Standardization, GATT and the Fresh Food System

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This paper examines Fresh Fruit and Vegetable Industry struggles to define "quality and consistency." It uses a theory of "standardization"--the dual process of adopting product "standards" and developing "standardized" commodities--as a way to conceptualize these struggles. And it analyzes the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) negotiations in this context, arguing that the adoption of GATT proposals to make Codex Alimentarius responsible for setting industry standards, extend patent protection to agricultural technologies, reduce agricultural tariffs and subsidies and eliminate restrictions on agricultural exports will affect industry efforts to raise standards and standardize commodity production.

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Introduction

The fresh produce industry is obsessed with the terms "quality" and "consistency." In trade publications like *eurofruit* and *Produce Business*, growers, transporters, wholesalers and retailers all insist that they are committed to both quality and consistency. California Walnut Commission spokesman Mark Dorman argues that California Walnuts "are *consistently* of much higher *quality* [emphasis added]" (eurofruit, 1990c:93) than Chinese and Indian varieties. And Bill Heintz, president of the Dole Fresh Vegetable Company, insists, "[Dole is] regarded as the highest quality shipper in the industry. We're certainly the most *consistent* shipper of *quality* [emphasis added]" (Drum, 1990:42).

But the obsession with "consistent quality" and with "Total Quality Management"--the organizational strategies and management tactics designed to achieve this--is a bit odd because "quality" and "consistency" refer to two rather different objectives. The "quality" of a food refers to what distinguishes it from other foods, while "consistency" refers to a food's similarity to other foods, its uniformity. So logically, when people use the terms together, they are talking about foods that possess two different attributes: food that is superior to others, but also equal to others.

This terminological confusion is compounded by the fact that there is little agreement among people who profess a commitment to "consistent quality" as to what quality

really means or how it might be measured. As *Produce Business* columnist Max Brunk observes,

> Everyone talks about quality, [but] when asked, few people can come up with a consistent answer. Two traders speaking on the telephone can be talking about quality with little or no understanding because each trader has a different point of reference in mind. This is the cause of much conflict in marketing. Quality, standing alone, without appropriate descriptive adjectives, has little meaning (Brunk, 1989:69).

The pervasive concern with quality and consistency, and the inability to define either, indicates that participants in the emerging fresh food system are wrestling with a serious problem. Their obsession reflects a deeper economic and political struggle over the definition of standards for a newly emerging, global fresh food industry, which is comprised of an affiliated network of commodity chains. This fight is expressed in different forms. On the micro level, the participants debate whether to adopt a uniform pallet size, how kiwi fruit should be graded, whether various packaging is "recyclable" according to new German legislation, and what the term "organic" means (eurofruit, 1990b:4; 1991b:2; 1990a:4). At the macro level, participants debate the impact of the current round of General Agreement on Tariffs and Trade (GATT) negotiations, ask which regulatory institution will be responsible for setting standards affecting their business and wonder whether the standards it adopts will be high or low.

Standardization Theory

For the most part, struggles to define "quality" are really attempts to raise "standards" that can be used as a common point of reference. Once standards are adopted and the quality of products defined, trade can more easily occur between buyers and sellers who do not meet face to face. And struggles to produce goods "consistently" are really efforts to "standardize" commodity production and produce uniform goods. These two simultaneous processes--the effort to raise widely recognized "standards" and develop "standardized" commodities--can be described as the process of "standardization."

This language--of standards, standardized and standardization--is a useful way to conceptualize these processes because it shows how efforts to achieve both quality and consistency are linked. It is an appropriate terminology because "standard" is a complicated word that conveys different meanings, depending on how it is used.

As a noun, "standard" refers to something that "stands above." A standard typically serves as an arbiter of values, either moral or physical, a sort of yardstick against which other values are measured. As Raymond Williams has noted,

> The word [is]...associated with a concept of a graded progress within a hierarchy.... It is often impossible, in these uses, to disagree with the assertion of standards without appearing to disagree with the very idea of quality.[1]

Indeed, the adoption of a standard implicitly creates a hierarchical system of values, with the standard at the apex and other values arranged below.

By contrast, in its verb form, "standardize" has a very different meaning. It is associated with the process of making different things the same, making them uniform. Typically the verb describes processes that "make, cause, adjust or adopt to fit a standard" (American Heritage Dictionary, 1985:1188). Standardizing is often associated with the "leveling" process in industry. The verb "standardize" usually has a derogatory meaning, referring to a "lowering" of values.

Taken together, the term "standardization" can refer to a system in which values are simultaneously raised vertically and extended horizontally. Applied in this fashion, standardization can be used to understand developments that are common to capitalist development. Indeed, Karl Marx argued that standardization was a generic feature of commodity relations. In *Capital* (Marx, 1967:47-70), he argued that commodity relations depended on the development of a system in which values are simultaneously standardized and integrated into a hierarchy of values according to a standard of money. In this system, commodities set in a "hierarchical" relation by the standard of money become "equally" exchangeable, one with another, though at different prices. So from this perspective, standardization permits the development of a system of commodity relations that could be described as an "egalitarian hierarchy."

In more practical terms, this kind of system is functional to the expansion and development of commodity relations and of trade. As William Cronon (1991) shows in *Nature's Metropolis,* the adoption by Chicago grain traders of standard wheat grades and the shift from storing and transporting grain in individual sacks to railroad cars and silos, which created a uniform, standardized commodity, made possible trade between buyers and sellers who did not meet face to face. These developments contributed to the rise of commodity markets and the Chicago Mercantile Exchange. As Cronon says,

> The shift from sack to elevator enabled grain traders to come indoors, to a market called 'Change where sheets of paper would stand as surrogates for grain bought and sold in millions upon millions of bushels. The shift to standard grades meant that those sheets of paper represented not real physical grain but abstract conventions whose homogeneity was the condition that made them interchangeable. Interchangeability in turn made it possible to sell grain not only over great distances of space but over extended periods of time as well, for the futures market depended for its existence on the standardized fictions that enabled traders to buy and sell grain they had never seen because it did not yet exist. Those who dealt in futures extended the abstraction of Chicago's market by dealing not in grain, not even in elevator receipts, but in the prices that future elevator receipts would bring when they finally came into being several weeks or months later (Cronon, 1991:145-146).

The development of sophisticated and extensive commodity relations for grain depended on its standardization, the extension of uniform values and their insertion into a hierarchy of values. This is a common feature of capitalist development. Most newly emerging industries go through a period when there are competing standards and multiple definitions of quality. The manufacturers of High-Definition Television, for example, are currently going through just such a period. Eventually, common standards and mutually agreed upon definitions of quality are adopted. So, for example, after some years of competition between Beta and VHS formats, the video player industry adopted VHS as its standard, which helped "rationalize" the market for producers, distributors and consumers alike.

Industry Standards, Standardized Foods

In the same way, producers in the expanding fresh food industry seek to develop a functional system of global commodity relations. And these relations require common, mutually agreed upon standards. In Max Brunk's terms, producers need to adopt a common point of reference, so they know what "quality" means, so that trade can occur between buyers and sellers who do not meet face to face, product in hand.

Generally, producers agree on the need to adopt standards. As Ed Del Beccaro, vice president of marketing for Castle and Cooke Foods, said, "There is no question that the government must set and enforce uniform standards of identity--grading, sizing, condition--for the protection of all levels of our industry and the consuming public" (Campbell, 1981:1,3).

But there is considerable disagreement as to what particular standards should be adopted. It matters, for example, whether the industry adopts a New Zealand kiwi as the standard against which kiwi from other parts of the world are measured or whether Red Ruby grapefruit from Florida is adopted as the industry standard. The adoption of one over another has considerable consequences for different producers and for the character of the commodity chain as a whole. This is why participants fight so fiercely over standards and attempt to raise their own standards as the standard for all. They are struggling, in a sense, to create a system of commodity production and exchange that is advantageous to themselves.

It is often said by the winners of these contests that the standards adopted had some intrinsic merit and deserved to be chosen because they were "superior" in some fashion to other would-be standards. Today, for example, the adoption of the Greenwich Meridian as the global standard for time and space is treated as a "rational" way to fix longitude, assign time zones and set watches around the world. But there is no intrinsic reason why Greenwich should have been selected as the Prime Meridian and not one of the 30 other places used as a prime meridian prior to its adoption in 1884 (Schaeffer, 1982:69-90). The adoption of the dollar as the standard currency, English as the standard language, VHS as the standard video format, CD as the standard audio format and the metric system as the standard for scientific measurement are all products of intense intramural economic competition and political struggle. The struggle is fierce precisely because it is not about "intrinsic" qualities, but about profit, market share, premium prices, consumer loyalty, and monopoly rents. And because much of the struggle over standards is intramural and conducted off-stage--not in the marketplace but in private or obscure public standard-setting institutions--it is not the object of scholarly research or public scrutiny.

Participants in the emerging fresh food industry attempt to raise and adopt common standards while simultaneously struggling to develop standardized food products that consistently occupy a place in the emerging hierarchy. Although producers talk about producing food that meets the highest quality standard, they understand that once the standard is set, consistent production at lower levels of quality may also be profitable, sometimes more profitable. As Brunk discovered when he examined annual sales of Florida celery, "wholesale prices were indirectly related to grades....The highest grades received the lowest sales dollars, and the lowest grades received the most sales dollars," which was a consequence of the fact that "when growing conditions are most favorable, supplies [of high grades] are most plentiful...[while] produce [of low grades] bring high prices [in the off season]" (Brunk, 1989:69).

So long as standards are known, producers can find a "niche," even if their product is inferior to the standard. So, for example, Bananic International recently introduced a new banana brand: "Tropy." They admit that Tropy doesn't meet high Central American banana standards, so Director Pedro Baltodano says, "Tropy for us means consistent arrivals" (curofruit, 1991a:26; 1989a:19). The delivery of a uniform product, even of a lower quality, can be a profitable activity (indeed, it can be more profitable than high quality production,

as Brunk indicates). What matters for producers is not the level of quality so much as the consistency or uniformity of the product at a given level.

Producers seek to develop standardized products because they have discovered that it is easier to make uniform products with a given technology and relations of production than variegated ones. This was the insight of Frederick Taylor, Henry Ford and Alfred Sloan (Friedland, 1991b:3). Producers understand that the key to successful sales and profits is the ability to deliver goods that consistently meet consumer expectations. Because uniformity is functional to high volume production and repeat sales, producers generally prefer to produce standardized products rather than produce uneven-quality or tailor-made goods.

The problem, of course, is that the production of fresh food is very difficult to standardize, particularly when it is grown in different parts of the world, where the soils, climate and biology vary enormously. And it is hard to produce standardized goods for markets where consumers have different "tastes" or sets of expectations.[2] Indeed, one of the important features of the fresh food industry is that it uses fairly "flexible" systems of production on the farm--using large-scale or small-scale farmers, in different geographical settings, and employing a wide variety of contractual arrangements and labor processes--to produce commodities consistently. It should be noted however that systems of transport, distribution and exchange are not nearly so flexible, but conform instead to the more uniform system of production characteristic of other branches of industry.

The rewards for consistent production are considerable. And some producers are better able to standardize production than others. By virtue of their ability to develop flexible systems of production, some transnational firms--Chiquita International, Dole, Polly Peck, Geest, Pandol Brothers and Albert Fisher--have been better able to standardize the production of some kinds of food than other firms (Friedland, 1991b:3). The attempt to standardize production involves not only a struggle within firms, what may be called an organizational struggle, but also an intramural struggle between firms large and small. And like the struggle over standards, struggles to standardize products have important consequences for the shape and character of fresh food commodity chains that emerge around the world.

Of course there is a tension between attempts to raise standards and produce standardized goods. It is usually easier to produce low-quality goods consistently than it is to produce high-quality goods. To deal with this problem, firms try to use trademark identification and name brands to insist that standardized products are also of the highest quality. But this is a difficult task, requiring an enormous marketing effort. In addition, the attempt to do both is complicated by the fact that there are so many kinds and varieties of food products involved.

The Impact of GATT

Industry struggles will be greatly affected by agreements reached in the Uruguay Round of negotiations to revise GATT. The sweeping revisions of GATT now being proposed for the first time address issues related to agricultural production and trade. Because GATT proposals would grant standard-setting authority to Codex Alimentarius, extend patent protection to agricultural technologies, reduce agricultural subsidies and tariff barriers, and eliminate restrictions on food exports, they would have a profound impact on the fresh food industry's attempts to adopt standards and standardize commodity production. This in turn will shape the character and location of fresh

food commodity chains around the world (Schaeffer, 1992:27-31).

Although the GATT revisions are enormously complicated and have not yet been adopted formally by the 100-plus member countries (this could come in 1993 if the agricultural subsidy disputes that delayed negotiations during 1991-92 are resolved), there are four proposals that would directly affect standard setting and standardizing in the fresh food industry.

First, the revised GATT would assign responsibility for setting "phytosanitary" standards for agricultural products to Codex Alimentarius, an obscure UN. agency based in Rome (Ritchie, 1990: 214-220). And because GATT dispute-arbitration mechanisms could be used by member countries to compel compliance with Codex standards, this proposal would make Codex the site where industry struggles over many standards would be contested. Although GATT proposals would facilitate the adoption of common standards for the fresh food industry--what GATT negotiators describe as a process of "harmonization"--it would shift standard-setting authority away from the variety of public and private institutions to Codex. As Jean Marc Luc, director of the agricultural division of GATT, has argued, "The current developments underway within the Uruguay Round of Multilateral Trade Negotiations offer the exciting prospect of the Codex standards being used as the basis for the harmonization of national regulations as a long-term objective under GATT" (Ritchie, 1990:219-220).

Currently, voters in California use the referendum process to set standards for agricultural producers and retailers, and government agencies in many countries issue regulatory standards. And private firms, such as Nutriclean, which is based in Oakland, California, conduct field inspections, sample products and certify for retailers and consumers that produce from individual farms meets pesticide-free standards (Proval, 1991:219-220).

Indeed, it is the proliferation of various public and private standard-setting institutions that motivated US trade officials to propose that GATT consolidate standard-making authority in Codex. Many of them believe that US standards are too high. As the California World Trade Commission has argued, "In its zeal to lead the world in regulating chemical use, California may become so out of step with the competition that it will put its $17 billion agriculture industry out of business" (Ritchie, 1990:219). And former US Agriculture Secretary Clayton Yeutter has said, "If the rest of the world can agree on what the standard ought to be on a given product, maybe the United States or European Community will have to admit that they are wrong when the standards differ" (Ritchie, 1990:217).

This consolidation may at first appear "rational," a fair way to harmonize differing standards based on their intrinsic, "scientific" merit. But the shift to Codex will likely shift standard-setting authority away from institutions whose work is now subject to public scrutiny to an autonomous agency that permits little public participation in its decision making and sets standards at a fairly low common denominator. Because official government delegations to Codex are typically composed of scientists representing government regulatory agencies and transnational firms with an interest in low-level standards, the standards set by Codex tend to be low. For example, Codex standards permit imported bananas to contain 50 times the amount of DDT residue now permitted by the United States.[3] (DDT use is banned in the United States, but producers elsewhere continue to apply it to agricultural crops.)

Although most fresh food producers want to consolidate standard-setting authority, they differ over who should assume this

responsibility and whether the standards adopted should be high or low. Small-scale producers of organic fresh foods, for instance, would like the US Congress to assume responsibility for defining the meaning of the term "organic," and producer associations, some retailers and consumer and environmental groups want fairly strict definitions set.[4] Large-scale, inorganic fresh food producers, by contrast, want Codex to assume this responsibility and have it set fairly low standards, which will be easier for them to meet. The outcome of struggles to assign standard-setting authority and determine the levels at which standards are set will greatly affect different fresh food producers' ability to compete.

Second, GATT proposals would extend and protect patent and trademark monopolies around the world.[5] For the fresh food industry, this would provide protection for hybrid seeds and pesticides, the products of biological engineering, and food technologies--everything from food irradiation to invisible bruise technology--that are essential to the "cool chain."[6]

The extension of patent and trademark protection would facilitate the development of standards because many standards possess some technological characteristic that makes them "superior" to others.[7] But while technology contributes to the raising of certain standards, not all standards are based on superior technology. Indeed, standards embodying inferior technology often win out.

For the fresh food industry, the extension of patent and trademark protection to their technologies and products puts them in a better position to advance their own standards. If they can develop technologies that can improve quality--such as a machine that can detect deep bruises that are invisible to the naked eye, or food irradiation technologies that improve shelf life--they are in a better position to insist that products embodying these qualities be adopted as industry standards. And if they own or control patents to these technologies, they would then be able to reap monopoly rents and royalties from other producers who need to use these technologies to meet new standards.

The end of subsidies for agricultural research (see below) may also shift research and development from land grant universities in the United States to private industry or create a division of labor between "basic science," which would be conducted at public institutions, and "applied" or patentable science, which would be undertaken by private firms. So, for example, Superior Farming of Bakersfield, California, which currently owns "the largest privately funded research and development programme for stonefruit and table grapes in the world," recently announced that it had set up "a new research advisory committee comprised of some of the world's leading scientists and researchers for plant biology and breeding" (eurofruit, 1989c:4). This sort of positioning may indicate a real shift away from public to private research, which GATT proposals may further assist.

Third, GATT proposals would phase out, reduce or eliminate government subsidies for agriculture and reduce tariffs and duties on imported food products. For the fresh food industry, these measures would facilitate the development and extension of standardized commodity production, which would help producers make goods more "consistently."

Subsidies and tariffs affect consistency because they affect the location of commodity production. Subsidies and tariffs encourage producers to locate in places with high subsidies and/or high tariffs, typically in Japan, the United States and the European Community. Although producers reap some economic benefits from this, it hurts their ability to produce foods consistently. When the sites for commodity production are geographically

limited, it is difficult to produce a wide range of products throughout the year or to switch to alternative sites in the event of poor weather and other variable factors of production. By eliminating subsidies and tariffs, it becomes easier to develop commodity production in different areas of the world and to create flexible systems of production that can, in a pinch, maintain constant levels of production.

The fresh food industry has already developed fairly extensive commodity chains around the world, which can produce some standardized foods consistently. But the GATT proposals would accelerate this development and make it possible for the industry to develop commodity chains for a larger number of food products.

Part of the problem for producers is that intensive agriculture, particularly a heavy reliance on pesticides, may force producers to relocate regularly, either because pesticide resistance results in declining yields or because pesticide residues begin to exceed import standards. Either development would make it difficult to maintain consistent production.

The extension of commodity chains that produce foods for export to core markets has important consequences for people where export production is located. As many others have noted, an increase in land devoted to export production in many Third World countries typically results in the displacement of small-scale farmers and subsistence production, which contributes to hunger among residual rural and displaced urban populations. Export-oriented agriculture is promoted by First and Third World governments alike as a way to promote exports to earn cash for non-agricultural industrial development. They argue that by specializing in export agriculture, Third World farmers will earn what they need to buy cheap grains imported from producers in the core. This might work if Third World producers received high prices for their export produce and if rural and urban populations could obtain the kind of work that would pay them enough to purchase "low cost" grains. Because these conditions do not often occur, many go hungry.

And fourth, GATT proposals would reduce or eliminate governments' ability to restrict the export of food products or natural resources, even in the event of domestic food shortages. These proposals, like previous ones, would enable fresh food producers to develop more extensive commodity chains because producers would be assured that their goods would not be expropriated or nationalized in the event of a local food crisis. Because producers need consistent production, they want to minimize possible disruptions before making large-scale investments in commodity chains that reach across numerous political jurisdictions. For producers, the elimination of export restrictions greatly reduces possible disruptions of food-based commodity chains. These measures guarantee food security for consumers who can pay for food. But this security is purchased by making food supplies insecure for those with less buying power.

Conclusions

In sum, GATT proposals would affect the fresh food industry's efforts to raise standards and standardize production and shape the character and geography of emerging commodity chains. These developments have important consequences for producers and consumers around the world. For example, a fresh food system constructed around "organic" standards and standardized production by small-scale producers would look very different from one built around "inorganic" standards and standardized production by large-scale producers and transnational corporations.

Although GATT proposals are being advanced by the latter, who would likely benefit from them, the battle over the meaning of quality and consistency is not yet over. Small-scale organic farmers, some retailers and consumers are attempting to give quality and consistency a different meaning, and they are making headway, if only because the standards of "quality" being advanced by inorganic producers have failed conspicuously in recent years. The public reaction to the use of Alar on apples indicates that the standardization process is the object of considerable struggle and that the outcome is not pre-determined.

Notes

1. Williams notes, "It is very significant that the popular use of standards--laudatory--is at odds with the popular use of standardization--derogatory" (Williams, 1977:248-249).

2. As Gerhard Prosi, director of the Institute of Economic Policies at the University of Kiel, said, "In this world where differences occur naturally between each and every nation, uniformity is impossible to achieve" (eurofruit, 1989d:5).

3. See a comparison of Codex and US standards for pesticide residues in various fresh foods in Ritchie, 1990:216.

4. Legislation introduced in the US Congress would set minimum national standards for produce grown using "organic" methods and have the Department of Agriculture certify farms meeting these standards. Supporters of the measure debate whether the standards should be high or low. "If standards are too loose," argues Robert Bildreg, president of RLB Food Distributors, "it would destroy the market [because] anyone could sell produce as organic" (Brumback, 1990:43).

There is also considerable debate over whether states would be permitted to adopt stricter standards. "I would strongly encourage federal preemption," says Jim Wiers, a member of the Vegetable Association's organics task force. "The pressure for that will come from retailers. Retailers need to have a consistent supply, and to do that, they need products from several states. So they need consistency" (Brumback, 1990:43).

5. US negotiators want to increase the duration of patents from 17 years to 50 years and guarantee them worldwide. The United States is keen on this issue because multinational firms want to clamp down on the "piracy" of trademarks and patents by other countries. In 1991, for example, the film industry announced a unilateral boycott of the Soviet Union because Hollywood films and videotapes were regularly pirated there. And US Trade Representative Carla Hills recently imposed sanctions on China for its infringement on US trademarks (Bradsher, 1991:C1).

6. According to Bruce Upchurch, an agricultural engineer with the US Department of Agriculture, scientists have developed "a special camera filter and a specific computer programme [that can be used] to identify bruises that can't be seen with a naked eye (eurofruit, 1989b:2).
The "cool chain" is a system of technology and expertise used to maintain food under chilled conditions from the point of production to the point of consumption (Friedland, 1991a:2-3).

7. For example, the "chronometer," a timepiece accurate over long periods of time at sea, made it possible for the British navy to map the world using the Greenwich Meridian. Without the technological means to make accurate charts, the British attempt to raise Greenwich as the global standard of time and space would have been stillborn.

British chronometers were not the technological equal of French-built chronometers, which were markedly superior to British watches. But superior French technology did not help the French raise a Paris meridian as the global standard because the French navy, bottled up in French ports by the British fleet during the Napoleonic Wars, was unable to chart the world's oceans with French watches in hand.

"What did Britain gain by securing the means to determine longitude and establishing the meridian at Greenwich? For mariners the means to determine longitude at sea promised safer navigation, cut losses to the shipping industry and reduced insurance costs, which, with the growth of Lloyds, enabled Britain to secure a larger share of policy-writing worldwide. The development of the marine chronometer stimulated the watchmaking industry

in England. The investment in the research necessary for the development of standardized time and space aided scientific inquiry, particularly in the fields of math and astronomy, and lent prestige and monetary support to the scientific community. Improvements in cartography made possible accurate sea charts but also more detailed land surveys, which were essential to the subsequent development of railroads and industry. Important military advantages accrued to this standardization. For example, the Admiralty's survey of the eastern seaboard of North America was completed just in time to aid the British naval forces during the American War of Independence....The ascension of the Greenwich standard of time and space reflected the gains Britain had made in producing a system of time and space on a global scale, which in turn reflected on Britain's ability to dominate other fields throughout the world" (Schaeffer, 1982:81,82).

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RESUMEN

La Estandarización, el Gatt y el Sistema de Alimentos Frescos

Este trabajo examina las luchas en la rama de las frutas y vegetales frescos (FVF) por definir «la calidad y la consistencia». Utiliza la teoría de «estandarización» --el proceso dual de adoptar productos «estándar» y el desarrollo de mercancías «estandarizadas»-- como una forma de conceptualizar estas luchas. A la vez, dentro de este contexto, este trabajo analiza las negociaciones de la Ronda de Uruguay y el Tratado General sobre Tarifas y Comercio (GATT), argumentando que la adopción de las propuestas del GATT de elaborar un Código Alimentario responsable del establecimiento de estándares industriales, extender la protección de patentes a las tecnologías agrícolas, reducir las tarifas y los subsidios agrícolas y eliminar las restricciones a las exportaciones agrícolas afectará los esfuerzos industriales para elevar los estándares y uniformar la producción de mercancías.

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