



Characterizing Swiss NTM trade policy for agri-food products

From technical barriers to sustainability standards

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Summary

Characterizing Swiss NTM trade policy for agri-food products – From technical barriers to sustainability standards

In many countries, non-tariff measures (NTMs) have increasingly replaced tariffs as international trade barriers and as a subject of trade negotiations in recent years (Walkenhorst, 2004). This article investigates how the NTM landscape has evolved in Swiss trade relationships, in particular for agri-food products.

NTMs are generally defined as “policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both” (UNCTAD 2010, p.99). The Swiss agri-food trade is highly impacted by NTMs, much more than for instance trade with manufactured goods or natural resources. NTMs applied to Swiss imports include mostly Sanitary and Phytosanitary (SPS) measures, Technical Barriers to Trade (TBT), Tariff Rate Quotas (TRQs), and in recent years an increasing number of sustainability standards, which mostly fall under the categories of SPS or TBT measures.

We show that in Switzerland, like in many other countries, there are two opposing movements: On the one hand, more NTMs are created, also because the landscape of private sustainability standards and organic labels has continuously grown in recent years. On the other hand, there is an effort to harmonize standards and to mutually recognize them in multi- or bilateral trade agreements, leading to a decrease in NTMs. With Switzerland’s most important trade partner, the EU, a very high level of harmonization and mutual recognition of standards has been reached. Further, with non-EU trade partners, Switzerland tries novel approaches regarding the harmonization of sustainability standards, for instance in the recently negotiated EFTA-Indonesia preferential trade agreement. This agreement includes product-specific sustainability requirements for palm oil imports, linked to preferential tariff rates for imports classified as sustainable. This agreement is also novel in a way that it relies on voluntary private standards, in this case on the Roundtable on Sustainable Palm Oil (RSPO) and other private certification schemes. It is yet to be seen whether this approach can serve as a model for future negotiations of trade agreements by Switzerland and other countries alike.

Zusammenfassung

Schweizer NTM-Handelspolitik für landwirtschaftliche Produkte und Lebensmittel: von technischen Hemmnissen zu Nachhaltigkeitsstandards

In vielen Ländern haben nichttarifäre Handelshemmnisse (non-tariff measures, NTM) in den letzten Jahren Zölle als internationale Handelshemmnisse und als Gegenstand von Handelsgesprächen zunehmend ersetzt (Walkenhorst, 2004). In diesem Artikel wird untersucht, wie sich die NTM-Landschaft in den Schweizer Handelsbeziehungen entwickelt hat, insbesondere bei landwirtschaftlichen Produkten und Lebensmitteln.

NTM werden im Allgemeinen definiert als politische Massnahmen, bei denen es sich nicht um gewöhnliche Zölle handelt, die aber wirtschaftliche Auswirkungen auf den internationalen Handel haben können, indem sie die gehandelten Mengen oder die Preise oder beides beeinflussen (UNCTAD 2010, S. 99). Der Schweizer Handel mit landwirtschaftlichen Produkten und Lebensmitteln ist stark von NTM betroffen, viel stärker als beispielsweise der Handel mit Industriegütern oder natürlichen Ressourcen. Zu den NTM, die auf Schweizer Importe angewendet werden, gehören vor allem gesundheitspolizeiliche und pflanzenschutzrechtliche Massnahmen (SPS-Massnahmen), technische Handelshemmnisse (TBT), Zollkontingente (TRQ) und in den letzten Jahren eine zunehmende Zahl von Nachhaltigkeitsstandards, die meist unter die Kategorien SPS-Massnahmen oder TBT fallen.

Wir zeigen, dass es in der Schweiz, wie in vielen anderen Ländern auch, zwei gegenläufige Bewegungen gibt: Einerseits werden mehr NTM geschaffen, auch weil in den letzten Jahren immer mehr private Nachhaltigkeitsstandards und Bio-Label entstanden sind. Andererseits gibt es Bestrebungen, die Standards zu harmonisieren und sie in multi- oder bilateralen Handelsabkommen gegenseitig anzuerkennen, was einen Abbau der NTM bewirkt. Mit der EU, dem wichtigsten Handelspartner der Schweiz, ist ein sehr hoher Grad an Harmonisierung und gegenseitiger Anerkennung von Standards erreicht worden. Die Schweiz versucht ausserdem, mit Handelspartnern ausserhalb der EU neue Ansätze zur Harmonisierung von Nachhaltigkeitsstandards zu finden, zum Beispiel im kürzlich ausgehandelten Wirtschaftspartnerschaftsabkommen EFTA-Indonesien. Dieses Abkommen enthält produktspezifische Nachhaltigkeitsanforderungen für Palmölimporte, wobei für Importe, die als nachhaltig eingestuft werden, Präferenzzollsätze angewendet werden. Dieses Abkommen ist auch insofern neu, als es sich auf freiwillige private Standards stützt, in diesem Fall auf den Roundtable on Sustainable Palm Oil (RSPO) und andere private Zertifizierungssysteme. Es bleibt abzuwarten, ob dieser Ansatz als Modell für zukünftige Verhandlungen über Handelsabkommen durch die Schweiz und andere Länder dienen kann.

Résumé

La politique commerciale suisse et les MNT pour les produits agroalimentaires: des barrières techniques aux normes de durabilité

Dans de nombreux pays, les mesures non tarifaires (MNT) ont de plus en plus remplacé les tarifs douaniers. Ce sont elles les nouvelles barrières commerciales internationales. Elles font d'ailleurs l'objet des négociations commerciales ces dernières années (Walkenhorst, 2004). Cet article étudie comment le paysage des MNT a évolué dans les relations commerciales suisses, en particulier pour les produits agroalimentaires.

Les MNT sont généralement définies comme «des mesures politiques autres que les droits de douane, qui peuvent influencer sur les échanges internationaux. Elles peuvent se répercuter sur les prix et/ou les volumes des produits échangés» (CNUCED 2010, p. 99). Le commerce agroalimentaire suisse est fortement touché par les MNT, bien plus que le commerce des produits manufacturés ou des ressources naturelles, par exemple. Les MNT appliquées aux importations suisses comprennent principalement les mesures sanitaires et phytosanitaires (SPS), les obstacles techniques au commerce (OTC), les contingents tarifaires (CT) et, depuis quelques années, un nombre croissant de normes de durabilité, qui relèvent pour la plupart des catégories de mesures SPS ou OTC.

Nous montrons qu'en Suisse, comme dans de nombreux autres pays, il existe deux mouvements opposés: D'une part, davantage de MNT apparaissent, notamment parce que les normes privées de durabilité et les labels biologiques n'ont cessé de se développer ces dernières années. D'autre part, des efforts sont faits pour harmoniser les normes et les reconnaître réciproquement dans le cadre d'accords commerciaux multi ou bilatéraux, ce qui permettrait de réduire les MNT. Un niveau très élevé d'harmonisation et de reconnaissance mutuelle des normes a été atteint avec le principal partenaire commercial de la Suisse, c'est-à-dire l'UE. Avec ses partenaires commerciaux non européens, la Suisse tente de nouvelles approches en matière d'harmonisation des normes de durabilité, comme l'accord de libre-échange à taux préférentiels entre l'AELE et l'Indonésie qui vient d'être négocié. Cet accord comprend des exigences de durabilité spécifiques aux produits pour les importations d'huile de palme, liées à des taux tarifaires préférentiels pour les importations classées comme durables. Cet accord est également nouveau dans la mesure où il s'appuie sur des normes privées volontaires, en l'occurrence la Table ronde sur l'huile de palme durable (RSPO) et d'autres systèmes de certification privés. Il reste à savoir si cette approche peut servir de modèle pour les futures négociations d'accords commerciaux entre la Suisse et d'autres pays.

1 Introduction

In the past three decades, non-tariff measures (NTMs) have increasingly replaced tariffs as international trade barriers and as a subject of trade negotiations in many countries (Walkenhorst, 2004). Consequently, both policy debates and academic interest in NTMs have increased (Santeramo & Lamonaca, 2019). However, much of the literature focuses on the EU or on developing countries, and how they may be affected by the growing importance of NTMs such as sustainability standards, rules of origins, or technical and administrative barriers. To date, no distinct analysis of NTMs in Switzerland has been conducted.

In this article, we want to investigate how the NTM landscape has evolved in Switzerland, in particular for agri-food products. We focus on measures applied by Switzerland, i.e., on imports entering the countries, and Swiss policies concerning Swiss exports.¹ We find that this case study deserves a distinct and thorough investigation because tariffs continue to be an important instrument of border protection for the Swiss agricultural sector. At the same time, NTMs seem to play an important role for imports and exports alike. Switzerland imports large amounts of fruits, vegetables and cereals, which are subject to residue limits and other phytosanitary measures. Also, Swiss food manufacturers depend on cocoa and coffee imports; sectors where social and environmental standards are widely used. On the export side, Switzerland exports highly differentiated agricultural goods such as regional cheese specialties subject to rules of origin, and products certified with public or private organic labels. Hence, it is worthwhile analyzing how these different types of NTMs are applied to Swiss importers and exporters.

We will also assess how Switzerland applies NTMs compared to other countries, because, as Mattli & Bütte (2003, p.4) put it: “first movers set the international standards agenda, and laggards, or second movers, pay the switching costs.” Particularly a small high-income country like Switzerland will aim to be in the first, rather than the latter group. With its position in the middle of Europe, Switzerland’s most important trade partner is the EU, for imports and exports, for food and non-food products alike. Therefore, part of this report will give special attention to NTMs in the EU-Swiss trade relations. Moreover, it will also deal with NTMs in trade relationships with other, non-EU countries, and how they enter preferential trade agreements.

We will be contributing to a small literature that has conducted similar exercises for the European Union (Grübler & Reiter, 2021) and the Philippines (Quimba & Calizo Jr, 2020). Whereas the increased use of NTMs is a global phenomenon, we want to conduct a deeper analysis for a single country, here Switzerland, because the implementation and enforcement of NTMs is highly country-specific, and so are the trade effects (De Melo & Nicita, 2018). It is worth noting that this report explores the role of NTMs in Switzerland from an economic perspective. While we provide some background information on the legal framework, where helpful and necessary, we do not aim to provide extensive analysis on legal aspects of NTMs.

In the following section (2), we start by defining and classifying different types of NTMs relevant in Swiss agri-food trade. Section 3 provides some descriptive statistics on how NTMs are applied in Switzerland in different sectors and for different product groups. Section 4 explores the role of NTMs in Swiss trade agreements in general, while Section 5 then puts a focus on sustainability standards and their relevance in Swiss trade relations. Finally, Section 6 provides some concluding remarks.

¹ This report does not analyze NTMs adopted by other countries, which could be relevant for Swiss exports.

2 Types of NTMs and their application in Switzerland

NTMs are generally defined as “policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both” (UNCTAD 2010, p.99). Based on this broad definition, the UNCTAD (2019) has developed a detailed classification system to distinguish among various forms of NTMs, splitting them into 16 chapters (A-P, see Table 1). In the following, we will explain the individual chapters and their relevance for the Swiss agri-food sector.

Table 1: Classification of non-tariff measures (UNCTAD 2019)

Technical import measures	A	Sanitary and phytosanitary measures (SPS)
	B	Technical barriers to trade (TBT)
	C	Pre-shipment inspection and other formalities
Non-technical import measures	D	Contingent trade-protective measures
	E	Non-automatic import licensing, quotas, prohibitions, quantity-control measures and other restrictions (excl. SPS and TBT)
	F	Price-control measures, including additional taxes and charges
	G	Finance measures
	H	Measures affecting competition
	I	Trade-related investment measures
	J	Distribution restrictions
	K	Restrictions on post-sales services
	L	Subsidies and other forms of support
	M	Government procurement restrictions
	N	Intellectual property
Export measures	O	Rules of origin
	P	Export-related measures

Sanitary and phytosanitary measures (SPS, Chapter A) aim to protect human, animal or plant health from risks, e.g. through additives, contaminants, toxins, pests, diseases, or disease-causing organisms. These measures are thus aimed at food safety. However, measures to generally protect the environment, consumer interests or animal welfare are not considered SPS measures. SPS measures can prohibit the import of certain products (e.g. poultry imports from areas affected by avian influenza). Alternatively, they can define tolerance limits (e.g. for pesticide residues), or relate to production processes (e.g. regarding feed composition) or post-production processes (e.g. regarding storage conditions). Moreover, SPS measures can require some specific import handling or labelling, including certification and traceability requirements (e.g. meat imports require records of all involved slaughtering and processing facilities). For Swiss agri-food imports², SPS are the largest category, with 44% (49 out of 110) of the NTMs notified to the WTO in 2021 being SPS measures (WTO, 2022a).

Technical barriers to trade (TBT, chapter B) cover all other technical regulations and related conformity assessment procedures, that are not dealing with human, animal or plant health. A technical regulation defines mandatory product characteristics (e.g. “chocolate” imports must contain a minimum of 30 per cent cocoa) or related processes and production methods (e.g. animal slaughtering requirements according to Islamic law). This can include administrative provisions (e.g. registration at the ministry of health for importers of certain food items), labelling or packaging requirements (e.g. mandatory nutrition declaration referring to 100g or 100ml). Also for TBT, the measures can either prohibit the import of products that do not meet the technical requirements, define threshold values for certain product characteristics, or require some specific import handling or labelling, including certification and traceability requirements (e.g. for wool products, the origin of the sheep, textile factory, and final apparel producer must be disclosed). Standards dealing with animal welfare or environmental concerns that are not directly related to sanitary and phytosanitary concerns fall under the category of TBT. For the increasingly used sustainability standards (e.g. Rainforest Alliance/UTZ, Fairtrade, Organic), it is not always straightforward to make this distinction: According to UNCTAD, biodiversity protection is part of SPS because it protects the health of wildlife, fish and forests, but general

² We define agri-food products in line with UNCTAD (2021), covering the Harmonized System groups HS 1-24, i.e., all agricultural and processed food product, but also live animals.

environmental protection is not. Also, labor standards can be difficult to categorize: Is a standard protecting the health of the worker (SPS), or their safety and security (TBT)? Is an import potentially dangerous to consumers' health (SPS), or their safety (TBT)? While sometimes difficult to make, this distinction is legally relevant because the SPS and TBT are two separate agreements with distinct legal implications and dispute settlement procedures under WTO law. For example, under the SPS Agreement, a government can only set its own standards if it is based on a scientific assessment of the potential health risks. Under the TBT Agreement, in contrast, governments can also use other justifications, e.g. technological reasons or geographical factors, to set their own standards (WTO, 2010). Considering all product categories (manufacturing, natural resources and agricultural goods), TBT are by far the most widespread NTM applied to Swiss imports, with 336 out of 492 measures (68%) notified to the WTO in 2021. However, this is mostly attributable to industrial and manufactured goods, where technical standards are widely applied. Looking at agri-food imports only, TBT make up only 11% (13 out of 110, WTO, 2022a).

Chapter C covers inspections and other formalities prior to shipment, i.e., in the exporting country. For Swiss agri-food imports, there are two common pre-shipment obligations. First, some products have to pass through a designated port or customs office for inspection (C3). Second, import licenses are required as an administrative procedure for certain products prior to importation, as an administrative measure to monitor the import value and volume of specified goods (C4) (UNCTAD, 2018).

Chapter D defines contingent trade-protective measures, aiming to counteract adverse effects of imports in the domestic market, including unfair foreign trade practices. Besides anti-dumping measures and countervailing measures to offset subsidies from exporting countries, safeguard measures are most relevant. They are temporary border measures in times of increased imports. They are justified with the need to prevent "serious injury" to the domestic industry (UNCTAD, 2019, p.20) and to facilitate adjustment to changing trade patterns. Safeguard measures can take various forms, including increased duties, quantitative restrictions and others (for example, temporarily applied tariff-rate quotas, price-based measures and special levies).

Special agricultural safeguards (SSG) are a type of contingent trade-protective measures, and hence a sub-chapter of Chapter D, which are only allowed for agricultural products. These measures allow a country to impose an additional tariff in response to a surge in imports or a fall in import prices. The product-specific trigger levels must be calculated at the country level and notified to the WTO. For import volume triggers, additional tariffs can apply until the end of the respective year (i.e., when in a given year, the import volume of a product exceeds a defined amount of tons, an additional duty per liter is applied to all following imports). For price triggers, the additional tariff can only be imposed for individual shipments with import prices below the trigger level. For instance, when for a product, the c.i.f. import price is below a defined trigger price per kg, an additional duty per kg is applied to the import (UNCTAD, 2019, p.21-22). Out of the 39 WTO members who included the right to impose tariffs in the form of SSGs in their schedule of concessions during the Uruguay Round of negotiations, Switzerland is eligible to apply them to the largest amount of agricultural products (53% of agricultural products by tariff line, compared to 31% for the EU and 10% for the United States) (Das et al., 2021). However, in recent years, Switzerland has not made use of the SSG.³

From chapter E, the sub-chapter E6 *tariff-rate quotas (TRQs)* is most relevant for the Swiss agri-food sector. TRQs describe a system of multiple tariff rates for one product: up to a defined volume of imports, a lower rate applies (in-quota tariff). For subsequent imports, after the quota is filled, a higher rate is charged (out-of-quota tariff), which can even be prohibitively high. Besides the level of the in-quota and out-of-quota tariff, the quota allocation mechanism is decisive for the trade effect, determining who gets to import goods at the cheaper in-quota tariff (Skully, 2001; De Gorter and Kliaugu, 2006). The Swiss quota allocation method depends on the good, i.e., based on historic market shares (e.g. tomatoes), auctioning (e.g. certain meats), or first-come-first-served (e.g. wine, potatoes) (Loi et al., 2016).⁴ In Switzerland, for some seasonal fruits and vegetables, these TRQs are only administered seasonally, typically in the domestic supply season (see Hillen, 2019).

Also, several measures from Chapter F (Price-control measures, including additional taxes and charges) are relevant for Swiss imports. Price-control measures are implemented to support the domestic price of (primary) agricultural goods in times of low import prices. This chapter includes measures that increase the cost of imports similar to a

³ The last notification that Switzerland applied a SSG was in 1999 for pork meat (WTO Notification G/AG/N/CHE/Rev.1, see <https://agims.wto.org/en/SearchNotificationIssue/ViewResults>, domestic ordinance AS 1999 1660, see <https://www.fedlex.admin.ch/eli/oc/1999/254/de>).

⁴ How large the quotas are and how much has been used in the current period can be tracked at <https://zollkontingente.douane.swiss/>.

tariff, e.g. by a fixed percentage or by a fixed amount. Therefore, Chapter F measures are also called para-tariff measures (UNCTAD, 2019). First, the Swiss threshold price system, e.g. for feed grains, includes such measures, namely variables levies (F31). If the threshold price for a good is CHF 700 per ton, and the world price is at CHF 500, a levy of CHF 200 applies. With a world price of CHF 600, the levy would change to CHF 100. This measure ensures that the target price of CHF 700 is reached at the border, even in times of low import prices, aiming to lift and stabilize the domestic price. Further, Switzerland applies “price compensation measures”, which fall under chapter F32 (Variable components / compensatory elements). The aim is to equalize the difference between domestic and the world market prices for certain raw materials (e.g. milk and grain products) in processed agricultural goods (e.g. biscuits) (EFTA, 2019). This is supposed to ensure competitiveness for the domestic food processing industry with foreign companies. Moreover, the seasonally administered TRQs for fruits and vegetables (see Chapter E), could also be defined as a Chapter F5 measure (Seasonal duties).

Finally, the so-called “guarantee fund contributions” fall under chapter F (F6: Additional taxes and charges levied in connection with services provided by the Government) (UNCTAD, 2019). As an import-dependent country, Switzerland maintains mandatory stock reserves of certain goods as a precautionary measure in ensuring security of supply for the demand coverage of 2-4 months (Federal Office for National Economic Supply, 2019). For foodstuffs, this includes cereals, sugar, edible fats and oil, coffee, and animal feed. Switzerland applies levies on imports of these goods to finance storage costs and associated risks (for contributions by good, see WTO 2022b, p. 63). These fees go into guarantee funds, and are not collected by the Federal Customs Administration, but by Réservesuisse, a private-sector compulsory stock organization. Réservesuisse applies levies uniquely on imports, and not on domestically produced goods (WTO, 2022b, p.63). The levies apply to all imported goods⁵ subject to compulsory stock requirements (by weight), and do not discriminate between trade partners⁶ or type or quality of the imported product. However, as the guarantee fund contributions are only paid on imported goods, they certainly represent a trade barrier, making imported goods more expensive compared to domestic goods.

Chapter L (Subsidies and other forms of support) is of large relevance in Switzerland: The Swiss Confederation spends each year about 2.8 billion CHF on direct payments to agricultural producers and additionally about half a billion CHF on market support measures in the area of production and sales (FOAG, 2021; Huber, 2022). Such strong domestic support certainly has effects on international trade in agricultural goods. However, as this report focuses on direct trade related measures, the following sections will not further deal with domestic subsidies.

Moreover, Chapter O (rules of origin) is worth mentioning, applying to any rules that are stricter than the protection of Geographical Indications in international law (Abegg, 2018).⁷ In 2017, the “Swissness” legislation was adopted, ensuring that products labelled as Swiss on the outside, are also Swiss on the inside (Bettschart, 2014). This Swiss origin model has two key features: First, it is administered by the Swiss Federal Intellectual Property Institute (IGE), enabling the latter to monitor the use of the Swissness brand and to take legal actions, if necessary. Second, mandatory industry specific thresholds of Swissness were determined. For food products, at least 80% of the raw material weight must come from Switzerland⁸; and even 100% for natural products such as dairy products, meat or plants. It is in the nature of the Swissness law that it is most relevant for Swiss exporters, and hence closely related to the following chapter P.

The final chapter P deals with all export-related measures applied by the government of the exporting countries. This can relate to SPS or TBT measures, export prohibitions, quotas, licenses, price-control measures, taxes or subsidies, i.e., all the previous measures, but applied to exports instead of imports. This also includes export subsidies, which were prohibited after the WTO Ministerial Conference in Nairobi in 2015. Until 2018, the so-called “chocolate law” (SR 632.111.72) was such an export subsidy for Swiss food exports containing milk or certain cereals. As of 2019, it was replaced by a general market surcharge payment for Swiss milk used in non-cheese dairy products (Olsommer & Courleux, 2019). Since then, the contributions are paid to the producers without any specific conditions and independently of exports.

⁵ For products with target prices (e.g. sugar, bread grain and animal feed), the guarantee fund contribution is only paid if the border price of the imported good does not exceed the defined target price (SR 531, Section 3, Art. 19, see <https://www.fedlex.admin.ch/eli/cc/2017/308/en>).

⁶ However, LDCs' exports are exempt of guarantee-fund contributions.

⁷ For legal details about the protection of geographical indications in different international contexts and agreements, see O'Connor and Company (2007).

⁸ This only applies to raw materials naturally available in Switzerland. For products containing raw material such as cocoa, rice, etc., the threshold is lower.

3 The characteristics of NTMs in Switzerland

Using descriptive statistics, this chapter aims to provide a numerical overview on which NTMs are most important in Switzerland, and for which type of products they apply. Therefore, we first broadly characterize the Swiss NTM landscape using descriptive indicators (section 3.1), and then analyze which product groups are most affected, with a special focus on the agri-food sector (section 3.2), and how this has evolved over time (Section 3.3).

3.1 Descriptive indicators to measure Swiss NTMs

Whereas NTMs are not as easy to measure and to compare as tariffs, there are some common descriptive indicators to measure NTMs, most importantly coverage ratios, frequency indices, and prevalence scores, as defined and measured by UNCTAD (2020a, p.29). The **coverage ratio** provides the share of the total import value affected by one or more NTMs. Formally, the coverage ratio of NTMs imposed by country j is:

$$C_j = \left[\frac{\sum_i D_i V_i}{\sum_i V_i} \right] * 100$$

D_i is a dummy, taking the value of one if one or more NTMs are imposed on product i , and zero otherwise. V_i is the value of imports of product i . Agricultural products cover the Harmonized System groups HS 1-24, i.e. all agricultural and agri-food products, but also live animals (UNCTAD, 2021). Natural Resources include HS 25-27, most importantly metals, mineral fuels and oils, stone, cement and salt. Manufacturing includes both intermediate and final goods such as chemicals, steel, textiles, machinery, vehicles, etc. In Switzerland, the coverage ratio for manufacturing is 46%, indicating that less than half of the import value of Switzerland is affected by some type of NTM. In contrast, 79% of the import value of natural resources is subject to NTMs, and 100% of the agricultural import value is affected by at least one type of NTM (Figure 1).

An alternative measure is the **frequency index**, which reports the share of products affected by at least one NTM. Formally, the frequency index of NTMs applied by country j is:

$$F_j = \left[\frac{\sum_i D_i M_i}{\sum_i M_i} \right] * 100$$

As above, D_i is a dummy, taking the value of one if one or more NTMs are imposed on product i , and zero otherwise. M_i is a dummy variable, taking the value of one if there are any imports of product i , and zero otherwise. Consulting this alternative measure draws a similar picture: 99% of the imported agricultural products are subject to one or more NTMs, in contrast to 46% of manufactured import goods and 18% of natural resource products (Figure 1). A main drawback of both indices is that they suffer a downward bias if there are no longer any imports ($M_i=0$), or lower import values (small V_i) because of the NTM itself.

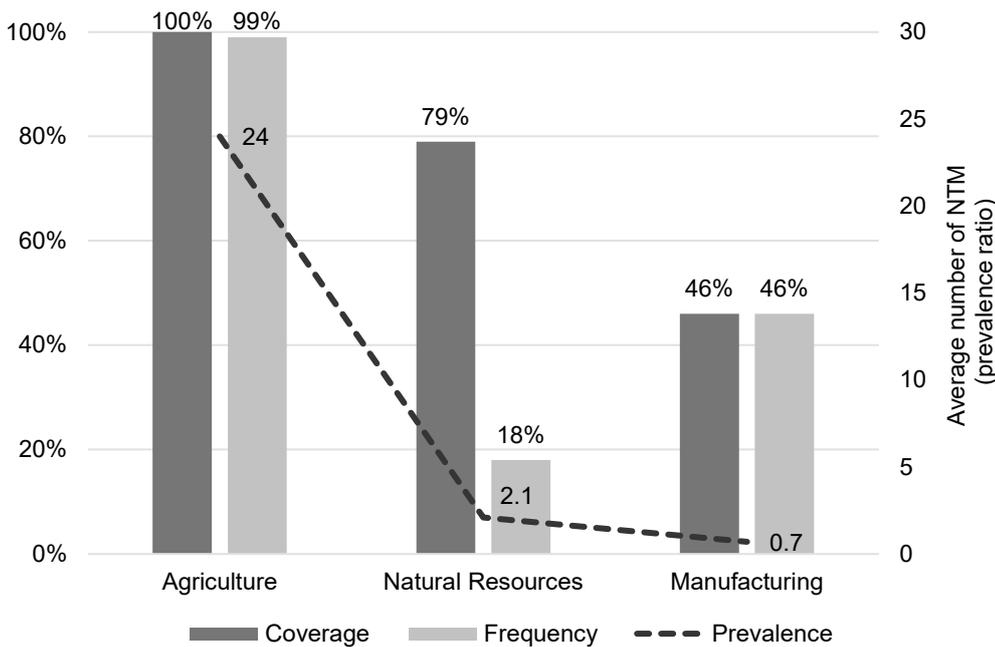
The **prevalence ratio** captures the fact that often, more than one NTM is applied to a product, by measuring the average number of NTMs affecting an imported product:

$$P_j = \left[\frac{\sum_i N_i M_i}{\sum_i M_i} \right] * 100$$

where N_i is the number of NTMs on product i , and M_i is again a dummy variable, taking the value of one if there are any imports of product i , and zero otherwise. On average, agricultural import products are affected by 24 different NTMs, for manufacturing and natural resources the score is considerably lower with 2.1 and 0.7 NTMs per product respectively. However, this indicator does not say anything about the stringency, because the number of NTMs does not necessarily reflect how strict the respective measures are. Yet, in tendency a greater number of NTMs applied to a product, especially if the measures are from different chapters, hint at a stronger trade regulation of this product.

All three indicators show how omnipresent NTMs are for agricultural goods, and motivate us to focus the further analysis on agricultural and food products (HS1-24).

Figure 1: Coverage, frequency, and prevalence ratio for all types of NTMs applied to Swiss imports by industry (2020)



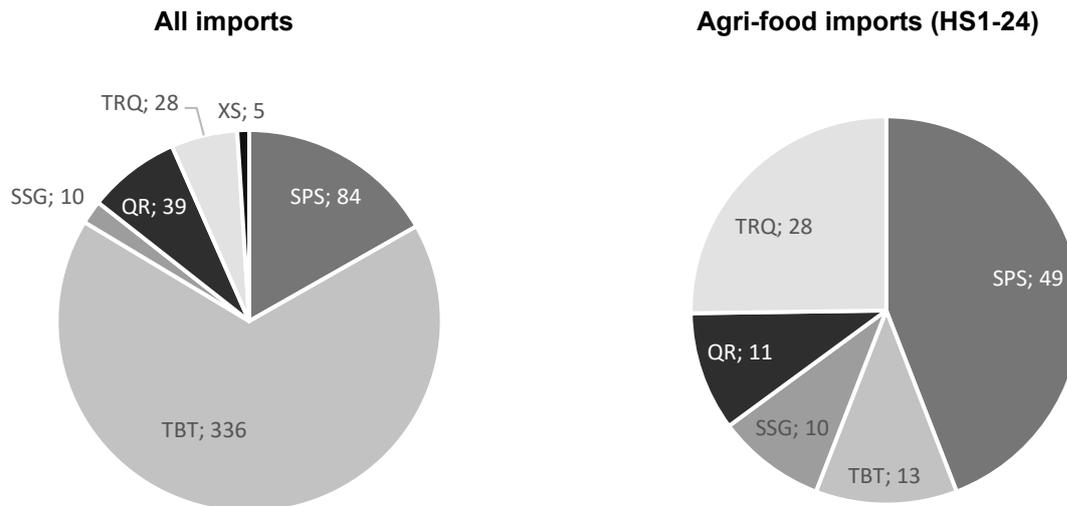
Notes: Sectors are defined by the Harmonized System (HS) at 2-digit: Agriculture corresponds to HS 1-24, Natural Resources to HS 25-27, and Manufacturing to 28-97; Source: UNCTAD (2021)

3.2 The distribution of NTMs along product groups

Figure 2 shows that, considering overall trade, Technical Barriers to Trade (TBT) make up for most of the NTMs imposed by Switzerland, accounting for 336, or 69% of all NTMs. Narrowing it down to agri-food imports (HS 1-24), TBTs become less important, posing only 13, or 12% of all NTMs. Here, Sanitary and Phytosanitary (SPS) measures are the most important group, with 44% of all NTMs (49), followed by 28 tariff-rate quotas (TRQs, 25%).⁹ The remaining agri-food NTMs are quantitative restrictions and special safeguards measures (about 10% each). The fact that SPS measures are more prominent than TBT in the agri-food sector is not surprising and a direct cause of how the WTO defines these two groups of measures. For TBT, the “type of measure” (i.e. all technical regulations, except when they are Sanitary and phytosanitary measures) defines if a measure falls under the TBT agreement. For SPS, the “purpose of measure” (i.e. any measure — not necessary technical — to protect human, animal or plant life or health) determines the application of the SPS Agreement (Negi, 2020). As a result, sustainability standards, which are of growing importance both internationally and also in Switzerland, can be classified as TBT, or as SPS. While in manufacturing and natural resources, they will mostly fall under the category of TBT; for agricultural and food products they will mostly be defined as SPS, as they in some way aim to protect human, animal or plant life or health. Hence, the border between TBT and SPS may sometimes be a matter of perspective, rather than a clear-cut technical difference.

⁹ In the names source i-tip.wto.org, 28 TRQs are counted. Other sources (WTO, 2022c) count 26 TRQs, depending on how whether certain wine quotas are summarized into one quota or not.

Figure 2: Number of NTMs imposed on imports by Switzerland, by type (2021)



Abbreviations: Sanitary and Phytosanitary [SPS, Chapter 1], Technical Barriers to Trade [TBT, Chapter 2], Special Safeguards [SSG, Chapter D], Quantitative Restrictions [QR, Chapter E], Tariff-rate quotas [TRQ, Chapter E], Export Subsidies [XS, Chapter P]; Source: *i-tip.wto.org*, measures in force 31/12/2021

It is worth noting that there are no export-related measures in Figure 2. Until 2019, Switzerland has paid export subsidies to the food processing industry to compensate for the high prices of Swiss agricultural raw materials such as milk and certain cereals. The largest beneficiaries of the so-called “chocolate law” were large dairy processors. Since 2019, to comply with WTO rules, this export subsidy no longer exists, but comparable amounts continue to be paid via different channels (Olsommer & Courleux, 2019).¹⁰ The government payment is now no longer tied to exports. Instead, commercial milk producers now receive a fixed amount per kg of milk products and grain farmers payments based on the area under cultivation (FOAG, 2019; SGPV, 2019). These support payments are financed by shifting the previous export contributions to the agricultural budget (Swiss Federal Council, 2017). The export supporting fund is now provided on a private and voluntary basis within the industry. Hence, the subsidy no longer falls under the WTO definition of government export subsidy. Therefore, in the official statistics, there are no longer any measures falling under the category of export-related measures. This case has been cited as an example of how Switzerland manages to comply with WTO requirements, without giving up its high support payments in the agricultural and food sector (Siegenthaler, 2017).

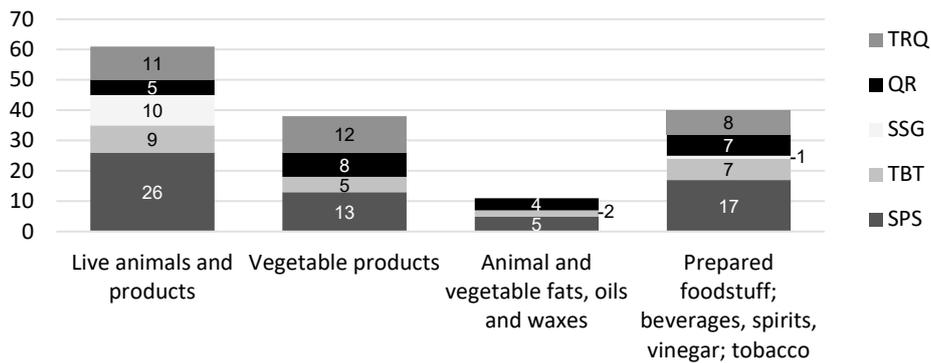
Figure 3 splits the agri-food sector further down into the product groups (1) live animals and products, (2), vegetable products, (3) fats and oils, and (4) prepared foodstuffs. We see that 61 different NTMs apply to live animal and animal products, mostly SPS measures (26).¹¹ For vegetable products, there is a larger share of quantitative restrictions (QR)¹² and tariff rate quotas (TRQs). To the product group of animal and vegetable fats, SPS measures, TBT and QR apply. Prepared foodstuff, including beverages, spirits and tobacco, are also subject to all types of NTMs, mostly SPS.

¹⁰ The federal government currently pays producers an allowance of 4.5 cents per kg of milk. The processors in turn deduct this amount from the milk price. For milk that is not processed into cheese, the processor pays this amount into two funds. 80% of this money goes towards lowering the price of raw materials for export products such as chocolate, replacing the previous export subsidy with a private regulation between producers and processors. The remaining 20% is used in a second fund for the export of milk fat to the world market.

¹¹ The statistics includes 10 Special Safeguards (SSG), which are notified, but not applied in practice (compare footnote 3).

¹² The official *i-tip.wto* statistics count 24 QR in total. However, these are very specific cases with little relevance for Swiss agricultural imports, such as (a) Restriction of trade for certain animals and plants in order to protect certain species of wild fauna and flora, (b) prohibition on the import of fish from illegal, unreported or unregulated fishing, (c) Narcotics, psychotropic substances and precursors used and marketed for legal purposes.

Figure 3: Number of NTMs applied for agri-food imports by type and product category (2021)



Abbreviations: Sanitary and Phytosanitary [SPS], Technical Barriers to Trade [TBT], Special Safeguards [SSG], Quantitative Restrictions [QR], Tariff-rate quotas [TRQ]; Source: *i-tip.wto.org*, measures in force 31/12/2021

4 The role of NTMs in Swiss trade agreements

The previous section showed that a variety of NTMs apply to Swiss agri-food imports, which can present a barrier to trade. The general idea of free trade agreements is to reduce trade barriers, including NTMs. The basis for the reduction of such technical barriers to trade are meant to be the multilateral agreements of the WTO. However, this multilateral pillar with Switzerland's active WTO membership is currently more or less on hold, with little progress, among other factors because of a blockade of the WTO by the USA (Bown & Keynes, 2020; Sinha, 2021). Switzerland aims to further reduce technical barriers through two different ways. First, it autonomously harmonizes National technical regulations with those of its trade partners. The Federal law on technical barriers to trade (SR 946.51) contains the principle that technical regulations and standards are to be designed in such a way that they do not present technical barriers to trade (SECO, 2016). Therefore, they shall correspond to the rules of major trade partner, i.e., mostly the EU. Exceptions are only permitted if there are good reasons such as the protection of health, environment, or consumer rights. Second, Switzerland negotiates bilateral or multilateral mutual recognition agreements (MRAs), mostly as a part of bilateral trade agreements, which are gaining in importance and are likely to increase further in the future.

4.1 Mutual Recognition Agreements

In an MRA, the importing country pledges to recognize the conformity assessments carried out in the exporting country and vice versa if certain conditions are fulfilled. Switzerland has enforced both "traditional" and "extended" MRAs. The MRA between Switzerland and Canada follows the traditional approach and came into force 1 May 1999. Both countries recognize the conformity assessment carried out in the other (exporting) country, if two conditions are fulfilled. First, the product complies with the technical regulations of the importing country. Second, the conformity assessment body of the exporting country is recognized under the MRA, avoiding double conformity assessments. In extended MRAs, both parties harmonize the technical regulations in a certain product sector, and are then considered equivalent. In this case, one conformity assessment by a recognized assessment body is sufficient to market a product in both countries. Extended MRAs are in place with the EU and the EFTA states, which the next sub-section describes in more detail (SECO, 2018).

4.2 Bilateral agreements and extended MRAs with the EU

In 2021, 47% of all Swiss exports went to the EU in terms of value, and 61% of Swiss imports came from the EU, with even higher value shares in the agricultural sector (51% exports, 74% imports) (Federal Statistical Office, 2022). Large parts of the industrial trade flows are governed by the Free Trade Agreement (1972 FTA), which came into force in 1973, but excluded agricultural products. The Comprehensive Bilateral Agreement I came into force in 2002, and included a Mutual Recognition Agreement (MRA) to remove technical barriers to trade for industrial products. Part of the Bilateral Agreement I is an Agreement on Trade in Agricultural Products (SR 0.916.026.81), aiming to

facilitate trade in agricultural products, live animals and products of animal origin. It eliminated duties and quotas for cheese and introduced tariff concessions for fruit and vegetables, wine, dried meats and horticulture. It also eliminated certain non-tariff barriers to trade, in particular for wine and spirits, organically produced foods¹³, phytosanitary measures, animal feed and seeds (Federal Department of Foreign Affairs, 2019). In 2009, Switzerland became part of the common veterinary area of the EU, abolishing border veterinary controls for trade in animals and animal products (Annex 11 to the Bilateral Agreement on Agriculture) (FOAG, 2022).

Whereas the Comprehensive Bilateral Agreement I dealt with basic agricultural products, the Bilateral Agreement II of 2004 included processed agricultural products, a category which was until then somewhere in between agricultural and industrial products. Negotiations led to an amendment to Protocol 2 of the 1972 FTA (SR 0.632.401.2) and came into force in 2005. It created tariff- and quota-free market access to the EU for the agri-food industry, aiming to increase the competitiveness of the Swiss food processing industry, especially for export products such as chocolate, biscuits, coffee, soft drinks, and pasta products. The EU no longer imposes tariffs on imports or subsidizes its exports to Switzerland for these products. In return, Switzerland has reduced its import tariffs (Federal Office of Foreign Affairs, 2021). And indeed, trade in processed agricultural products with the EU has increased 82% from 2005 to 2019, resulting in a trade volume of CHF 7.4 billion in 2019 (Federal Office of Foreign Affairs, 2021). However, the Bilateral Agreement II and the Protocol 2 amendment deal mostly with tariffs and contribute little to remove non-tariff barriers in the agri-food sector, as the MRA of the Bilateral Agreement I did.

In parallel to the MRA with the EU, an MRA with the EFTA member states was agreed. The provisions correspond to those of the MRA between Switzerland and the EU, whereby a uniform regulation for Switzerland and the entire EEA (i.e., the EU and Iceland, Liechtenstein and Norway) could be achieved. The mutual recognition of conformity assessments could also be extended to Turkey. The free trade agreement EFTA - Turkey was supplemented in 2009 by a protocol regulating the mutual recognition of conformity assessments (Protocol V) (EFTA, 2021).

A recent MRA is the one signed between Switzerland and the United Kingdom, as part of the CH-UK Trade Agreement, which entered into force on 1 January 2021 (Swiss Federal Council, 2021a). As a reaction to Brexit, the agreement replicates most of the trade-related regulations of the Bilateral Agreements between the EU and Switzerland. However, certain sections of the MRA, which focused on the harmonization with EU rules, were no longer valid, as there is no longer a direct harmonization between the UK and the EU (SECO, 2022b).

4.3 Cassis de Dijon principle

Finally, in its trade relations with the EU, Switzerland applies the so-called “Cassis de Dijon principle”. This principle stipulates that a product, which complies with the technical regulations of the EU, an EU member state, or that of the EEA, and is marketed in one of these states, can be legally placed on the Swiss market without any additional controls (Art. 16a of the Law on Technical Barriers to Trade). Exceptions to the principle are possible when public interests are at stake and are included in an indicative negative list. For foodstuff, however, a special regulation was introduced. While they must not comply fully with the Swiss technical regulations, their import must still be authorized by the Swiss Federal Food Safety and Veterinary Office (FSVO), who then checks that the product in question is not dangerous to health and issues an authorization for this importer, covering all food products of the same type. In particular, they check if residues of pesticide and other foreign substances do not exceed certain limits determined by the Swiss authorities (FSVO, 2016). The Cassis de Dijon principle was adopted on 1 July 2010, by implementing the revised Federal Law on Technical Barriers to Trade (SECO, 2016).

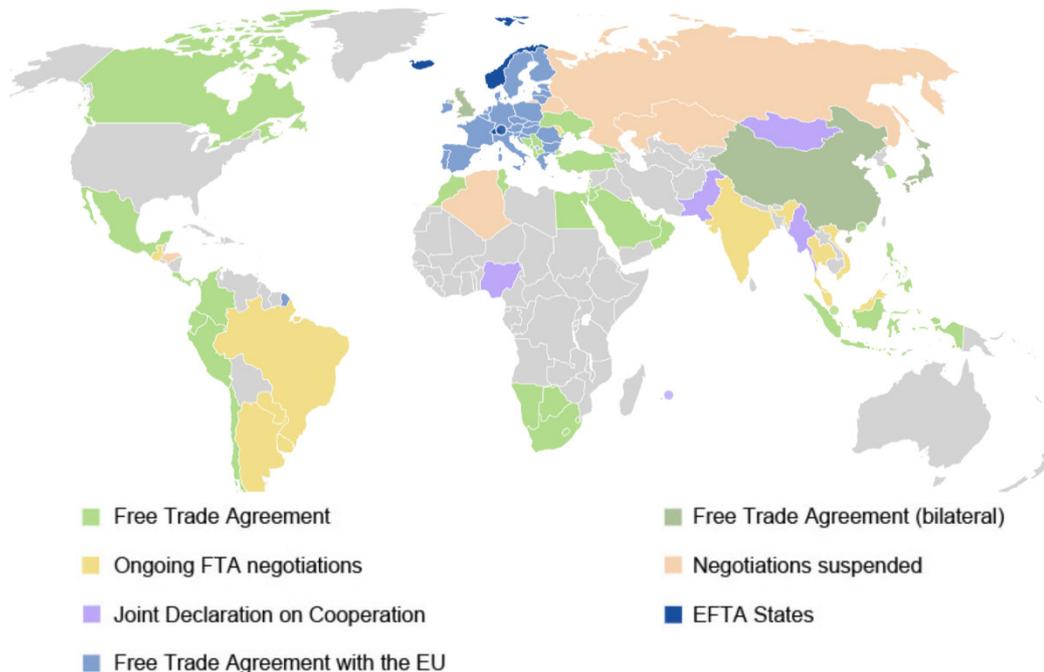
4.4 Non-EU Free Trade Agreements

Besides the bilateral agreements with the EU, Switzerland currently has a network of 30 preferential trade agreements with 40 partners globally (SECO, 2022a, Figure 4). The agreements are normally concluded within the framework of the EFTA, i.e., jointly with the other EFTA members Iceland, Liechtenstein, and Norway. Exceptions are bilateral agreements with the United Kingdom, Japan, China and the Faroe Islands, negotiated between Switzerland and the respective partner only. Further agreements are currently in negotiations (India, Malaysia,

¹³ This refers to the Swiss national regulation for organic products. The commonly used Bio Suisse (Knospe) organic standard is a private market standard with stricter requirements (see also Section 6.2).

MERCOSUR, Moldova, Thailand, and Vietnam). If and to what extent the removal (or introduction) of NTMs are subject of the agreements differs from treaty to treaty and is yet to be analyzed in more detail.

Figure 4: Map of preferential trade partners of Switzerland



Source: SECO, 2022a

4.5 Designation of origin

With its law on the protection of geographical indications of products and services, which entered into force in 2000, the WTO defines a minimum standard of protection in a multilateral setting (WTO, 2000). On top of this, Switzerland negotiates such agreements with like-minded partner countries in order to reach a level of protection that goes beyond these minimum standards. The negotiations are usually conducted by the Swiss Federal Institute of Intellectual Property (IPI) in collaboration with the Federal Office for Agriculture (FOAG).

Already in the 1960s and 1970s, Switzerland negotiated several bilateral treaties on geographical indications with individual European countries, which were then replaced by a comprehensive agreement with the EU of 21 June 1999 (Annex 7 on wines and Annex 8 on spirits of the Agriculture Agreement (RS 0.916.026.81)). In 2011, Annex 12 was added to the bilateral agreement on agriculture, ensuring a mutual recognition of protected designations of origin (PDOs) and protected geographical indications (PGIs), including several regional cheese and meat specialties (Swiss Federal Council, 2020). This means that protected geographical indications and names of states and cantons may only be used in compliance with the law of the country of origin. A designation such as “Gruyère cheese” can only be used for products from the corresponding region, which are produced according to the relevant product specification. This also applies to designations such as “Gruyère-type cheese”. Further bilateral agreements of this type were agreed with Mexico (2000), Russia (2010), Jamaica (2013), and Georgia (2018) (IGI/IPI, 2019). However, to date there is no such agreement with the United States, which is an important export market for Swiss cheese. Recently, a Court decision in the state of Virginia stated that in the United States, “gruyere” is a generic term for a type of cheese, and therefore not eligible for legal protection regarding the geographic origin (Price, 2022). It argued that in the US market, the connection between the term “gruyere” and the region Gruyère has nullified over time. As there is no treaty regarding the mutual recognition on geographic indications, US retailers can label cheese as “gruyere” regardless of the region where it was produced. And indeed, most cheese marketed as Gruyere in the US does not come from Switzerland or France, but from the Netherlands, Germany, or Austria (Price, 2022). This example illustrates that geographical indications remains a mostly European topic, where “geographical indications represent the wealth and diversity of our European culinary heritage” (European Commission, 2022a) and are hence a priority on the EU and Swiss agenda.

5 A new generation of sustainability standards

In recent years, sustainability standards began to play an increasing role, in most recent years also in bilateral trade negotiations. Sustainability standards and certifications aim to provide a proof of product and process adherence to certain environmental, social and ethical standards at different stages in the value chain (Vorley et al., 2010). Already in 2013, Switzerland and China signed a preferential trade agreement, which includes a chapter on environment and multiple environmental provisions. In fact, a recent comparative analysis of several preferential trade agreements (PTAs) finds that this PTA between China and Switzerland is the “greenest” of all the 48 investigated agreements, covering the highest number of environmental dimensions (Berger et al., 2020). Also domestically, Switzerland has a high degree of voluntary sustainability standards (VSS) adoption, as the United Nations Forum on Sustainability Standards (UNFSS, 2020) attests. This is not surprising, as VSS adoption is generally correlated with income levels (UNFSS, 2020). While there are some general standards covering the social, economic, and/or environmental dimension of sustainability (e.g. GlobalGAP, Rainforest Alliance), for environmental sustainability, there are also more and more commodity-specific, mostly private standards. Building on the success of the Marine Stewardship Council (MSC) and Forest Stewardship Council (FSC), other multi-stakeholder initiatives followed, most prominently the Roundtable on Sustainable Palm Oil (RSPO), which was established in 2004, aiming to promote the growth and use of sustainable palm oil products (Vorley et al., 2010).

5.1 Product-specific standards: The case of palm oil

Product-specific, or more precisely palm oil specific concerns also became a core element of the EFTA trade negotiations with Indonesia and Malaysia. After several years of negotiations, which started in 2012, a Comprehensive Economic Partnership Agreement (CEPA) between the EFTA States (Switzerland, Iceland, Liechtenstein and Norway) and Indonesia entered into force in November 2021 (SECO, 2021). The negotiations with Malaysia on the other hand so far have not resulted in an agreement. The agreement with Indonesia includes concessions regarding palm oil which are tied to defined production standards that meet certain sustainability standards. It is the first time that Switzerland has negotiated and signed such a treaty with clear and specific sustainability requirements for an imported product. Importers who want to import palm oil from Indonesia at a preferential tariff rate (tariff reduction of 20-40%, depending on the type of oil and applicable quota) must provide proof of compliance with Article 8.10 of the agreement (“Sustainable Management of the Vegetable Oils Sector and Associated Trade”). The agreement does not invent any new standards, but takes over existing standards, accepting two types of Roundtable on Sustainable Palm Oil (RSPO) certification (Identity Preserved and Segregated) as well as two other, already established certification systems¹⁴ as proof of the sustainability requirements (SECO, 2021). If the sustainability and traceability criteria are not fulfilled, the imported palm oil cannot benefit from the preferential terms under the agreement (SECO, 2021). While the official bodies still have to control the proof of sustainable and traceable palm oil, they outsource much of the responsibility to private certification bodies. It is up to them to define the criteria and control mechanisms of what is eventually labeled “sustainable” palm oil. For the case of the most relevant standard RSPO, it is a multi-stakeholder association with its seat in Zurich and more than 5000 members, including companies from all stages of the palm oil supply chain, NGOs, and industry associations. Its success in bringing together actors has led to a certification of 19% of the globally produced palm oil in 2021. In Switzerland, there was a strong opposition against the agreement by several interest groups with environmental concerns. Eventually, only a narrow majority of Swiss voters (51.65%) approved a referendum on the CEPA, presumably due to concerns regarding the sustainability of palm oil. By explicitly including sustainability clauses into the agreement, Switzerland tried to address these concerns and to contribute towards international efforts to improve sustainability standards in this area. Less clear is how “sustainable” the certified palm oil really is. Large scientific studies find that RSPO certified palm oil was associated with reduced deforestation (Carlson et al., 2018). However, also certified plantations continue to cause deforestation and do not always apply better farming practices than their non-certified counterparts (Gatti & Velichevskaya, 2020). Also, the use of child labor and forced labor could be documented in RSPO certified plantations (International Labor Rights Forum, 2013). While the focus of the agreement is on private market solutions, particularly on the RSPO, the Swiss government also actively participated in the debate with non-

¹⁴ International Sustainability and Carbon Certification PLUS (ISCC PLUS), supply chain model “Segregated” and certification by the Palm Oil Innovation Group (POIG) (Swiss Federal Council, 2021b).

governmental actors. SECO has established a strategic partnership with the Sustainable Trade Initiative, working together with local governments on incentives to promote a more sustainable palm oil production (SECO, 2021).

It is yet to be seen how this agreement, linking sustainability standards to preferential tariffs, will influence the amount and composition of palm oil imports. Already in 2020, before the agreement entered into force, 95% of all the palm oil imported for the Swiss food industry was certified “sustainable”. Of these 95%, 5% was organic palm oil, the rest was almost entirely certified according to the RSPO value chain models “Identity Preserved” und “Segregated”¹⁵ (Biscosuisse, 2021). All large Swiss retailers demand these qualities, which are the two strictest certification schemes of the RSPO. Because of this high and increasing demand for sustainably produced palm oil from the industry, retailers, and ultimately the consumers, already today, importing companies voluntarily comply with these sustainability standards.

Moreover, in the most recent years prior to the agreement, there was almost no palm oil trade between Indonesia and Switzerland. In 2019, only 0.1 per cent of total Swiss palm oil imports came from Indonesia; most palm oil was imported from the world’s second largest palm oil producer Malaysia, as well as from several Least Developed Countries, which have a duty free market access to Switzerland. It is yet to be seen if the tariff reduction provides a sufficient incentive for importers to change (or to extend) their trade relationships toward Indonesian producers.¹⁶ Because the FTA with Malaysia is still in negotiations, there is now a relative tariff advantage for Indonesian palm oil certified as sustainably produced. Hence, there is the risk of a trade diversion effect to the disadvantage of Malaysian palm oil exporters.

5.2 The role of private market actors

There is another reason why sustainability standards may be more difficult to handle and to regulate than other technical barriers. In particular for standards dealing with environmental protection, animal welfare, fair trade, etc., one must distinguish between those established by public authorities, and those established by “private”, or non-governmental entities, including wholesale or retail stores, national producer associations, civil society groups, or combinations of them (Thorstensen, Weissinger & Sun, 2015). Such private standards are often viewed as voluntary, opposed to public standards, which can be mandatory or voluntary (WTO, 2015, p.33). While private standards are voluntary in theory, de facto they can become mandatory, if well established and required for market access by large private market players (e.g. food retailers), or implicitly endorsed by governments (Negi, 2020). Some even question if such a strict distinction between public and private standards is useful, also because there is a close interaction between governments and civil society actors to form partnerships addressing sustainability topics in global supply chains (Lambin & Thorlakson, 2018; Marx, 2017). Also in Switzerland, private standards are imposed by a wide range of actors, either on an individual firm level (e.g. Coop Naturaplan, Migros Terra Suisse), nationally (e.g. IP Suisse, SwissGAP), or internationally (GlobalGAP, Marine Stewardship etc.). In total, this results in a diverse landscape of different sustainability labels, with different underlying social and environmental standards. For Swiss food retail alone, there were at least 31 different sustainability labels, as evaluated by WWF (2015).

How diverse – and confusing – the label landscape has become, can be observed in the organic sector. Some of the organic labels only apply to Swiss products (e.g. Natura-Beef Bio), others certify both imported and domestic products. In this case, most labels apply the same requirements and standards for domestically produced and imported products. However, there are exceptions in some private labels for organic products (Demeter, Migros Bio, Biotrend Lidl, Spar Natur Pur). They require Swiss producers to comply with the relatively strict Swiss organic standards of Bio Suisse (“Knospe”), while for imports they rely on the lower EU organic standards, with some additional private-label specific requirements (WWF, 2015). Therefore, the border between consumer-focused eco-branding based on sustainability attributes and clear standards with trade-relevant third-party certification schemes becomes blurred in this complex landscape of sustainability labels (Chkanikova & Lehner, 2015). This is also true for Switzerland, where the large retailer Coop has reported that their private label eco-brands generate higher revenues

¹⁵ “Identity preserved” is palm oil from a single identifiable certified source and is kept separately throughout the supply chain, so it can be traced back to the exact source. “Segregated” is a mix of certified palm oil from different sources, which are then transported and processed jointly, but kept separately from ordinary, non-certified palm oil. Further, the RSPO has a mass balancing model, in which certified palm oil is mixed with ordinary palm oil. Finally, there is a book & claim model, where the supply chain is not monitored, but manufacturers and retailers can buy credits from RSPO-certified growers and crushers.

¹⁶ How much palm oil has been imported from Indonesia under the preferential tariff quota can be tracked at <https://zollkontingente.douane.swiss/>. By November 2022, only 21 tons out of the allowed 10'000 tons for the year 2022 had been imported.

and have a “greater resonance with consumer demand for sustainability” than independent third-party sustainability labels (Chkanikova & Lehner, 2015; Organic Monitor, 2010). Its large competitor Migros claimed that its introduction of a private Migros Bio label was accompanied by “significant price reductions” for many products, in order to make organic products affordable to all customer groups (Migros Group, 2010). Even though there is a Swiss national organic farming ordinance (Swiss Federal Council, 2022), for Swiss products mostly the private organic standards “Knospe” by Bio Suisse is used. Yet, there is an effort to mutually recognize national organic standards, facilitating trade with organic products. Switzerland and the EU were the first ones globally to establish bilateral equivalence in 2002 (Annex 9 of the bilateral trade agreement on agricultural products). In 2012 and 2013, Switzerland also signed mutual recognition agreements for organic standards with Canada and Japan, in 2015 with the United States. While this covers Switzerland’s largest trade partners, there are still no such MRAs regarding organic standards with developing countries.

Whether private standards reduce, enhance, or divert trade, and under what conditions, has been subject to several recent studies (e.g. Hobbs, 2010; Schuster & Maertens, 2015; Fiankor et al., 2019). Regardless of the empirical trade effect, private standards play an important role in transforming agri-food markets towards higher levels of sustainability, as they reduce transaction costs and liability risks of many actors in the food supply chain (Chkanikova & Lehner, 2015). While some argue that private standards allow developing countries and smallholders to improve their positioning in international markets (Loconto & Dankers, 2014), others criticize that private standard adoption lacks transparency and democracy (Mbengue, 2011; Marx et al., 2012) and that standard-takers are often actors with little bargaining power, who can find it hard to take account of their interests against standard-setters (Lee et al., 2012; Mavroidis & Wolfe, 2017).

5.3 Comparison to other countries

Having gained a first overview on the role of NTMs in Swiss agri-food trade, this section now puts the Swiss approach into an international context. Is the Swiss way different from the European or the American way?

The EU is often said to play a globally dominating role when it comes to the use of standards (Henson & Humphrey, 2010; Michida & Nabeshima, 2017). For more than 15 years, the EU has included environmental and labor standards in its FTAs with its trade partners. First in 2011 with Korea, the EU has included dedicated sustainability chapters into its FTA for this purpose. In these chapters, the EU has mostly followed the so-called promotional approach. This approach favors soft law policy tools, i.e. principles and declarations that are not directly legally binding. From a legal perspective, direct trade sanctions for non-compliance with this chapter are absent in many cases.¹⁷ Instead, the commitments are enforced through a dispute settlement mechanism, leading to recommendations by an expert panel (Garcia, 2022). The EU’s approach has so far relied on norm-setting, self-regulation, peer review and international monitoring, and is hence comparable to private forms of trade governance, where corporate codes of conduct and voluntary supply-chain certifications are used to govern trade relationships (Campling et al., 2016). In a recent communication on sustainability in trade agreements, the European Commission (2022b) puts further emphasis on this. The communication defines not just the inclusion of sustainability commitments into trade agreement, but also their monitoring and implementation as priorities for European trade relationships. The European Commission (2022b) further announced that the EU will include more direct trade sanctions for breaches of sustainability clauses in trade agreements. Hence, in ongoing and future negotiations, the EU will no longer solely rely on soft law tools.

Also New Zealand and South-South trade agreements, i.e., trade agreements among developing economies tend to adopt such a promotional approach, where “provisions do not link compliance to economic consequences but provide a framework for dialogue, cooperation, and/or monitoring” (ILO/IILS, 2013). This approach heavily relies on the pressure of civil society watchdogs (Hughes et al., 2007). It is yet to be seen whether New Zealand and other South-South trade agreements will follow the example of the EU and include more direct sanctions in future negotiations.

The USA and Canada on the other hand follow a “conditional” or “sanction-based” approach. Their FTAs include environmental / social / labor provisions that make the conclusion of the agreement conditional on defined standards (“pre-ratification conditionality”). Once the agreement has entered into force, provisions allow for sanctions to be taken if agreed-upon standards are violated (“post-ratification conditionality”). Whereas the USA makes use of both

¹⁷ Also the EU has sanctionable elements concerning sustainability, e.g. linked to the violation of the Paris Agreement and ILO conventions on labor standards. Non-compliance can directly lead to the withdrawal of trade preferences.

pre- and post-ratification conditionality, Canada mainly applies post-ratification conditionality (ILO/IILS, 2013; Campling et al., 2016).

The Swiss/EFTA approach, as taken in the CEPA with Indonesia, could present a compromise, or a “third way” regarding enforceability and sanctions. Besides general provisions on sustainable development, the agreement includes a well-defined, product-specific sustainability standard for palm oil. If this standard is met and the exported palm oil is certified accordingly, the traders benefit from a reduced tariff, as defined in the agreement. If the traded product does not meet the standard, and is not certified accordingly, it can still be imported, but at the regular, higher tariff. Hence, no sanctions and no dispute settlements are necessary. It is purely up to economic incentives to reach compliance with the defined standards. However, such an approach relies heavily on private market actors. First, it is up to them which quality they demand. Swiss importers and Indonesian exporters need to agree not only on quantity and price, but also on the quality and on the certification process. Second, it is dependent on private sustainability standards and certification processes, particularly of the RSPO.

However, Switzerland does not always play a pioneering role in the global NTM landscape. Obviously, there are also other countries defining standards, negotiating bilateral trade agreements and closing mutual recognition agreements, and Switzerland is not always involved. While the literature on NTMs often focuses on trade diversion¹⁸ effects for developing countries, also wealthy countries with high standards such as Switzerland can suffer from such trade diversion effects, as the following organic chocolate case illustrates (Bowen & Hoffmann, 2015). When the United States and the EU closed a MRA for organic standards in 2012, powdered milk suppliers in the EU and cocoa suppliers in developing countries dropped their United States National Organic Program (NOP) certification, as they now only needed an EU certification to access both the U.S. and the EU market. Now, Swiss organic chocolate producers with markets in the United States could no longer find NOP certified suppliers of milk powder and cocoa. Because Switzerland had no such equivalence agreement with the United States and they could no longer find NOP certified ingredients, Swiss organic chocolate producers were virtually excluded from the US market. Three years later, in 2015, also Switzerland signed a MRA for organic standards with the United States, allowing Swiss chocolate producers to market their organic-certified products also in the U.S., making the NOP certification obsolete (FOAG, 2020).

5.4 The role of the WTO

We saw that private standards, and sustainability standards in particular, are becoming an important feature of international food markets, including the Swiss one. In contrast to public standards, the WTO has no jurisdiction over private standards (Aerni, 2013). The fact that the WTO does not recognize private standards unless they are “backed by governments” (Thorstensen & Vieira, 2016, p. 49) has been criticized as in particular process-oriented sustainability standards may not always be in line with the WTO principle of non-discrimination. Because by definition, standards have market access implications, the WTO is expected to play some role in regulating and managing their application. Yet, to date, the WTO limits this responsibility to public standards and only takes an observing role when it comes to private standards (Negi, 2020). Thorstensen & Viera (2016, p.65) argue that a “meta-regulation” is needed and suggest that the United Nations Forum on Sustainability Standards (UNFSS) could fill this role. In the interim, they argue that the TBT and SPS Committees of the WTO should investigate the use of private standards, as their principles should also apply to private standards. The central aim of the TBT Agreement is that non-tariff measures are not “more trade-restrictive than necessary to fulfil a legitimate objective....” (WTO, 1994, Article 2.2). Annex 3 of the TBT Agreement indirectly also governs private standards, presenting a “Code of Good Practice”, which proposes how governmental and non-governmental bodies should prepare, adopt, and apply standards (WTO, 1994, Annex 3). The SPS Agreement further encourages the use of the large international standards, in particular the *Codex Alimentarius* for food safety, the *International Plant Protection Convention* (IPPC) for plant safety, and the *World Organisation for Animal Health* (OIE) for animal health. For public standards, WTO Members may only set higher protection levels if there is sufficient scientific evidence for the existence of a risk for human, animal or plant health. However, it is in the nature of voluntary private standards to go beyond these lower official standards. What exactly is “legitimate”, “necessary”, and what is a real “risk”, is of course subject to interpretation.

¹⁸ Trade diversion means that trade is diverted from a more efficient exporter towards a less efficient one, because some trade partners are treated preferentially, e.g. because of the formation of a customs union, a free trade agreement, or the introduction of NTMs.

6 Conclusion

This analysis has shown that also in Switzerland, NTMs play an ever-increasing role in international trade. There are two opposing movements: On the one hand, more NTMs are created, as the landscape of private sustainability standards and organic labels continuously grows. On the other hand, there is an effort to harmonize standards and to mutually recognize them in multi- or bilateral trade agreements, leading to a decrease in NTMs. This is not contradictory per se, as the newly created standards reflect the increasing demand for sustainability standards, resulting in a complex landscape of private voluntary standards regarding environmental and social concerns and organic production methods. On the other hand, Swiss / EFTA trade negotiations with several trade partners have successfully reduced purely technical and administrative barriers, e.g. through the mutual recognition of national standards and conformity assessments.

We have showed that Switzerland tries novel approaches regarding sustainability standards. The recently negotiated EFTA-Indonesia trade agreement includes product-specific sustainability requirements for palm oil imports, linked to preferential tariff rate for imports classified as sustainable. This agreement is also novel in a way that it relies on voluntary private standards, in this case on the RSPO and other private certification schemes. Such product-specific sustainability standards address the increasing concerns regarding environmental and social issues expressed by large parts of the population and several interest groups (Hirschi, 2020). At the same time, the agreement reduces tariff- and non-tariff-barriers for other, less sensitive manufacturing and technology products, which make up most of the bilateral trade flows.

While we were able to characterize the NTMs imposed by Switzerland for imports in a high degree of detail, this exercise remains to be done for the export side. Except for the trade partners with bilateral preferential trade agreements and mutual recognition agreements, there is still a large and diverse amount of NTMs applicable to Swiss food exports into other countries. These NTMs are potentially prohibitively high, hindering Swiss exporters to enter certain markets. This makes it difficult to empirically analyze, or even to merely summarize the global NTMs relevant to Swiss exporters. Also, the question how NTMs affect Swiss trade patterns, and decisions regarding product quality and prices for different market participants such as producers, processors, and retailers remains open and is subject to further research.

7 Glossary (WTO definitions)

CEPA	Comprehensive Economic Partnership Agreement
EEA	European Economic Area; including the EU countries, Iceland, Liechtenstein and Norway
EFTA	European Free Trade Association; a regional trade organization and free trade area consisting of Iceland, Liechtenstein, Norway and Switzerland
FTA	Free trade agreement
NTM	Non-tariff measures, such as quotas, import licensing systems, sanitary regulations, prohibitions, etc. Same as “non-tariff barriers”
PTA	Preferential trade agreement
QR	Quantitative restrictions — specific limits on the quantity or value of goods that can be imported (or exported) during a specific time period
RSPO	Roundtable on Sustainable Palm Oil, is a non-governmental organization with the objective of promoting sustainable palm oil products through global standards and multi-stakeholder governance
SPS	Sanitary and phytosanitary measures, are measures dealing with food safety and animal and plant health (sanitary: for human and animal health; phytosanitary: for plants and plant products)
SSG	Special Agricultural Safeguard, is a provision in the Agreement on Agriculture permitting some members to temporarily apply additional duties on imports of agricultural products in response to import surges or price falls as specified in the Agreement. The safeguard may be invoked by a member only for those products that had been subject to tariffication and for which the right to use the SSG is inscribed in its schedule of commitments.
TBT	Technical barriers to trade; such as technical regulations, standards, and conformity assessment procedures. They are covered by the WTO TBT agreement that aims to ensure they are non-discriminatory and do not create unnecessary obstacles to trade.
TRQ	Tariff rate quota, is an import regime in which quantities inside a quota are charged lower import duty rates, than those outside (which can be high).
UNCTAD	United Nations Conference on Trade and Development, an intergovernmental organization intended to promote the interests of developing states in world trade.
UNFSS	United Nations Forum on Sustainability Standards, a forum to providing information, analysis and discussions on Voluntary Sustainability Standards at the intergovernmental level.
VSS	Voluntary sustainability standards are norms and standards designed to ensure that a product is produced, processed or transported sustainably in order to contribute to specific environmental, social and economic targets.
WTO	World Trade Organization
XS	Export subsidies, are subsidies contingent on export performance covering agricultural products as defined under the Agreement on Agriculture in terms of budgetary outlays and quantities listed in members' schedules of commitments. Members agreed to eliminate all forms of agricultural export subsidies at the 10th Ministerial Conference in Nairobi, Kenya.

8 References

- Abegg, B. (2018). The Geographical Trade Mark: A Swiss Innovation Worth Copying?. *IIC-International Review of Intellectual Property and Competition Law*, 49(5), 565-590.
- Aerni, P. (2013). Do Private Standards encourage or hinder trade and innovation?. *NCCR Trade Working Paper*, (2013/18).
- Berger, A., Blümer, D., Brandi, C., & Chi, M. (2020). Towards Greening Trade? Environmental Provisions in Emerging Markets' Preferential Trade Agreements. In *Sustainability Standards and Global Governance* (pp. 61-81). Springer, Singapore.
- Bettschart, F. (2014). Wo Schweiz draufsteht, soll auch Schweiz drinstecken! Federal Department of Economics, Development and Research (SECO), 10-2014, 87, p. 25. Accessed at <https://dievolkswirtschaft.ch/de/2014/10/frc/>
- Biscosuisse (2021). Kompakt: Palmöl und Nachhaltigkeit. Retrieved from <https://www.biscosuisse.ch/publicassets/Newsletter/Dateien-Newsletter/2021/4-2021/kompakt-Palm%C3%B6l-und-Nachhaltigkeit.pdf>
- Bowen, D., & Hoffman, U. (2015). Plurilateral Regulatory Cooperation on Organic Agriculture and Trade. UNFSS Discussion Paper No. 5. Retrieved from https://unfss.files.wordpress.com/2013/02/unfss_5-_pluri_regulatory_cooperation-final_apr_2015.pdf
- Bown, C. P., & Keynes, S. (2020). Why trump shot the sheriffs: the end of WTO dispute settlement 1.0. *Peterson Institute for International Economics Working Paper*, (20-4).
- Campling, L., Harrison, J., Richardson, B., & Smith, A. (2016). Can labour provisions work beyond the border? Evaluating the effects of EU free trade agreements. *International Labour Review*, 155(3), 357-382.
- Carlson, K. M., Heilmayr, R., Gibbs, H. K., Noojipady, P., Burns, D. N., Morton, D. C., ... & Kremen, C. (2018). Effect of oil palm sustainability certification on deforestation and fire in Indonesia. *Proceedings of the National Academy of Sciences*, 115(1), 121-126.
- Chkanikova, O., & Lehner, M. (2015). Private eco-brands and green market development: towards new forms of sustainability governance in the food retailing. *Journal of Cleaner Production*, 107, 74-84.
- Das, A., Sharma, S. K., Akhter, R., & Lahiri, T. (2021). Special Safeguard Mechanism for Agriculture: Implications for Developing Members at the World Trade Organization. *The Journal of World Investment & Trade*, 22(5-6), 835-859.
- De Gorter, H., & Kliauga, E. (2006). Reducing tariffs versus expanding tariff rate quotas. *Agricultural Trade Reform and the Doha Development Agenda*, 117-160.
- De Melo, J., & Nicita, A. (Eds.) (2018). *Non-Tariff Measures: Economic Assessment and Policy Options for Development*, UNCTAD, pp. 1–218.
- EFTA (2019). Notification on price compensation measures for processed agricultural products. Switzerland – Notification, 01/03/2019. Retrieved from <https://www.efta.int/sites/default/files/documents/legal-texts/free-trade-relations/protocols-and-annexes/Notification%20on%20price%20compensation%20measures%20for%20processed%20agricultural%20products.pdf>
- EFTA (2021). Annex V to the EFTA-Turkey FTA. European Free Trade Association. Retrieved from <https://www.efta.int/mra/not-and-acc-conformity>
- Egger, P.H., & Larch, M. (2008). Interdependent Preferential Trade Agreement Memberships: An Empirical Analysis, *Journal of International Economics*, 76(2), 384-399.
- European Commission (2022a). Commission strengthens geographical indications to preserve high quality and reinforce protection. IP/22/2185. Brussels, 31.3.2022. Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/IP_22_2185

- European Commission (2022b). The power of trade partnerships: together for green and just economic growth. COM(2022) 409 final. Brussels, 22.6.2022. Retrieved from <https://circabc.europa.eu/ui/group/8a31feb6-d901-421f-a607-ebbdd7d59ca0/library/8c5821b3-2b18-43a1-b791-2df56b673900/details>
- Federal Department of Foreign Affairs (2019). Switzerland's European Policy: Agriculture. Retrieved from <https://www.eda.admin.ch/europa/en/home/bilaterale-abkommen/ueberblick/bilaterale-abkommen-1/landwirtschaft.html>
- Federal Department of Foreign Affairs (2021). Switzerland's European Policy: Processed agricultural products. Retrieved from <https://www.dfae.admin.ch/europa/en/home/bilaterale-abkommen/ueberblick/bilaterale-abkommen-2/landwirtschaftliche-verarbeitungsprodukte.html>
- Federal Office for National Economic Supply (2019). Compulsory stock amounts: Foodstuffs. Retrieved from https://www.bwl.admin.ch/bwl/en/home/themen/pflichtlager/pflichtlagersortiment/pflichtlager_ernaehrung.html
- Federal Statistical Office (2022). Import, Export. Retrieved from <https://www.bfs.admin.ch/bfs/en/home/statistics/industry-services/foreign-trade/balance-import-export.html>
- Fiankor, D.-D. D., Curzi, D., & Olper, A. (2021). Trade, price and quality upgrading effects of agri-food standards. *European Review of Agricultural Economics*, 48(4), 835-877.
- Fiankor, D.-D. D., Martinez-Zarzoso, I., & Brummer, B. (2019). Exports and governance: the role of private voluntary agri-food standards. *Agricultural Economics*, 50(3), 341-352. <https://doi.org/10.1111/agec.12488>
- FOAG (2019). Schoggigesetz. Agrarbericht 2019. Retrieved from <https://2019.agrarbericht.ch/de/politik/produktion-und-absatz/schoggigesetz?highlight=schoggigesetz>
- FOAG (2020). Import of organic products. Retrieved from <https://www.blw.admin.ch/blw/en/home/markt/kennzeichnung/biolandbau.html#accordion1652280488796>
- FOAG (2021). Finanzielle Mittel für Direktzahlungen. Agrarbericht 2021. Retrieved from <https://www.agrarbericht.ch/de/politik/direktzahlungen/finanzielle-mittel-fuer-direktzahlungen>
- FOAG (2022). Agrarabkommen CH-EU. Retrieved from <https://www.blw.admin.ch/blw/de/home/international/institutionen/europaeische-union-eu/agrarabkommen.html>
- FSVO (2016). Cassis de Dijon: Imported foods must not be dangerous to health. Federal Food Safety and Veterinary Office, 300/2014/00488 \ COO.2101.102.1.456317 \ 000.00.02. Retrieved from <https://www.blv.admin.ch/dam/blv/en/dokumente/import-export/rechts-und-vollzugsgrundlagen/cassis-de-dijon-importierte-lebensmittel-gesundheitsgefaehrdend.pdf.download.pdf/cassis-de-dijon-importierte-lebensmittel-gesundheitsgefaehrdend.pdf>
- Gatti, R. C., & Velichevskaya, A. (2020). Certified “sustainable” palm oil took the place of endangered Bornean and Sumatran large mammals habitat and tropical forests in the last 30 years. *Science of The Total Environment*, 742, 140712.
- García, M. J. (2022). Sanctioning capacity in trade and sustainability chapters in EU trade agreements: The EU–Korea case. *Politics and Governance*, 10(1), 58-67.
- Grübler, J., & Reiter, O. (2021). Characterising non-tariff trade policy. *Economic Analysis and Policy*, 71, 138-163.
- Henson, S., & Humphrey, J. (2010). Understanding the complexities of private standards in global agri-food chains as they impact developing countries. *The journal of development studies*, 46(9), 1628-1646.
- Hirschi, E. (2020). Palm oil referendum adds fuel to the political fire. *Organisation of the Swiss Abroad (OSA)*, 25.11.2020. Retrieved from <https://www.swisscommunity.org/en/news-media/swiss-review/article/politik-2>
- Huber, R. (2022). Einführung in die Schweizer Agrarpolitik. vdf Hochschulverlag AG, Zürich. ISBN: 978-3-7281-4059-3.
- Hughes, A., Buttle, M., & Wrigley, N. (2007). Organisational geographies of corporate responsibility: A UK–US comparison of retailers' ethical trading initiatives. *Journal of Economic Geography*, 7(4), 491-513.

- IGE/IPI (2019). Bilateral agreements on the protection of geographical indications and indications of source. Swiss Federal Institute of Intellectual Property. Retrieved from <https://www.ige.ch/en/law-and-policy/international-ip-law/bilateral-agreements/agreements-on-geographical-indications>
- ILO/IILS (2013). Social dimensions of free trade agreements. Geneva, ILO
- International Labor Rights Forum (2013). Empty Promises: RSPO Labor Case Studies.. International Labor Rights Forum. Retrieved from <https://laborrights.org/sites/default/files/publications-and-resources/Empty%20Assurances.pdf>
- Lambin, E. F., & Thorlakson, T. (2018). Sustainability standards: Interactions between private actors, civil society, and governments. *Annual Review of Environment and Resources*, 43, 369–393.
- Lee, J., Gereffi, G., & Beauvais, J. (2012). Global value chains and agrifood standards: challenges and possibilities for smallholders in developing countries. *PNAS* 109 (31), 12326–12331
- Loconto, A., & Dankers, C. (2014). Impact of international voluntary standards on smallholder market participation in developing countries: a review of the literature. Food and Agriculture Organization of the United Nations (FAO).
- Loi, A., Esposti, R., Gentile, M., Bruni, M., Saguatti, A., Berisio, S., Cuppari, L., & Aragrande, M. (2016). Policy evaluation of tariff rate quotas. Report mandated by the Swiss Federal Office of Agriculture, 2016.
- Luckstead, J., Tsiboe, F., & Nalley, L. L. (2019). Estimating the economic incentives necessary for eliminating child labor in Ghanaian cocoa production. *PLoS one*, 14(6), e0217230.
- Marx, A. (2017). The public-private distinction in global governance: How relevant is it in the case of voluntary sustainability standards? *The Chinese Journal of Global Governance*, 3(1), 1–26.
- Marx, A., Maertens, M., & Swinnen, J. F. (Eds.). (2012). Private standards and global governance: Economic, legal and political perspectives. Edward Elgar Publishing.
- Mattli, W., & Büthe, T. (2003). Setting international standards: Technological rationality or primacy of power? *World Politics*, 56(1), 1–42.
- Mavroidis, P. C., & Wolfe, R. (2017). Private standards and the WTO: reclusive no more. *World Trade Review*, 16(1), 1-24.
- Mbengue, M. M. (2011). Private standards and WTO Law. *Biores*, 5(1). <https://www.ictsd.org/bridges-news/biores/news/private-standards-and-wto-law>.
- Michida, E., & Nabeshima, K. (2017). Diffusion of Private Food Standards from the European Union to Asia. In *Regulations and International Trade* (pp. 107-129). Palgrave Macmillan, Cham.
- Migros Group (2010). Our Responsibility/Sustainable Consumption/Sustainable Labels. Migros Group, retrieved from <http://m10.migros.ch/en/unsere-verantwortung-en/nachhaltiger-konsum-en/nachhaltige-labels-en>
- Negi, A. (2020). The World Trade Organization and Sustainability Standards. In: Negi A., Pérez-Pineda J., Blankenbach J. (eds) *Sustainability Standards and Global Governance*. Springer, Singapore. https://doi.org/10.1007/978-981-15-3473-7_3
- O'Connor and Company (2007). Geographical indications and TRIPs: 10 Years Later... A roadmap for EU GI holders to get protection in other WTO Members. Retrieved from https://trade.ec.europa.eu/doclib/docs/2007/june/tradoc_135088.pdf.
- Olsommer, W., & Courleux, F. (2019, May 24). Repeal of the Swiss "chocolate law": a sleight of hand between export subsidy and aid coupled with production. Retrieved from <https://www.agriculture-strategies.eu/en/2019/05/repeal-of-the-swiss-chocolate-law-a-sleight-of-hand-between-export-subsidy-and-aid-coupled-with-production/>
- Organic Monitor (2010). Future of Eco-Labels Debated at Sustainable Foods Summit. Retrieved from <http://www.npicenter.com/article/Industry/Future-of-Eco-Labels-Debated-at-Sustainable-Foods-Summit.aspx>.
- Price, A. (2022, February 18). A Cheese by Any Other Name: The Legal Challenge over “Gruyere”. Library of Congress. Retrieved from <https://blogs.loc.gov/law/2022/02/a-cheese-by-any-other-name-the-legal-challenge/>

over-

gruyere/#:~:text=On%20December%2015%2C%202021%2C%20the,and%20Trademark%20Office%20(USPTO).

- Quimba, F. M. A., & Calizo Jr, S. C. (2020). Nontariff Measures in the Philippines: A Preliminary Analysis Using Incidence Indicators.
- Santeramo, F. G., & Lamonaca, E. (2019). The effects of non-tariff measures on agri-food trade: A review and meta-analysis of empirical evidence. *Journal of Agricultural Economics*, 70(3), 595-617.
- Schuster, M., & Maertens, M. (2015). The impact of private food standards on developing countries' export performance: An analysis of asparagus firms in Peru. *World Development*, 66, 208-221.
- Skully, D. W. (2001). *Economics of Tariff-Rate Quota Administration*, US Department of Agriculture, Economic Research Service.
- SECO (2016). Bundesgesetz über die technischen Handelshemmnisse (THG). Retrieved from https://www.seco.admin.ch/seco/de/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Technische_Handelshemmnisse/bundesgesetz_technischen_handelshemmnisse_thg.html
- SECO (2018). Mutual Recognition Agreements - MRA. Retrieved from https://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Technische_Handelshemmnisse/Mutual_Recognition_Agreement_MRA0.html.
- SECO (2021). Comprehensive Economic Partnership Agreement (CEPA) between the EFTA States and Indonesia. Retrieved from https://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Freihandelsabkommen/partner_fha/partner_weltweit/indonesien.html.
- SECO (2022a). Free trade partner of Switzerland (last modification 21.06.2022). Retrieved from https://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Freihandelsabkommen/partner_fha.html.
- SECO (2022b). Vereinigtes Königreich (UK) (last modification 30.05.2022). Retrieved from https://www.seco.admin.ch/seco/de/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/brexit.html
- SGPV (2019). Beitragserhöhung für die Mengensteuerung und zur Erhaltung des Brotgetreidepreises. Information des Schweizerischer Getreideproduzentenverband (SGPV), Bern. Retrieved from http://www.sgpv.ch/wp-content/uploads/190331_Erkl%C3%A4rung-an-Produzenten_d.pdf
- Siegenthaler, P. (2017, June 8). How 'wise-guy' Switzerland is outwitting the WTO. Retrieved from https://www.swissinfo.ch/eng/chocolate-law_how-wise-guy-switzerland-is-outwitting-the-wto/43243886.
- Sinha, A. (2021). Understanding the 'crisis of the institution' in the liberal trade order at the WTO. *International Affairs*, 97(5), 1521-1540.
- Swissinfo (2020). Red Bull profits from Swiss sugar subsidies. Swissinfo, March 4, 2020. Retrieved from https://www.swissinfo.ch/eng/sweet-deal_red-bull-profits-from-swiss-sugar-subsidies/45595684.
- Swiss Federal Council (2017). Botschaft zur Aufhebung der Ausfuhrbeiträge für landwirtschaftliche Verarbeitungsprodukte. BBI 2017 4351. Retrieved from <https://www.fedlex.admin.ch/eli/fga/2017/1113/de>.
- Swiss Federal Council (2020). Abkommen zwischen der Schweizerischen Eidgenossenschaft und der Europäischen Gemeinschaft über den Handel mit landwirtschaftlichen Erzeugnissen. SR 0.916.026.81. Retrieved from <https://www.fedlex.admin.ch/eli/cc/2002/323/de>.
- Swiss Federal Council (2021a). Handelsabkommen zwischen der Schweizerischen Eidgenossenschaft und dem Vereinigten Königreich von Grossbritannien und Nordirland. SR 0.946.293.671. Retrieved from <https://www.fedlex.admin.ch/eli/cc/2020/1071/de>.
- Swiss Federal Council (2021b). Verordnung über die Einfuhr von nachhaltig produziertem Palmöl aus Indonesien zum Präferenz-Zollansatz. SR 632.324.27. Retrieved from <https://www.fedlex.admin.ch/eli/cc/2021/618/de>.

- Swiss Federal Council (2022). Ordinance on Organic Farming and the Labelling of Organically Produced Products and Foodstuffs. SR 910.18. Retrieved from https://www.fedlex.admin.ch/eli/cc/1997/2498_2498_2498/en.
- Thorstensen, V., & Vieira, A. C. (2016). Regulatory barriers to trade: TBT, SPS and sustainability standards. Sao Paulo: VT Assessoria Consultoria e Treinamento Ltda.
- Thorstensen, V., Weissinger, R., & Sun, X. (2015). Private standards—Implications for trade, development, and governance, E15 task force on regulatory systems coherence. Geneva: ICTSD and WEF.
- UNCTAD (2010). Non-tariff Measures: Evidence from Selected Developing Countries and Future Research Agenda (United Nations publication, New York and Geneva), p. 99.
- UNCTAD (2018). Switzerland: Non-tariff-measures (NTMs) applicable to biodiversity and BioTrade products. Retrieved from https://unctad.org/system/files/official-document/ditcted2018d9_en.pdf
- UNCTAD (2019). International Classification of Non-Tariff Measures. 2019 Version. Retrieved from https://unctad.org/system/files/official-document/ditctab2019d5_en.pdf.
- UNCTAD (2020a). A Practical Guide to the Economic Analysis of Non-Tariff Measures. United Nations. <https://doi.org/10.18356/b9cc8a8d-en>.
- UNCTAD (2021). Data on non-tariff measures. Retrieved from <https://unctad.org/topic/trade-analysis/non-tariff-measures/NTMs-data> (last data update 11.11.2020).
- UNFSS (2020). Scaling up Voluntary Sustainability Standards through Sustainable Public Procurement and Trade Policy. 4th Flagship Report of the United Nations Forum on Sustainability Standards (UNFSS). Retrieved from https://unfss.org/wp-content/uploads/2020/10/UNFSS-4th-Report_revised_12Oct2020.pdf.
- Vorley, B., Beekmans, A., & Homer, S. (2010). Food related voluntary sustainability standards: A strategy guide for policy makers. Paper presented at the TSPN Members Meeting. Bern, November 2010.
- Walkenhorst, P. (2004). EU exporter-concerns about non-tariff measures. Applied Economics Letters, 11(15), 939-944.
- WTO (1994a). Agreement on technical barriers to trade. https://www.wto.org/english/docs_e/legal_e/17-tbt.pdf.
- WTO (1994b). Agreement on the application of sanitary and phytosanitary measures. https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm.
- WTO (2000). Law on the protection of geographical indications of products and services. https://www.wto.org/english/thewto_e/acc_e/hrv_e/wtacchr57_leg_6.pdf.
- WTO (2005). Exploring the links between trade, standards and theWTO, 2005 (World Trade Report). [file:///C:/Users/HOME/Downloads/world_trade_report05_e\(1\).pdf](file:///C:/Users/HOME/Downloads/world_trade_report05_e(1).pdf).
- WTO (2010). The WTO Agreements Series Sanitary and Phytosanitary Measures. https://www.wto.org/english/res_e/booksp_e/agrmtseries4_sps_e.pdf
- WTO (2022a). Integrated trade intelligence portal. Retrieved from <http://i-tip.wto.org/goods/Default.aspx>.
- WTO (2022b). Trade policy review Switzerland and Liechtenstein. WT/TPR/S/425. Retrieved from <https://docsonline.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/TPR/S425.pdf&Open=True>
- WTO (2022c). Tariff Quotas: Administration methods, fill rates and notification practices 2015-2021. G/AG/W/183/Rev.2. Retrieved from <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/AG/W183R2-01.pdf&Open=True>
- WWF (2015). Bewertung der Lebensmittel-Labels 2015. Hintergrundbericht. <https://www.wwf.ch/sites/default/files/doc-2017-10/2015-11-Hintergrundbericht-Lebensmittellabel-de.pdf>.