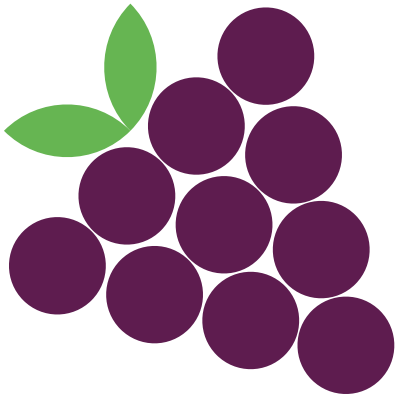
A THRIVING COMMUNITY:

A FUTURE VISION FOR THE SCHOOL NUTRITION ECOSYSTEM

SCHOOL NUTRITION ASSOCIATION



INTRODUCTION

In 2025, the world of school nutrition is defined by resilience in the face of shortfalls, complexity, and instability. Demand for school meals remains high—approximately 29.6 million U.S. students are fed every school day. But reimbursements from federal and state agencies typically fall short of school districts' expenditures: 67 percent of nutrition directors say those reimbursements are insufficient.[1] The current political and economic headwinds threaten to widen that gap. As inflation and other economic forces such as tariffs raise the cost of goods and labor, the school nutrition supply chain risks becoming unsustainable. Initiatives from federal agencies targeting school-meal programs—for example, the elimination of the Local Food for Schools program, proposed cuts to SNAP and Medicaid impacting the Community Eligibility Provision and state level school meal investments, and the reduced funding for grants such as Farm to School and kitchen equipment—add further risks.

The School Nutrition Association (SNA) recognizes the urgent need to address these challenges. Moreover, it recognizes that this is not a problem that SNA and its member community can resolve on its own. Substantive change in how school meals are produced, distributed, and paid for—and who advocates for those changes—will require efforts from a variety of stakeholders, from school administrators to food producers and farmers, to legislators, to the community surrounding schools. Not to mention the students that all these groups want to better serve.

Acknowledging this, on May 20-21, 2025, SNA hosted its first Future of the Industry Summit in the Washington, D.C. area, convening more than 100 professionals from the school nutrition ecosystem to discuss the field's current challenges and collectively brainstorm solutions. This white paper spotlights many of the ideas participants identified as the most compelling and immediately actionable to address the industry's most pressing challenges. Scores of ideas were shared during the meeting, and many of them serve as important avenues for future research.

Amid the diversity of discussions, participants coalesced around one overarching theme: the need to develop a school nutrition system that is built to last, resilient enough to respond to short-term economic change and shifting political sands and thrive regardless of those disruptions. Within that broad mandate, participants developed a set of ideas designed to change the school nutrition paradigm, promote common-sense advocacy to support more flexibility in the system, develop tools that streamline the supply chain and save money for all stakeholders, and build big-picture awareness around school nutrition that moves beyond past actions and outdated stigmas of school meals as low quality and unhealthy.

Details around those themes, and the proposed solutions, are the focus of this white paper. We welcome your feedback and suggestions at exec@schoolnutrition.org.

1 School Nutrition Association, *SY 2024/25 School Nutrition Trends Report*, https://schoolnutrition.org/resource/position-paper-2025-trends-report/.

HOW WERE THESE IDEAS DEVELOPED?

During the Summit, participants collectively attended four "lightning talks" by industry experts covering four areas:

REGULATION AND ADVOCACY

REVENUE AND INVESTMENT

COST AND RESOURCE EFFICIENCY

TECHNOLOGY AND INNOVATION

These talks set the table for the ensuing discussions. Participants broke up into separate groups to discuss each of those challenges through the lens of seven stakeholder groups: operators, administrators, government, suppliers, students and families, allies, and community. (See "Who Are the School Nutrition Stakeholders?" below.) They were asked:

HOW WILL EACH STAKEHOLDER BE IMPACTED BY THIS ISSUE?

WHAT SUPPORTS, RESOURCES, OR CONDITIONS WILL THIS STAKEHOLDER NEED TO ADAPT AND SUCCEED?

IN WHAT WAYS COULD THIS STAKEHOLDER INFLUENCE POSITIVE OUTCOMES?

During Day 1 of the Summit, participants documented their responses to those questions on Post-it notes placed on meeting-room walls to prompt discussion and better visualize trends. They were then encouraged to discuss common themes that emerged from those notes to be explored further.

All ideas shared during the first day were documented and, with the assistance of generative AI tools, collated into themed executive summaries that were then shared with participants on Day 2. On Day 2, participants used those summaries to further discuss the themes, then voted on the solution areas that they agreed were the most important. From there, groups identified specific actionable ideas that were then presented on each of the four subject areas at the end of the Summit.

WHO ARE THE SCHOOL NUTRITION STAKEHOLDERS?

During the Summit, participants used these definitions for the stakeholder groups:

OPERATORS:
School nutrition professionals directly responsible for planning, preparing, serving, and overseeing school meal programs.

ADMINISTRATORS:
School and district leaders who set policies, allocate resources, and make decisions around school nutrition programs.

GOVERNMENT:
Employees at the federal, state, and local levels who develop, fund, and enforce laws, regulations, and guidelines that govern school nutrition programs.

SUPPLIERS:
Companies and vendors that manufacture, process, or distribute food, beverages, equipment, technology, or services to schools.

STUDENTS AND FAMILIES:
Children and adolescents who participate in school meal programs, as well as their parents, guardians, and caregivers. This includes those who purchase meals and those who receive them for free or at a reduced price.

ALLIES:
Organizations, coalitions, and nonprofits that support the goal of providing healthy, equitable school meals.

COMMUNITY:
The broader network of individuals and groups affected by or invested in school nutrition: teachers, researchers, local farmers, health professionals, community organizations, taxpayers, and more.

FIRST STEPS: WHERE DOES THE SCHOOL NUTRITION COMMUNITY NEED TO WORK TOGETHER?

Summit participants all understand that school nutrition in America is currently administered through a patchwork quilt of federal programs (National School Lunch Program, School Breakfast Program, etc.), state agencies, and school-district administrators, each of which are populated by people with different goals, approaches, and technological savvy. Some suppliers serve schools as the majority of their business; for others, they represent only a fraction of their revenue. Operators handle purchasing with imperfect knowledge about future needs and future costs. Moreover, the interpretation of regulations governing administration of school meals can vary from state to state and municipality to municipality.

Despite those changes, participants identified areas of promise. These in themselves aren't solutions, instead they are important areas of exploration, helped to direct the vision recommendations in the following section, and can help inform further discussion:

Shifting to Entrepreneurship. If schools can sell spirit wear and host fundraisers, why can't they operate sustainable catering or vending services? Rather than relying on federal funding for school nutrition, schools should do more to treat their kitchens and cafeterias as revenue drivers, reaching beyond the school community. Participants noted that different countries operate under different models—such as Canada, which until this year was the sole G7 country without a national school nutrition program.[2] (Until the adoption of the program, it had been supported through "charities, school boards, governments, churches and corporations."[3]) Though there are imperfections in each system, there may be lessons to learn from how countries like Sweden, Brazil, and India handle costs, meal standards, and governance.

Addressing (Mis)Perceptions. School meals are poorly understood by taxpayers and other citizens who have limited engagement with school nutrition programs, and they often vote based on outdated ideas about those programs' quality and who participates in them. Even those active within school communities, such as parents, legislators, and the students themselves, often perceive school meals as existing separately from the educational ecosystem. But what if school meals were considered as essential as public safety, and funded accordingly? Treating school meals as infrastructure rather than ancillary to a school's work makes meals part of the curriculum, integrates nutrition into education, and helps persuade stakeholders that they should be properly funded. Models for this exist: In Japan, school lunch (*kyushoku*) is integrated into curricula, in which students are taught about farming, nutrition, sustainability, and general health practices alongside receiving the meal itself. Even in summer of 2025 the White House released a report acknowledging and praising other countries' efforts to integrate food and nutrition into education.[4]

2 Zhong A, Yin L, O'Sullivan B, Ruetz AT. Historical lessons for Canada's emerging national school food policy: an opportunity to improve child health. *Health Promot Chronic Dis Prev Can*. 2023 Sep;43(9):421-425.

3 Stechyson, Natalie. "What we know---and don't---about the national school food program," CBC News, April 3, 2024. https://www.cbc.ca/news/canada/national-food-program-schools-explain-1.7160901

4 *Make Our Children Healthy Again: Assessment,* 2025. https://www.whitehouse.gov/wp-content/uploads/2025/05/MAHA-Report-The-White-House.pdf

Lack of understanding at the state and federal legislative levels is a problem which has to be solved through unified action. Teachers, parents, administrators, and other stakeholders need to have the depth of knowledge to speak full-throatedly, in one voice, about the current system to clarify it to the public on a daily basis, as well as during election season.

Fix the Model. As their profit margins shrink, suppliers and operators risk moving toward lower-cost and lower-quality meals that won't meet students' nutritional needs or expectations. They also risk reviving the stigmatization that has historically been attached to school meals. Manufacturers in the supply chain need financial motivation to remain in it. School administrators and operators need to be better equipped to understand, at a glance, the trends that affect the costs of preparing school meals, and those that impact hiring. More uniform standards, improvements in attracting and retaining employees, and better forecasting can all help ease the burden.

Data Is King. Change is difficult without a clear picture of where things stand. Improved data collection and AI-driven analysis has the power to transform the industry from multiple perspectives, including but not limited to compliance, advocacy, funding, and storytelling. But that data needs to be clear, robust, accurate, and standardized. Successful data-driven programs address privacy, redundancy, and trust issues.

Just Try It. Experimentation is essential for new programs to work, and participants agreed that it was important for the industry to find partners, including those outside of the school nutrition world, to develop pilot programs around entrepreneurial solutions. Moreover, administrators and operators might welcome the opportunity to pursue new models and outside revenue sources—renting out school kitchens to local groups and events, for instance—but are constrained by school district policies and restrictions on how state and federal funds can be used. Operators need greater flexibility in how funds are used, and more opportunities to pilot programs in low-risk ways.

Training and Upskilling. New tools mean little if kitchen workers don't make full use of them. A new oven arrangement designed for five purposes offers little gain in efficiency if a worker is trained to use it for only one; commodity forecasting tools are useless if operators do not know how to use them. Training staff on new skill sets will be critical for any implemented changes to have a significant positive effect.

FUTURE VISION ONE: COMMON DATA, SHARED GOALS

New analytical tools are more available and affordable than ever, but are weakly implemented within the school nutrition ecosystem. Some of this is a function of a lack of tools directly serving the school nutrition industry; some of it is a function of a lack of time and training among the individuals who need to use those tools. But as off-the-shelf solutions proliferate and financial pressures intensify, it is time for the ecosystem to directly engage in more robust data gathering and analysis in cases such as menu planning and ways to control costs, like recipe standardization, and development of cost-effective and high-engagement menu options. Below are some of the ideas surfaced by Summit participants.

AI-DRIVEN FOOD WASTE MANAGEMENT

Participants developed a proposal to reduce food waste through the use of cameras and AI to track and analyze food discarded by students. Food-waste data has the potential to better inform menus at the school level, but it can also be shared with agencies like the USDA and the National Institutes of Health (NIH) to glean broader public health insights. Though the idea of tracking individual student health data raised several privacy concerns, participants advocated for the importance of collecting high-level (non-identifying) data to improve decision-making.

The group emphasized the potential benefits of real-time data for operators and the significant value of comprehensive consumption data for public health research. Models for this exist: For instance, earlier this year the Lufthansa Group announced that it had developed a "tray tracker" that it uses to scan in-flight meals to determine their popularity; that, combined with an AI-driven algorithm to track meal consumptions based on flight time, destination, and other metrics, are being used by the airline to reduce waste and save costs[5]. Another example can be found in restaurants such as Winnow or Orbisk, where they are using cameras and image recognition to log discarded food items to control food costs.

NUTRITION DATA IN THE CLOUD

Participants proposed a national cloud-based system of commonly available data such as production records, food data, procurement, forecasting, inventory, attendance, and more. This system could benefit the industry by standardizing data and providing analysis, particularly for the benefit of operators, to inform decisions using historical, current, and future data. Some of this data already exists via the Global Data Synchronization Network (GDSN), which standardizes and collects information in the foodservice industry. Since 2021, vendors participating in the USDA Foods program have been required to submit nutrition, allergen, and ingredient information into the GDSN.[6]

5 Lufthansa Group, "Lufthansa Group uses AI to reduce food waste," April 28, 2025. https://newsroom.lufthansagroup.com/en/lufthansa-group-uses-artificial-intelligence-to-reduce-food-waste/

6 "GS1 Global Data Synchronization Network (GDSN): New Requirement for USDA Foods Vendors." https://www.ams.usda.gov/selling-food/gs1-gdsn-overview

The cloud system could improve supply-chain efficiency by providing real-time usage data, allowing school and district staff to adjust food orders based on actual usage. (For instance, a dashboard might track labor, meals/labor hour, a la carte sales, participation trends by menu, and more.) It could also address collaborative compliance with state agencies, allowing for continuous monitoring and reducing the need for last-minute data collection. Manufacturers would be motivated to support such an initiative because it could provide them with valuable real-time information from schools.

DATA-DRIVEN SUPPLY CHAIN REMODEL

Participants proposed modernizing and improving the supply chain for school nutrition programs to ensure consistent, affordable, and effective delivery of food, supplies and equipment. As one participant put it: "If we have a good supply chain, school nutrition programs are going to get what they want, when they want it, and the amount they want at an affordable price." Accomplishing that requires including operators, suppliers, and the community in the development of a reliable system. Participants highlighted the necessity of specificity in communication with the USDA and the need to define best practices with data. They also recommended looking at commercial versions of this model, as demonstrated by retailers such as Amazon and Walmart.

HOW DOES WALMART'S SUPPLY CHAIN SYSTEM WORK?

Walmart's success is, largely, a function of its ability to exploit economies of scale as one of the world's largest retailers. But it also uses methods that can be echoed by the school nutrition community:

In terms of **supply,** the company pursues direct relationships with manufacturers, cutting out intermediaries. It also focuses on long-term contracts with those suppliers to secure favorable pricing.

In terms of **inventory management,** it focuses on real-time data regarding inventory, sales, and customer preferences. "Just in time" resupplying allows it to keep inventory as low as possible while preventing waste.

In terms of **technology,** it is using AI and machine learning to assist with forecasting and cost. It also uses radio frequency identification (RFID) tools to track and monitor multiple elements in the supply chain. In 2022, Walmart began requiring suppliers to use RFID tagging, which allows for more efficient and accurate inventory tracking.

FURTHER IDEAS:

AI-powered nutritional meal profiles that address students' cultural backgrounds, allergies, performance goals, and more, ensuring that students are receiving the meals they need while respecting their preferences. These profiles can be adjusted based on availability, season, and climate impacts.

Dynamic food-ecosystem monitoring that brings data not just to the school cafeteria but to the surrounding community. Cafeteria compost can be used for community farms, while surplus food can support community organizations.

A "virtual sandbox" for food-service design: Using virtual models, nutrition teams can simulate kitchen layouts, menu changes, and staffing and create projections before making use of them in real time.

Gamified nutrition literacy, where students learn about ingredients, sustainability, and budgeting through interactive experiences. This kind of approach needn't be limited to students: Suppliers, government, and community members can all benefit from opportunities to better understand the school nutrition ecosystem.

FUTURE VISION TWO: VISIBILITY FROM THE STATEHOUSE TO THE LIVING ROOM

School meals are at once highly regulated, under-funded, and poorly understood by legislators, which creates a series of regulatory hurdles for every participant in the supply chain, from food production to procurement to meal prep—and too often does a disservice to the children at the end of it. The Department of Health and Human Services is pressing for healthier school meals through Make American Healthy Again (MAHA) initiatives, and operators are in support of healthy meals while being concerned about the cost of healthier food and the additional staff and equipment required to support scratch cooking and reduce the use of pre-packaged and processed foods. Meanwhile, with states enacting new laws to eliminate food dyes and processed foods, the definition of "compliance" can mean different things in different places, even while they're accessing the same funding source. Further, this patchwork of regulations around the country is not economically practical for manufacturers in a foodservice segment that is considered low margin.

The complaints about these issues are familiar to those working in the field. Just as these challenges emerged in part due to inconsistent approaches across the country, solutions will require an effort by stakeholders to be on the same page. Below are recommendations that emerged from the Summit discussions:

REIMAGINING COMMODITY USE

Summit participants exhorted the school nutrition community to prioritize advocacy goals that champion flexibility in how commodities are distributed and used. Participants highlighted Michigan's Universal School Meals program, which uses commodity letters of credit (CLOCs) to allow for spending on local producers, for instance. Participants proposed starting with low-stakes experiments to test new models, such as allocating 25 percent of commodities for alternative spending, to learn and refine the approach.

REFRAME SCHOOL MEALS AS EDUCATION

Mealtimes in schools are typically treated as minutes outside of the curriculum clock. This means that the time students spend eating (like lunch and breakfast) does **not** count toward the required instructional hours or curriculum time mandated by education authorities. Integrating school meals into the school day and treating them as curriculum hours heightens the importance of school meals and creates a path toward a healthier population. Participants propose integrating nutrition into the curriculum and tying it to what is served in the cafeteria. In doing so, schools can better ensure access to nutrition during the school day. They suggest that nutrition should be a critical part of public education, impacting lifelong healthy habits, and administrators could be engaged advocates for such a change.

BUILD AWARENESS AT SCALE

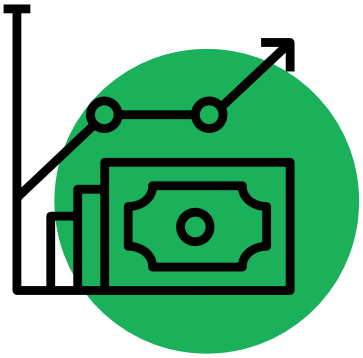
The Netflix era has transformed documentaries from a niche movie genre to one that draws millions of viewers to important social issues. Podcasts featuring subject matter experts can profoundly influence the news cycle, and late-night comedians are increasingly focused on socio-political challenges. (A 2024 episode of *Last Week Tonight* on school meals drew 3.8 million viewers on YouTube alone.) A professionally produced, high-profile documentary series on school nutrition would serve to build awareness of the challenges and opportunities and serve as a means of contact to higher-profile funders to move entrepreneurial projects beyond the pilot phase. Government too, could more clearly see the stakes involved in their funding decisions. Community support for any change is critical, and such a narrative could educate and motivate public discussion around change.

FURTHER IDEAS:

Create a **task force of stakeholders to review existing regulations** and develop holistic recommendations around more flexible approaches. What changes can be made at the federal level? What is applicable at the state and local levels?

Legislators will listen to children in ways they won't listen to even the best-prepared advocacy professional. Participants recommended developing a program to **have youth participate in advocacy** and organizing training, to equip them to better engage in school-food politics.

The patchwork of state and local interpretation of regulations needs a holistic fix. To address inconsistencies around compliance, **map and review the current regulatory landscape/authority** at the federal and state levels. Collaboratively determine what regulations are maintained at the federal level and state level, and which need to be changed. Establish uniform interpretation of standards country-wide and create consistency around purchasing standards.



FUTURE VISION THREE: REVENUE REINVENTED

The current financial model for school nutrition is broken. Federal reimbursement has fallen short of program costs, and that funding faces threats. Costs for food, supplies, equipment, and labor are increasing, and variables like unpaid meal debt add further inequities and stigmatization to the system. This breakdown threatens to diminish the quality of food delivered to students, places strains on school districts' general funds, and negatively affects education and health in the long run.

SNA remains committed to advocacy for school nutrition reimbursement that adequately meets student needs—too many children remain underserved under the current system, placing strain on all stakeholders in the ecosystem.[7] But that effort needs to work in tandem with new initiatives around revenue generation. Summit participants emphasized the importance of rethinking the school nutrition revenue generation model and supply chain more broadly while looking for district or kitchen-level efficiencies more specifically. Operators can develop new service models, suppliers can streamline offerings, administrators can better promote the importance of school nutrition, and community needs can be better shared and understood, leading to better solutions.

AN INCUBATOR FOR ALTERNATIVE REVENUE STREAMS

To escape the broken school-nutrition revenue model, Summit participants proposed that an organizer, sponsor, or investor could develop an incubator to pilot streamlined and effective alternative-revenue resources for schools. Such incubators would model a program that includes best practices, guidelines for collaboration with outside businesses and nonprofits, and means for securing funding through sponsorships, grants, and other forms of support. School nutrition operators and experts from state agencies could collaborate to execute on these projects and share what they have learned so the entire system can benefit.

A REAL-WORLD ANALYSIS OF NATIONAL WORKFORCE SHORTAGES

Multiple states, including California[8] and Wisconsin[9], have researched their school-nutrition workforces. Participants recommended a more holistic meta-analysis of the findings from these surveys to identify common gaps—and, by extension, common solutions. The information gleaned from this meta-analysis should inform a pilot program that would give administrators and operators practical guidance on what works when it comes to building awareness of school nutrition jobs, recruiting members for its workforce, and retaining them.

7 More information about that work is available at https://schoolnutrition.org/advocacy/.

8 Food Insight Group, "Gaps in California's School Nutrition Services Staffing," 2024. https://assets.nextgenpolicy.org/687b4a85-gapsincasnsstaffing2024full.pdf

9 Gaddis, Jennifer, "Hungry for Good Jobs: The State of the School Nutrition Workforce in Wisconsin," Healthy School Meals for All, 2024. https://cdn.ymaws.com/www.sna-wi.org/resource/resmgr/legislative_documents/hungry_for_good_jobs__the_st.pdf

FURTHER IDEAS:

A child nutrition marketplace connecting operators and suppliers. This "one-stop shop" would include food, equipment, and technology. It would connect to the National Procurement System, allowing users to select or bid on specific products and services. Suppliers would benefit from seeing proposed customers, and its simplicity and scope would conceivably inspire new vendors to enter the marketplace.

Aside from federal dollars and short-term grants, schools need **a sustainable third option for funding.** Regional consortia, pooled reserves, and shared financing tools used across districts were all proposed by participants.

Because different stakeholders look at their businesses differently, they fail to see others' pain points and cost considerations. Operators perceive school meals largely through a lens of federal reimbursement, while suppliers run their businesses with more of a focus on commodity costs and labor expenses; neither are alert to the others' pain points in ways that might inspire changes. A program to **educate operators, suppliers, and administrators on the finances of school meal programs—costs, reimbursement gaps, and other constraints**—would better equip them to detect inefficiencies in their work and develop collaborative solutions.

One Summit participant described the current system as less of a "supply chain" and more of an assortment of broken links. **A formal assessment of processes, rules, and best practices for child nutrition programs** is needed and should utilize journey mapping[1] or Kaizen[2] methods, comparing approaches across districts, states, and programs for the betterment of the entire system.

Create a **supplier information network** where suppliers have better access to real-time data about school needs and what suppliers can provide, with regulatory compliance tools built in.

School Food Authorities should be empowered to **use federal child nutrition funds to support infrastructure** with a cost-benefit analysis. Government regulations currently prohibit child nutrition funds from being used in this way, but legislators might be persuaded that funds can be used more flexibly if they ultimately benefit school meals.

1 "What is Customer Journey Mapping?" https://journeymap.com/what-is-customer-journey-mapping.

2 Environmental Protection Agency, "Lean thinking and methods–Kaizen," updated August 20, 2024. https://www.epa.gov/sustainability/lean-thinking-and-methods-kaizen

CONCLUSION

The school nutrition system is inherently complex, which makes it easy for stakeholders to lament their frustrations and lapse into doom-and-gloom thinking. The Summit—and the insights included in this paper—are intended to serve as a counterweight. Rather than point to shortcomings, it highlights solutions. Instead of assigning blame, it encourages everyone to engage in collaborative and collective work on solutions. One major theme that emerged from the Summit is the importance of getting stakeholders on the same page to identify redundancies, find efficiencies, develop alternative revenue streams, and persuade legislators and regulators to center school meals as an essential service worth funding.

Summit participants recognized this event as an opening of doors. More collaboration will be essential to develop holistic solutions. Data-driven efforts that look for cost efficiencies are one part of the solution, but so are ways to drive revenue beyond the current reimbursement model.

Data, visibility, and revenue will all be key to a thriving school nutrition ecosystem in the coming decades. Layered over those efforts is the importance of speaking in one voice across stakeholder groups. In a system where individual stakeholders have particular opinions about how their portion of the school nutrition ecosystem should operate, and where misinformation often prevails, the school nutrition community should present a unified message about what it needs. It should communicate that it is committed to being as data-driven as any other food-service system, that more regulatory flexibility will result in more affordable and healthier outcomes, and that all participants in the system are willing to work toward those goals.

Want to learn more and be part of creating a thriving school nutrition ecosystem?

Visit www.schoolnutrition.org

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