses received were often generic and lacked specific guidance. In most cases, exporters were redirected to external websites without clear instruction, which proved unhelpful, particularly for those unfamiliar with the local language or administrative system. This demonstrates that although institutional support exists, it does not always address the practical information needs of exporters in a timely or product-specific manner.

In addition to interviews and institutional outreach, manual online research was carried out for ten countries and six product groups, resulting in sixty product-country combinations. Government websites belonging to customs authorities, agriculture ministries, and certification bodies were reviewed to collect information about required and optional export certificates. This process revealed several challenges. Many websites were inconsistent in structure, lacked English versions, or included scattered content without central documentation lists. On average, researching a single country-product pair took between 30 to 45 minutes, making the process inefficient and unsustainable for firms working with multiple markets.

To interpret the collected data and identify patterns, a structured comparative analysis method was applied. This approach enabled a side-by-side comparison of certificate types, responsible institutions, and documentation procedures across different countries and products. Instead of producing numerical outputs, the method focused on identifying qualitative distinctions that could inform the design of a more unified and accessible certification information tool.

While this study was based on manual research, the process revealed how limited human capacity can be when faced with vast, multilingual, and often unstructured online data. Therefore, future developments in export documentation systems must incorporate artificial intelligence. Because there are more than 200 countries and over 7000 HS Codes in the system and manually to reach the exact information about certification system takes years and years if the prototype becomes a real platform for users. AI-powered tools could automatically extract, translate, and classify certification information from official sources. They could also track changes in real-time and detect inconsistencies or missing data. Although CertifiGO was built manually using spreadsheets and no-code platforms, the findings of this study clearly show that integrating AI technologies can significantly enhance both the accuracy and scalability of such tools.

As a response to the identified gaps, this study developed a digital prototype called CertifiGO. The tool was built using Google Sheets and Glide, with a focus on simplicity, accessibility, and adaptability. Users can select a product by HS code and a destination country to view a structured list of mandatory and optional certificates, including brief explanations. While not yet tested with external users, the system was shaped by direct field insights and is designed to solve key challenges such as the lack of clarity, inconsistent access to official sources, and the absence of centralized data.

CertifiGO transforms fragmented certification data into a single, interactive platform that can be updated and expanded without technical expertise. It serves as a practical model for how technology can be used to simplify one of the most complex and time-consuming aspects of trade. In the future, this model can be improved through the use of AI, multilingual automation, and live database connections with government portals, offering exporters real-time, product-specific documentation support.

In conclusion, this research has shown that certification is not a peripheral concern in international trade, but a central operational challenge. Delays, missed markets, and added costs

often stem from difficulties in accessing clear and reliable certification guidance. Existing platforms and manual methods fall short of meeting exporters' needs, especially those of SMEs.

CertifiGO offers a starting point toward solving this problem. It is not a final product, but a step toward a more inclusive, efficient, and transparent system. Digital solutions that organize, explain, and deliver certification information are no longer optional. They are necessary to ensure that businesses of all sizes can compete fairly and confidently in global markets.

Trade today is not only about moving goods, but also about moving knowledge. And when this information becomes accessible to everyone, the doors to fair, rapid and full participation in global trade will open, and SMEs will be able to increase their share in exports by obtaining just-in-time information.

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7. APPENDIX

Sequential screenshots are grouped under the same appendix figure to illustrate different parts of the Lookup Table and the Glide prototype interface.

7.1. APPENDIX A: Inquiry and Response from the “Ask the Trade Attaché” Platform

The following visuals demonstrate the exporter’s interaction with the Turkish Ministry of Trade’s “Ask the Trade Attaché” online platform, which was used to obtain country- and product-specific export certification information. Despite being an official support tool, the responses received were found to be generic and not particularly helpful for exporters seeking concrete documentation requirements.

Appendix Figure A1. Certification Inquiry Submitted via the “Ask the Trade Attaché” Platform
This figure shows the official online form used to submit a certification-related question to the Turkish Ministry of Trade’s “Ask the Trade Attaché” platform. Exporters selected the product (by HS code), the country, and submitted their question about required export documentation.

Due to screen size limitations, the full view is divided into multiple parts.

Sayı	Temsilcilik ↕	Konu ↕	Türü ↕	Başvuru Tarihi ↕	Cevaplanma Tarihi ↕	Durumu ↕	
1	Amsterdam Ticaret Ataşeliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:22 (3 hafta, 1 gün önce)	23 Nisan 2025 15:22	Cevaplanmamış Başvuru	 Detay
2	Tiran Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:36 (3 hafta, 1 gün önce)	23 Nisan 2025 16:14	Cevaplanan ve Kapanan Başvuru	 Detay
3	Doha Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:34 (3 hafta, 1 gün önce)	24 Nisan 2025 11:31	Cevaplanan ve Kapanan Başvuru	 Detay
4	Beyrut Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:29 (3 hafta, 1 gün önce)	24 Nisan 2025 11:58	Cevaplanan ve Kapanan Başvuru	 Detay
5	Londra Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:32 (3 hafta, 1 gün önce)	24 Nisan 2025 18:02	Cevaplanan ve Kapanan Başvuru	 Detay
6	Dubai Ticaret Ataşeliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:34 (3 hafta, 1 gün önce)	25 Nisan 2025 11:05	Cevaplanan Başvuru	 Detay
7	Moskova Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:35 (3 hafta, 1 gün önce)	25 Nisan 2025 17:23	Cevaplanan ve Kapanan Başvuru	 Detay
8	Berlin Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:31 (3 hafta, 1 gün önce)	29 Nisan 2025 17:25	Cevaplanan ve Kapanan Başvuru	 Detay
9	Oslo Ticaret Müşavirliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:31 (3 hafta, 1 gün önce)	30 Nisan 2025 13:10	Cevaplanan ve Kapanan Başvuru	 Detay
10	Montreal Ticaret Ataşeliği	GTİP Bazlı Sertifika Talep Bilgisi ...	İthalat Mevzuatı/Gümrük Mevzuatı/Gümrük Tarifeleri	23 Nisan 2025 15:36 (3 hafta, 1 gün önce)	03 Mayıs 2025 00:21	Cevaplanan ve Kapanan Başvuru	 Detay

Appendix Figure A2. Example of a Generic Response from the Platform

The figure illustrates the vague and non-specific response received from the platform. Instead of listing concrete certification requirements, the response simply redirects the user to a general foreign trade website, lacking any actionable or clear documentation details. Here some examples:

Re: GTİP Bazlı Sertifika Talep Bilgisi Hk. Sn. Yetkili, Talebinize konu ürünlere ilişkin Kanada kalite altyapısı ve ürün güvenliği bilgi notu ile Kanada Pazar bilgilerine ilişkin not ekte yer almaktadır. Başarılar dileriz. Montreal Ticaret Ataşeliği — Gönderen: Montreal Ticaret Ataşeliği 03 Mayıs 2025 00:21 (1 hafta, 6 gün önce) CANADA_Kalite_altyapısı_ve_ürün_güvenliği_V2KpFEn_2f189688.pdf Kanada_Pazar_Bilgileri_yBsLAhl_da3bf3ae.pdf	Re: GTİP Bazlı Sertifika Talep Bilgisi Hk. Merhaba, Pek çok sektöre ilişkin güncel bilgilerin edinilmesine imkan tanıyan https://tregtia.gov.al/index.php/en/using-joomla/extensions/components/content-component/article-categories/247-how-to-export-to-turkey internet sitesinin incelenmesinde fayda görülmektedir. İyi çalışmalar.
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Appendix Figure A2. (continued)

Re: GTİP Bazlı Sertifika Talep Bilgisi Hk. Sayın Girişimcimiz, Talebiniz çerçevesinde, Ticaret Müşavirliğimiz veri tabanında yer alan firmalara ilişkin bilgiler* ekte sunulmaktadır. Diğer taraftan; Ticaret Müşavirliğimizce hazırlanan Rusya Federasyonu (Rusya) "Ülke Raporu", "Yatırım Raporu" ve ilgili sektör raporları ile gümrük işlemlerine ilişkin raporlara; https://ticaret.gov.tr/yurtdisi-teskilati/avrupa/rusya-federasyonu/raporlarticaret.gov.tr/data/ Rusya'daki muhtelif kamu ve meslek kuruluşlarının internet adresi bilgilerine; https://ticaret.gov.tr/yurtdisi-teskilati/avrupa/rusya-federasyonu/faydali-linkler/ulke-kamu-kurum-ve-meslek-kuruluslari bağlantı adreslerimizden, Rusya tarafından uygulanmakta olan gümrük ve katma değer vergisi oranlarına ise https://www.alta.ru/tnved/ bağlantı adresinden ulaşabilirsiniz. Ayrıca; Rusya'da en fazla satış yapılan e-ticaret sitelerine https://www.top100.datainsight.ru/ adresinden ulaşmak mümkün bulunmaktadır. Diğer taraftan; ekte sunulan firma bilgilerine* ilişkin yapılacak değerlendirmelerde aşağıdaki hususların dikkate alınmasında fayda görülmektedir. Rusya'da mesleki örgütlere, ticaret ve sanayi odalarına üyelik	Re: GTİP Bazlı Sertifika Talep Bilgisi Hk. Sayın İlgili, İkili ticaret Birleşik Krallık-Türkiye Serbest Ticaret Anlaşması kapsamında gerçekleşmektedir. Buna göre, menşe beyanı ile Birleşik Krallık'a ihrac edilen sanayi ürünleri gümrük vergisinden muaftır. Çoğu tarım ürünlerinde ise, aynı anlaşma gereği terahhü (indirimi) gümrük vergisi oranları uygulanmaktadır. Güncel gümrük vergisi oranlarına, ithalat aşamasında gerekli olabilecek belgelere ve ürünün tabi olduğu mevzuat hakkında detaylı bilgiye UK Trade Tariff (https://www.gov.uk/trade-tariff) bağlantısından erişilmesi mümkündür. Ayrıca, Brexit sonrasında ülkemiz ile BK arasında imzalanan Serbest Ticaret Anlaşması metnine ve sıkça sorulan sorulara https://www.ticaret.gov.tr/dis-ilisikiler/brexit-ve-birlesik-krallik-sta bağlantısından ulaşabilirsiniz. Çalışmalarınızda başarılar dileriz. Londra Ticaret Müşavirliği
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7.2. APPENDIX B: Screenshots from the CertifiGO Prototype

This appendix includes additional screenshots from the CertifiGO prototype, which was developed to simplify export certification access based on product type (HS code) and destination country. These visuals demonstrate the core interface components and user experience of the tool. (Bundesamt für Verbraucherschutz und Lebensmittelsicherheit – BVL. (2024), Canadian Food Inspection Agency – CFIA. (2024), Emirates Authority for Standardization and Metrology – ESMA. (2024), Federal Service for Veterinary and Phytosanitary Surveillance – Rosselkhoznadzor. (2024), Food Standards Agency – United Kingdom. (2024), German Customs – Zoll. (2024), GLOBALG.A.P. (2024), Halal Certification Services. (2024), Industrial Research Institute – Lebanon. (2024), International Organization for Standardization – ISO. (2024), Lebanese Ministry of Agriculture. (2024), Ministry of Climate Change and Environment – UAE. (2024), Ministry of Public Health – Qatar. (2024), National Food Authority – Albania. (2024), Netherlands Enterprise Agency – RVO. (2024), Netherlands Food and Consumer Product Safety Authority – NVWA. (2024), Norwegian Customs – Tolletaten. (2024), Norwegian Food Safety Authority – Mattilsynet. (2024), Qatar Chamber of Commerce. (2024), Republic of Türkiye Ministry of Trade. (2024), Russian Export Center. (2024), Turkish Food Codex – GTHB. (2024), UK Government. (2024))

Appendix Figure B.1. Full View of the Lookup Table Showing HS Codes, Products, Countries, and Certification Requirements

This figure provides the complete Lookup Table developed during the data collection phase. It presents a comprehensive mapping of the product-country-certification relationships, showing not only the HS codes and destination markets but also the mandatory or optional nature of each certificate along with issuing authority notes.

Due to screen size limitations, the full view is divided into multiple parts.

	A	B	C	D	E	F	G	H	
1	Country	HS Code-Product	Certificate	Mandatory/Opti	Notes				
2	Norway	0809.40-Green Plum	GlobalGAP (Good Agricultural Practices Certification)	Mandatory	Issued by accredited GlobalGAP bodies				
3	Norway	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Agricultural Ministry				
4	Lebanon	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Ministry of Agriculture				
5	Lebanon	0809.40-Green Plum	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
6	Germany	0809.40-Green Plum	GlobalGAP (Good Agricultural Practices Certification)	Mandatory	Issued by accredited GlobalGAP bodies				
7	Germany	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by local plant protection organization				
8	Germany	0809.40-Green Plum	Maximum Residue Limit (MRL) Test Report	Optional	Issued by certified laboratories				
9	United Kingdom	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by DEFRA or local authority				
10	United Kingdom	0809.40-Green Plum	GlobalGAP Certificate	Mandatory	Issued by accredited GlobalGAP bodies				
11	Netherlands	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by NVWA				
12	Netherlands	0809.40-Green Plum	GlobalGAP Certificate	Mandatory	Issued by GlobalGAP licensed organizations				
13	Canada	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by CFIA				
14	Canada	0809.40-Green Plum	Organic Certification	Optional	Issued by Ecocert Canada				
15	Albania	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Ministry of Agriculture				
16	Qatar	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Agricultural and Livestock Affairs				
17	Qatar	0809.40-Green Plum	Halal Certificate	Optional	Issued by approved Islamic centers				
18	Russia	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Rosselkhoznadzor				
19	Russia	0809.40-Green Plum	GOST Certification	Optional	Issued by authorized certification bodies				
20	UAE	0809.40-Green Plum	Phytosanitary Certificate	Mandatory	Issued by Ministry of Climate Change and Environment				
21	UAE	0809.40-Green Plum	Halal Certificate	Optional	Issued by approved Islamic organizations				
22	Norway	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Issued by accredited laboratories				
23	Norway	3405.30-Vehicle Cleaning Products	MSDS (Material Safety Data Sheet)	Mandatory	Provided by manufacturer				
24	Norway	3405.30-Vehicle Cleaning Products	ISO 9001 (Quality Management System)	Optional	Issued by certified ISO bodies				
25	Lebanon	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Laboratory issued				
26	Lebanon	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Manufacturer issued				

	A	B	C	D	E	F	G	H	I
27	Germany	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Accredited lab required				
28	Germany	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Manufacturer provided				
29	Germany	3405.30-Vehicle Cleaning Products	ISO 9001 Certificate	Mandatory	Certified ISO bodies				
30	United Kingdom	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Lab approved				
31	United Kingdom	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Provided by the manufacturer				
32	Netherlands	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Testing laboratories				
33	Netherlands	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Manufacturer issued				
34	Canada	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Accredited laboratories				
35	Canada	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Manufacturer provided				
36	Albania	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Laboratory tested				
37	Qatar	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Lab issued				
38	Qatar	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Provided by manufacturer				
39	Russia	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Lab report required				
40	Russia	3405.30-Vehicle Cleaning Products	GOST-R Certification	Optional	Russian standard certificate				
41	UAE	3405.30-Vehicle Cleaning Products	Certificate of Analysis (CoA)	Mandatory	Issued by accredited labs				
42	UAE	3405.30-Vehicle Cleaning Products	MSDS	Mandatory	Manufacturer document				
43	Norway	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Issued by Veterinary Authority				
44	Norway	2309.90-Animal Food Supplements	Phytosanitary Certificate	Mandatory	For plant-based supplements				
45	Lebanon	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Veterinary certification required				
46	Lebanon	2309.90-Animal Food Supplements	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
47	Germany	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Issued by veterinary offices				
48	Germany	2309.90-Animal Food Supplements	Veterinary Inspection Report	Optional	For certain animal nutrition categories				
49	United Kingdom	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Issued by Animal and Plant Health Agency (APHA)				
50	United Kingdom	2309.90-Animal Food Supplements	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
51	Netherlands	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Veterinary authority approval				
52	Netherlands	2309.90-Animal Food Supplements	Veterinary Inspection Report	Optional	Based on product type				

Appendix Figure B.1. (continued)

	A	B	C	D	E	F	G	H	I
53	Canada	2309.90-Animal Food Supplements	Import Permit	Mandatory	Issued by CFIA for animal products				
54	Canada	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Veterinary issued				
55	Albania	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Veterinary approved				
56	Qatar	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Veterinary department certificate				
57	Qatar	2309.90-Animal Food Supplements	Halal Certificate	Optional	For animal-based ingredients				
58	Russia	2309.90-Animal Food Supplements	Veterinary Certificate	Mandatory	Issued by Rosselkhoznadzor				
59	Russia	2309.90-Animal Food Supplements	GOST Certification	Optional	Russian standard conformity				
60	UAE	2309.90-Animal Food Supplements	Health Certificate	Mandatory	Ministry of Climate Change and Environment				
61	UAE	2309.90-Animal Food Supplements	Halal Certificate	Optional	For animal products				
62	Norway	9403.60-Wooden Garden Furniture	FSC Certificate (Forest Stewardship Council)	Optional	Certifies sustainable wood sourcing				
63	Norway	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Issued by Agricultural Authority				
64	Lebanon	9403.60-Wooden Garden Furniture	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
65	Lebanon	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	For untreated wood components				
66	Germany	9403.60-Wooden Garden Furniture	FSC Certificate	Optional	Sustainable forestry certification				
67	Germany	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Required for raw wood parts				
68	Germany	9403.60-Wooden Garden Furniture	CE Marking	Optional	European conformity if applicable				
69	United Kingdom	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Required for export				
70	United Kingdom	9403.60-Wooden Garden Furniture	FSC Certificate	Optional	Certified sustainable sourcing				
71	Netherlands	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Issued by NVWA				
72	Netherlands	9403.60-Wooden Garden Furniture	FSC Certificate	Optional	Sustainable wood certification				
73	Canada	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Required for untreated wood				
74	Canada	9403.60-Wooden Garden Furniture	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
75	Albania	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Ministry of Agriculture				
76	Qatar	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Agricultural and Livestock Affairs				
77	Qatar	9403.60-Wooden Garden Furniture	Certificate of Origin	Mandatory	Chamber of Commerce				
78	Russia	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Required by Russian customs				

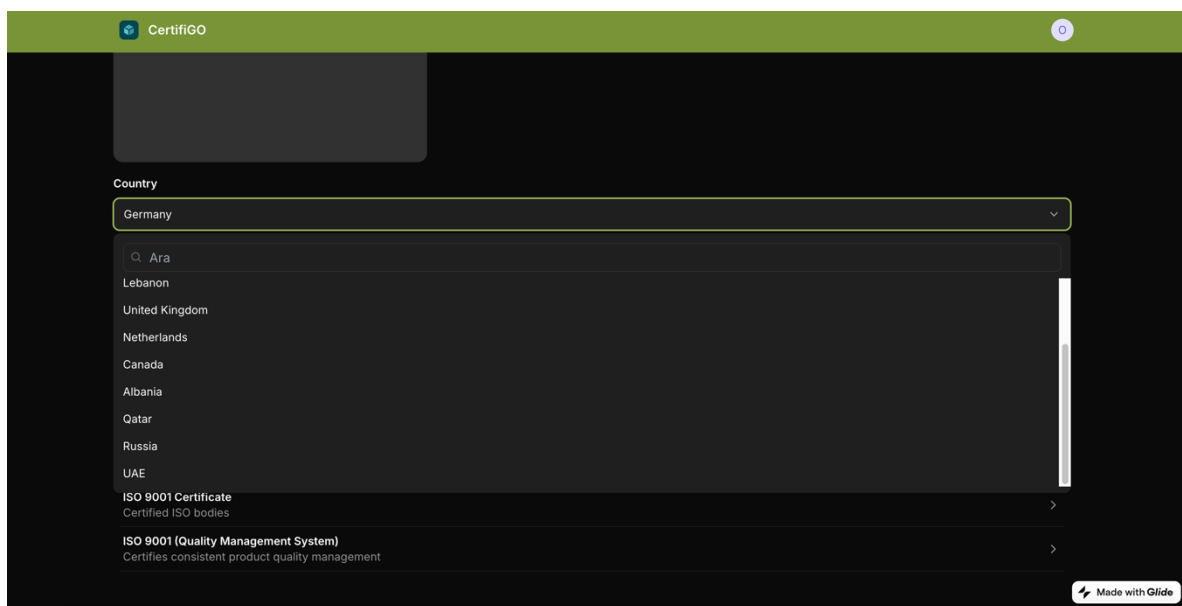
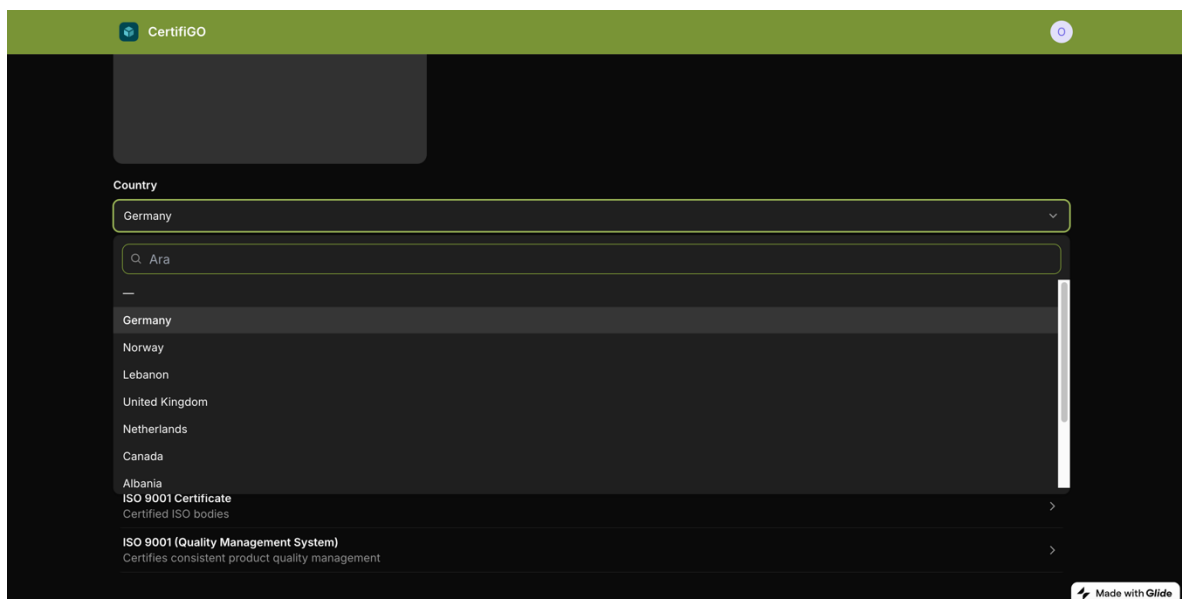
	A	B	C	D	E	F	G	H	I
79	Russia	9403.60-Wooden Garden Furniture	GOST Certification	Optional	Russian conformity certification				
80	UAE	9403.60-Wooden Garden Furniture	Phytosanitary Certificate	Mandatory	Ministry of Climate Change and Environment				
81	UAE	9403.60-Wooden Garden Furniture	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
82	Norway	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Issued by Agricultural Authority				
83	Norway	0901.21-Roasted Coffee	Organic Certification	Optional	Issued by authorized organic bodies				
84	Lebanon	0901.21-Roasted Coffee	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
85	Lebanon	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Ministry of Agriculture				
86	Germany	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Local plant protection organizations				
87	Germany	0901.21-Roasted Coffee	Organic Certification	Optional	Certified organic products				
88	United Kingdom	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	DEFRA or APHA issued				
89	United Kingdom	0901.21-Roasted Coffee	Organic Certification	Optional	Soil Association or similar				
90	Netherlands	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	NVWA issued				
91	Netherlands	0901.21-Roasted Coffee	Organic Certification	Optional	Certified organic organizations				
92	Canada	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	CFIA issued				
93	Canada	0901.21-Roasted Coffee	Organic Certification	Optional	Ecocert Canada				
94	Albania	0901.21-Roasted Coffee	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
95	Albania	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Agricultural authority issued				
96	Qatar	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Ministry of Municipality and Environment				
97	Qatar	0901.21-Roasted Coffee	Halal Certificate	Optional	Approved Halal Centers				
98	Russia	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Rosselkhoznadzor issued				
99	Russia	0901.21-Roasted Coffee	GOST Certification	Optional	Optional standard compliance				
100	UAE	0901.21-Roasted Coffee	Phytosanitary Certificate	Mandatory	Ministry of Climate Change and Environment				
101	UAE	0901.21-Roasted Coffee	Halal Certificate	Optional	Approved Islamic organizations				
102	Norway	5702.41-Carpet	Certificate of Origin	Mandatory	Issued by Chamber of Commerce				
103	Norway	5702.41-Carpet	Fire Resistance Certificate	Optional	For special orders				
104	Lebanon	5702.41-Carpet	Certificate of Origin	Mandatory	Chamber issued				

Appendix Figure B.1. (continued)

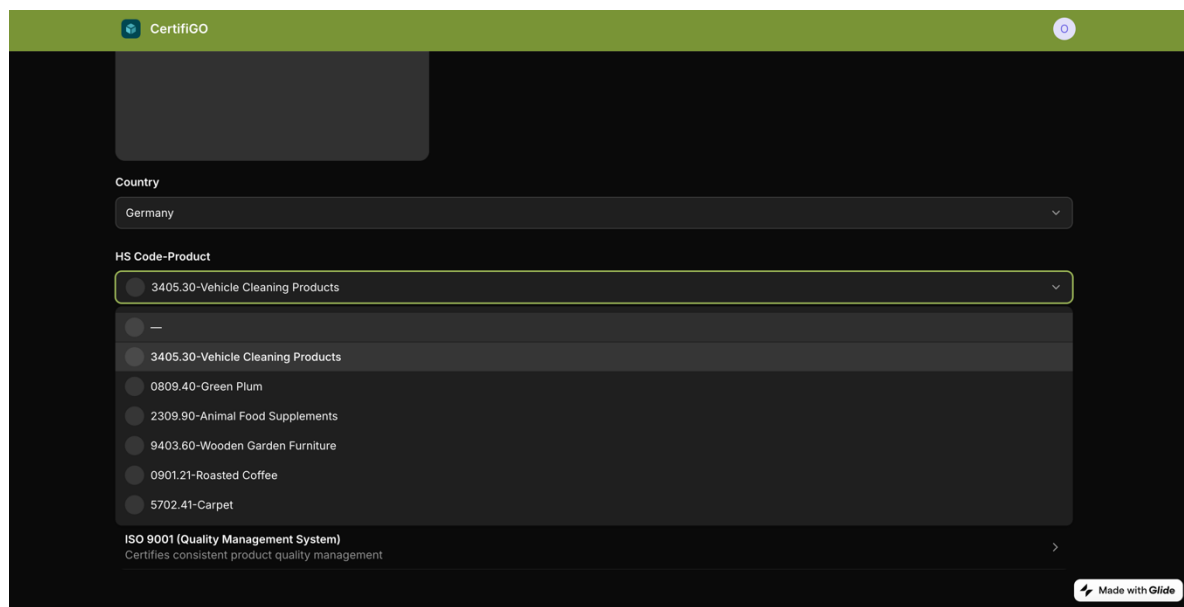
	A	B	C	D	E	F	G	H	I
109	Netherlands	5702.41-Carpet	Certificate of Origin	Mandatory	Chamber issued				
110	Netherlands	5702.41-Carpet	CE Marking	Mandatory	Textile product compliance				
111	Canada	5702.41-Carpet	Certificate of Origin	Mandatory	Chamber issued				
112	Canada	5702.41-Carpet	Flammability Test Report	Optional	Required for certain projects				
113	Albania	5702.41-Carpet	Certificate of Origin	Mandatory	Chamber of Commerce				
114	Qatar	5702.41-Carpet	Certificate of Origin	Mandatory	Issued by Chamber				
115	Qatar	5702.41-Carpet	Fire Resistance Certificate	Optional	Construction sector requirement				
116	Russia	5702.41-Carpet	Certificate of Origin	Mandatory	Chamber issued				
117	Russia	5702.41-Carpet	GOST Certification	Optional	For conformity standards				
118	UAE	5702.41-Carpet	Certificate of Origin	Mandatory	Chamber of Commerce				
119	UAE	5702.41-Carpet	Fire Resistance Certificate	Optional	For building project specifications				
120	Germany	0809.40-Green Plum	ISO 22000 (Food Safety Management System)	Optional	Ensures food safety practices in farming and handling				
121	Norway	0809.40-Green Plum	ISO 22000 (Food Safety Management System)	Optional	International food safety standard for agriculture				
122	United Kingdom	0809.40-Green Plum	ISO 22000 (Food Safety Management System)	Optional	Recognized food safety certification				
123	Germany	3405.30-Vehicle Cleaning Products	ISO 9001 (Quality Management System)	Mandatory	Certifies consistent product quality management				
124	United Kingdom	3405.30-Vehicle Cleaning Products	ISO 9001 (Quality Management System)	Mandatory	International quality standard compliance				
125	Netherlands	3405.30-Vehicle Cleaning Products	ISO 9001 (Quality Management System)	Mandatory	Quality assurance certification				
126	Germany	9403.60-Wooden Garden Furniture	ISO 9001 (Quality Management System)	Optional	Ensures quality production and management				
127	United Kingdom	9403.60-Wooden Garden Furniture	ISO 9001 (Quality Management System)	Optional	Sustainable quality certification				
128	Netherlands	9403.60-Wooden Garden Furniture	ISO 9001 (Quality Management System)	Optional	Quality management for wooden goods				
129	Germany	0901.21-Roasted Coffee	ISO 22000 (Food Safety Management System)	Optional	Food safety assurance for roasted coffee				
130	Netherlands	0901.21-Roasted Coffee	ISO 22000 (Food Safety Management System)	Optional	Food safety management system				
131	United Kingdom	0901.21-Roasted Coffee	ISO 22000 (Food Safety Management System)	Optional	Standard for food safety compliance				
132	Germany	5702.41-Carpet	ISO 9001 (Quality Management System)	Optional	Assures quality in manufacturing of carpets				
133	United Kingdom	5702.41-Carpet	ISO 9001 (Quality Management System)	Optional	Ensures production quality control				
134	Russia	5702.41-Carpet	ISO 9001 (Quality Management System)	Optional	Certification for consistent manufacturing				

Appendix Figure B.2. Complete Dropdown Selection Interface for Country and Product in Glide Application

This figure displays the full dropdown selection interface in the CertifiGO prototype, where users can choose the destination country and the product HS code. The clear and organized design enables quick navigation and minimizes the complexity of accessing certification information.



Appendix Figure B.2. (contunied)



Appendix Figure B.3. Expanded Certificate Listing Display in Glide After Selection

After selecting the country and product, the application dynamically displays the mandatory certifications. This full listing view highlights the real-time filtering functionality and demonstrates how exporters can instantly see relevant certification requirements without manual searching.

