
Discussion Paper on Domestic Food Security

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Introduction

The Problem

The United States produces an abundant variety of nutritious foods at increasingly affordable prices and makes them widely available in the marketplace. American consumers spend a lower budget share on food than their counterparts around the world. Investments in research and educational programs have increased food production, processing, marketing, and trade to a point where the United States produces food surpluses and exports foods all over the world. The Nation's commitment to regulation and inspection of food ensures that safe food products reach consumers. An extensive network of food assistance programs dedicates nearly \$40 billion annually to combat food insecurity and helps nearly one out of every six Americans.

Unlike many places in the world, undernutrition is not a major problem in the United States. Using the Food and Agriculture Organization's (FAO) hunger map methodology, about 2.75 percent of the U.S. population is estimated to have inadequate caloric intake. A very low prevalence of growth retardation,

an indicator of undernutrition in children, confirms that undernutrition is not a problem for the vast majority of American children. Growth retardation is more prevalent among children in low-income families—3 percent more than expected in a healthy population. Protein-energy malnutrition is rare in the United States, about 400 deaths a year, usually cases of child abuse and neglect or debilitating illness.

The vast majority of households in America are food secure. Food security means that all people at all times have access to enough food for an active, healthy life. At a minimum, food security includes the ready availability of nutritionally adequate and safe foods and the assured ability to acquire acceptable foods in socially acceptable ways (for example, without resorting to use of emergency food supplies, scavenging, stealing, and other coping strategies).

Despite this generally positive situation, the United States confronts nutritional challenges on several fronts. As diseases of nutritional deficiencies have diminished, they have been replaced by diseases that are related to dietary excesses and imbalances. These diseases, including heart disease, some cancers, stroke, and diabetes, now rank among the leading causes of illness and death in the United States, touch the lives of most Americans, and generate substantial health care costs.

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In addition, food insecurity and hunger still exist. Food insecurity is the converse of food security as defined above; hunger is defined as the uneasy or painful sensation caused by a lack of food. According to the new Food Security Supplement to the Census Bureau's Current Population Survey, about 12 percent of the approximately 100 million U.S. households experienced food insecurity to some degree in 1995. Of these, about 4 percent included adults with reduced food intake and hunger as a result of financial constraints. In just under 1 percent of households experiencing some level of hunger, children as well as adults experienced reduced food intake and hunger.

In war-torn countries or famine or drought situations, manifestations of hunger and undernutrition are obvious and extreme. In the United States, food insecurity is characterized by less obvious signs and family adaptations. For example, faced with limited resources for food and other necessities, many Americans turn to governmental food assistance programs. Others cope by skipping meals, by substituting varied, nutritious foods with less expensive alternatives, or by seeking emergency food from soup kitchens or food pantries.

Limited resources and access to food are prime factors leading to food insecurity. Low incomes combined with unaffordable living expenses such as housing, heating, or medical expenses, certain disabilities, or poor health can result in increased risk of food insecurity and hunger. Access to food in socially acceptable ways can be constrained by lack of transportation, living in remote locations, and lack of accessible food stores. Some vulnerable populations, such as the elderly, may feel stigmatized by accepting food assistance.

Poverty is a determinant and consequence of impaired nutritional and health status. Health disparities between poor people and those with higher incomes are almost universal for all dimensions of health whether it be undernutrition or diet-related chronic disease. For example, risk of heart disease is more than 25 percent higher for persons with low income than for the overall population. The incidence of cancer and the prevalence of hypertension and obesity vary inversely with socioeconomic status. Iron deficiency is more than twice as common in children in low-income families as among children in the total population.

The magnitude of these effects becomes more apparent when one considers that 13.8 percent of Americans lived at or below the poverty line in 1995. Fully 20 percent of U.S. children live in households with cash incomes below the poverty line; this is the third highest among developed nations. In addition to children, other population segments are also vulnerable to food insecurity, including the elderly, pregnant and lactating women, migrant workers, individuals with some types of illnesses or disabilities, the homeless, American Indians, and Alaska Natives. Each group has distinct needs and issues associated with obtaining adequate, sustained food intake.

In summary, food security incorporates the traditional idea of ensuring adequate food availability and nutrition safety nets. It also includes the need to create social and economic conditions that empower individuals to gain access to food by earning the income to purchase food, by participating in community food security activities, and where practical, by producing food. Effective and efficient use of food, including gleaning

and food recovery, is also an essential component of food security today.

Addressing all of these and other food security issues, globally and in the United States, requires comprehensive measures that integrate ongoing assistance and commitments with new initiatives in the following areas:

- **Economic Security**
- **Food Access**
- **Awareness of Hunger and Food Insecurity**
- **Nutrition and Food Security Education**
- **Sustainable Food Systems and Environment**
- **Food and Water Safety**
- **Monitoring Food Security and Nutritional Status**
- **Research and Evaluation**

The Response

The November 1996 World Food Summit in Rome focused the attention of the world on chronic problems of hunger and undernutrition, as well as the potential for increasingly acute food shortages in Africa and Asia. The September 1997 National Summit on Food Gleaning and Recovery focused the attention of the Nation on the intolerable existence of hunger and food insecurity in America.

In recognition of these renewed concerns about global and domestic food security, the U.S. Government has affirmed its commitment, along with other nations, to address food security problems internationally and in this country. The Government has adopted the World Food Summit goal of reducing undernutrition by half by the year 2015, recognizing that this goal should be

reached well before. In addition, the United States has embarked on a consensus process to establish a target for achieving domestic food security as part of the process for setting health objectives for the Nation for the next decade. Healthy People 2010 objectives will be released in early 2000.

The United States has begun a concerted effort to develop a long-range action plan to follow up on its commitments. The Interagency Working Group that was formed to prepare for the World Food Summit has been extended to manage this activity. Two new subgroups have been established to work on the international and domestic portions of the action plan.

After 6 months of public consultations, the U.S. Government initiated an extensive assessment of the various policies, programs, and other mechanisms that it brings to bear on food security both at home and abroad. The basic frame of reference for this assessment was the outline of issues and possible actions that were developed in the national consultations.

To facilitate further public input to the action plan, the Interagency Working Group has decided to release for public comment two parallel discussion papers. The first on international topics was

released October 16, 1997. This domestic paper represents initial thoughts on steps that could be taken to address a variety of concerns about food security in the United States that were raised in the course of national consultations held earlier in 1997. It focuses on ways to address food security, reflecting our new capacity to measure objectively and track its prevalence.

Economic Security

Issue

Economic security is a prerequisite to attaining food security. Economic security depends on the level and predictability of household income as well as savings, cash, and other wealth available from family, government, or other sources. The economic security of individuals and families is strongly influenced by several factors: Secure, adequately paying employment; stable, two-parent families; affordable household expenses for food, shelter, energy, transportation, education or training, and medical and child care; and government and private sector programs that provide a safety net in times of financial emergency.

In 1995, 13.8 percent of Americans, including 20.8 percent of all children, lived at or below the Federal poverty line. By the time they reach 18 years of age, 36 percent of children have spent a portion of their lives in poverty. It is likely that most of these children will have experienced periods of food insecurity or hunger. Poor children are most at risk because sound growth and healthy development, keys to becoming independent, secure, and productive adults, are crucial during early, formative years.

Enhancing the economic security of adults, particularly on the heels of welfare reform, is of prime importance and involves innovative intergovernmental and nongovernmental action to help the low income, underemployed, and unemployed to find and keep jobs in our sophisticated labor market. Creative approaches that build effective partnerships, incentives, and special transitional supports for those who need them are necessary elements of the new system. Perhaps the most critical long-term investment the Nation can make to

assure productivity and economic security is in primary, secondary, and post-secondary and adult education.

Priority Actions

- **Assist Low-income Individuals to Find Jobs**
- **Strengthen Supports to Help Individuals Keep Jobs**
- **Emphasize the Creation and Expansion of Jobs**
- **Build a Solid Foundation for Learning and Enhance Access to Education**
- **Focus on Vulnerable Subgroups, Especially Children**
- **Conduct Research to Improve Household and Community Economic Security**

Discussion

In August 1996, the 104th Congress enacted, and the President signed into law, the Personal Responsibility and Work Opportunity Reconciliation Act. Through the Temporary Assistance for Needy Families Block Grant Program or TANF, legislation has replaced Federal payments under the Aid to Families With Dependent Children Program with block grants and given greater flexibility to States.

Under TANF, Federal welfare benefits are limited to 5 years per participant lifetime, and States may set shorter time periods. States also determine benefit levels, what services to fund, and eligibility standards provided that recipients meet compliance requirements. The new law rewards States with a performance bonus for moving welfare recipients into jobs and also includes State maintenance of effort requirements; a stronger child support enforcement program;

supports for families moving from welfare to work, including increased overall funding for child care and guaranteed medical coverage; reduced duration of receipt of food stamp benefits by able-bodied adults without dependents and bans for receipt of food stamps by legal immigrants; and tightened eligibility requirements for disabled children under the Supplemental Security Income program. Finally, States may make legal immigrants ineligible for Federal TANF benefits, and new arrivals are banned from these benefits for 5 years. Some categories of legal immigrants, such as veterans and those who have worked in the United States for at least 10 years, are exempt from the bans.

As they implement TANF, States and communities are now experimenting and forming valuable partnerships with the private sector and nongovernmental organizations (NGOs). Simultaneously, Federal agencies are challenged to focus activities and resources, coordinate diverse programs to attain priority goals, and monitor and evaluate welfare reform measures and other actions for possible modeling or replication or for larger initiatives by States and communities. Of immediate importance is the need to identify and implement policies and programs that lead to job creation and expansion such as empowerment zones and enterprise communities. Promoting greater dialogue at all levels, especially in and across State lines, will enhance these efforts. With waivers and wider latitude, States can be viewed as “laboratories” where the factors that have been most influential in causing shifts in employment, earnings, welfare dependency, educational persistence, and other variables of interest can be analyzed to determine how all Americans can lead more economically secure lives.

The following actions expand on the six priority actions, which reflect the vital link between economic and food security.

1. Assist Low-income Individuals to Find Jobs

- Use innovative communication strategies to enhance the awareness of former and current welfare recipients and low-skilled individuals about community opportunities for jobs and basic and specialized skills training. Promote community networks and information-sharing strategies to disseminate updated local announcements and material.
- Publicly recognize and support private and public sector employers who provide job training, skills development, enhanced job opportunities, and other ways to improve self-sufficiency while simultaneously ensuring families an adequate income.
- Encourage States to use Employment and Training (E&T) matching funds to move individuals into jobs that effectively lead to self-reliance.

2. Strengthen Supports to Help Individuals Keep Jobs

- Support the development and provision of adequate, convenient, and affordable social services, including child and health care, public transportation, and training for employees. Promote the advantages of on-site child care facilities with employers. Foster collaboration, cost-sharing, and information dissemination among small businesses for such work support programs.

- Encourage employers to adopt flexible work arrangements and to comply with laws, such as the Family Medical Leave Act, which help employees to balance work and family responsibilities.
- Mentor workers to enhance their success in entry-level jobs and eventual promotion to better jobs. Encourage use of the skills and time of the community's elderly population as a source of volunteer training, mentoring, and support services.
- Continue to provide entry-level workers in low-paying jobs with special transitional supports for longer time periods and at augmented rates, if necessary, to meet fundamental daily requirements until they are able to support themselves.
- Promote skill development to low-skilled and underemployed workers as they move from welfare to jobs with increasingly greater responsibility.
- Expand educational programs, such as the food bank/USDA Cooperative Extension System, which build on the Expanded Food and Nutrition Education Program to include job training, parenting, and other skills.

3. Emphasize the Creation and Expansion of Jobs

- Implement the Presidential directive to Federal agencies to hire welfare recipients as an example for business leaders.

- Enhance incentives and innovative approaches to increase private sector participation in enabling individuals to move from welfare to work. For example, innovative activities are occurring throughout the country where nonprofit food banks and housing construction programs offer on-the-job-training and skill development needed in the private sector with funding provided by the corporate sector.
- Create partnerships and forums for identifying, sharing, and expanding successful welfare-to-work programs. Identify successful local programs as replicable models for larger initiatives.
- Encourage the private sector and NGOs in the community to create jobs and training programs for former and current welfare recipients and underskilled and/or underemployed individuals. As illustration, large and small companies are focusing innovative welfare-to-work initiatives in 12 cities with high levels of poverty. Focusing on mentoring and other support services, a coalition of civic groups, the Welfare to Work Coalition to Sustain Success, provides mentoring and other support services to help former welfare recipients remain in the workforce and succeed.
- Identify "space-specific" economic development activities for those living in remote areas.

4. Build a Solid Foundation for Learning and Enhance Access to Education

- Support family, community, and other nongovernmental efforts to promote children's early development and education to ensure that all children enter school ready to learn.

- Create business, community, and other alliances to meet the diverse needs of the student population and provide necessary support to students at risk of not achieving the knowledge and skills required to meet State standards for successful high school completion and ultimately for improved job opportunities, including those with limited English proficiency, with disabilities, in migrant families, and in high-poverty schools.
- Urge local businesses and community groups to create and share innovative ways to increase student participation in State school-to-work systems that enhance student achievement and improve technical skills.
- Mobilize business, nongovernmental, and civic groups to provide leadership in ensuring that schools are safe, disciplined, and drug-free. Encourage family and community involvement in State development and implementation of challenging standards and assessments for all students in core academic subjects.
- Develop communication strategies among business and community groups and schools to enhance access to postsecondary education as well as to available financial resources and support services to promote continued educational opportunities and ultimate career success.
- Motivate current full-time and part-time employees with entry-level positions to upgrade their skills and prepare for a more flexible and highly trained workforce through evening courses at community colleges, continuing education, and other lifelong learning opportunities.

5. Focus on Vulnerable Subgroups, Especially Children

- Encourage the use of case management by States, communities, or employers to address the cluster of difficulties faced by many vulnerable groups in achieving economic security. Successful case management helps individuals identify and locate the combination of training, education, child care, medical access, transportation, and housing that permits struggling individuals to enter and succeed in the job market.
- Customize assistance on a continuing basis for those individuals disabled from work because of health problems, including substance abuse, mental or emotional difficulties, and AIDS.
- Encourage State and community interventions to help those at particular risk for food insecurity, for example, legal immigrants affected by recent changes in the welfare and food assistance programs.
- Urge States to ensure that child support award levels are sufficient to meet the needs of the child(ren) and to implement uniform interstate child support laws.
- Launch strategies in States and communities to prevent teen pregnancies.
- Encourage States and communities to provide affordable, safe child care on a continuing basis to support low-income women who are moving from welfare to work.

6. Conduct Research to Improve Household and Community Economic Security (see Research and Evaluation Section)

Food Access

Issue

Recently released USDA estimates from the Food Security Supplement to the Current Population Survey indicate that about 12 percent of the 100 million American households experienced some degree of food insecurity in 1995, with about 4 percent also experiencing reduced food intake and hunger as a result of financial constraints. Of these, just under 1 percent included children with reduced food intake and hunger. Recent changes in eligibility for food stamps are expected to increase the number of households experiencing food insecurity.

The U.S. Government spends about \$40 billion on food assistance and is committed to improving further the access of all Americans, especially vulnerable populations, to safe, nutritious food. In addition, the U.S. Government works with States and communities to address community food system needs and to channel often wasted sources of food to those who need it most and is seeking to achieve a 33-percent annual increase in food recovery by the year 2000. Equally important is providing education along with food assistance on topics such as choosing nutritious diets, wisely spending food dollars, and gardening where practical.

Priority Actions

- **Assure an Adequate Food Security Safety Net and Enhance Food Access of Vulnerable Populations**
- **Encourage States and Local Community Groups to Address Hunger, Food Security, and Community Food System Needs and to Coordinate Their Efforts**
- **Increase Gleaning and Food Recovery**
- **Develop and Implement a Government Anti-hunger and Nutrition Initiative to Focus, Coordinate, and Enhance Government Efforts to Reduce Hunger and Expand Food Security**

Discussion

The Federal Government has promoted access to food and consumer education for more than 60 years, primarily through the U.S. Department of Agriculture's programs, including the Food Stamp Program, the Child Nutrition Programs, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Expanded Food and Nutrition Education Program (EFNEP), and through other commodity and nutrition education programs. In 1997, USDA's Fund For Rural America provided competitive grants to promote gleaning and food recovery.

Other Federal agencies also provide food assistance and support food security. The U.S. Department of the Interior's (DOI) Bureau of Indian Affairs offers emergency assistance for food, shelter, and clothing to those American Indians who do not qualify for other food assistance, and its Office of Insular Affairs provides funding to the territories for wide-ranging programs, including supplemental food programs in the Marshall Islands. In the U.S. Department of Health and Human Services (HHS), the Elderly Nutrition Program provides grants to State agencies on aging and to eligible Indian Tribal Organizations to support congregate and home-delivered nutrition services to older Americans. The national Head Start program provides comprehensive developmental services, including nutrition, to low-income, preschool children. The Department of Veterans Affairs (VA) provides community health care, housing, and support services including nutritional support and social rehabilitation with work therapy and on-the-job training to homeless veterans.

In addition to Federal, State, and local government agencies, nonprofit groups, religious organizations, and individual volunteers each provide critical links in the domestic food safety net. Groups such as the Christian Relief Service, Second Harvest and its network of food banks, Share our Strength, the Famine Relief Fund, and Feed My People, among others, provide food assistance beyond what government offers to low-income Americans and deepen the network of individuals dedicated to food security in the United States. Non-governmental institutions play a particularly vital role in food recovery. Second Harvest, for example, distributed 811 million pounds of food worth over \$1 billion in 1995.

A number of factors need to be considered in determining how best to increase access to food by specific vulnerable groups:

- Complex challenges face the homeless, who may sleep in the streets or in emergency shelters that provide three or fewer daily meals. Soup kitchens are a primary source of meals for these persons, yet negotiating this system to obtain adequate food can be a formidable and time-consuming task. Also, while homeless people are often eligible for food stamps, they are extremely limited in their ability to store and prepare food, and very few restaurants are authorized to accept food stamps.
- New restrictions on eligibility for food stamps for legal immigrants and the time limit on receipt of food stamps by nonworking, able-bodied adults without dependents limit food access.

- Gaps exist in the current service system for poor children. For example, while the free and reduced-price lunches are widely available during school days through the National School Lunch Program (NSLP), the School Breakfast Program is available in just 70 percent of the NSLP schools, and the Summer Food Service Program reaches only 14 percent of the students who receive free and reduced-price lunches through the NSLP.
- Food insecurity factors link with aging, including health problems, limited ability to purchase, prepare, and physically ingest nutritious food, and poverty. It is anticipated that the risk of food insecurity may increase as the number of all elderly doubles, and the number of those over 85 years old quadruples, by the year 2050.
- Obstacles to food access are faced by some American Indians and Alaska Natives, such as living in rural and remote locations, high unemployment, and high poverty rates. For example, the 1995 unemployment rate for the whole U.S. population was 5.6 percent, compared with 35 percent among American Indians living on and adjacent to reservations. Only 29 percent of those Indians employed in these areas earned \$9,048 or more annually.
- U.S. migrant and seasonal farm workers may have impaired access to adequate food. Low incomes and difficult working conditions limit their ability to purchase and prepare adequate meals. Migrant labor camps are in rural areas and workers often lack transportation, which may limit their ability to purchase varied, reasonably priced foods.

The activities outlined in the rest of this section illustrate ways each priority action could be implemented. They incorporate concerns related to vulnerable populations.

1. Assure an Adequate Food Security Safety Net and Enhance Food Access of Vulnerable Populations

- Fund food assistance programs at a level to enable response to changing economic conditions and meet the needs of general and special-need population groups.
- Continue to improve the management and fiscal integrity of food assistance programs and work with the anti-hunger community to identify needs and opportunities to better utilize Federal programs within communities.
- Improve program participation by developing a low-cost communications network using modern technologies as well as traditional avenues to link food-insecure individuals with food assistance services.
- Improve access of the eligible elderly to food and nutrition programs.
- Review food assistance programs and identify ways to improve the current system to overcome the barriers to food access faced by American Indians and Alaska Natives.
- Improve accessibility of WIC services to the Community and Migrant Health Service and Indian Health Service facilities.

2. Encourage States and Local Community Groups to Address Hunger, Food Security, and Community Food System Needs and to Coordinate Their Efforts

- Involve and encourage local anti-hunger groups and multisectoral food security councils to help build community capacity to address food insecurity by assessing common needs and combining resources and approaches.
- Foster public-private and inter-governmental partnerships and project recognition awards to sustain community programs. For example, resources that increase food access should be encouraged and could include the rerouting of public transportation to serve major supermarkets.
- Expand home food delivery to the needy through partnerships between private food providers and local food assistance and volunteer service organizations. Similarly, consider providing home food delivery programs to serve poor children meals outside of school hours and during the summer.
- Strengthen State initiatives that target food assistance and access. Encourage States to use effectively Federal matching funds for administration of the Food Stamp Program and to continue supporting nutrition education and food and life skills efforts.

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- Explore possible avenues for the coordination of public and private nutrition services, including co-location. For example, co-locating child care services and WIC clinics in subsidized housing could improve accessibility of these services to residents.
 - Create mobile WIC farmers' markets to promote and expand access to fresh produce by low-income women, infants, and children in areas not currently served by fixed location farmers' markets.
 - Explore formation of innovative partnerships, such as with hunters' groups and meat processors to donate game meat for food banks, ensuring that food safety issues are addressed.

3. Increase Gleaning and Food Recovery

- Implement the national goal of a 33-percent annual increase in food recovery by the year 2000. This would provide an additional 500 million pounds of food a year, enough food to support meals for 450,000 Americans each day.
- Conduct annual summits on food recovery and gleaning to build partnerships, to assess progress and address barriers, and to share innovative and successful methods of food recovery.
- Continue to incorporate food recovery activities into programs of all Federal agencies, private businesses, and NGOs.

- Strengthen partnerships among farmers, NGOs, community service organizations, and other private organizations to promote field gleaning and food recovery while ensuring food safety.
- Encourage community-based food recovery efforts by providing technical assistance, facilitating public/private partnerships, and by bringing national attention to such efforts.
- Identify innovative ways to transport donated food to those in need.
- Publicize applicable U.S. tax code deductions and the Good Samaritan Act to encourage food donation.

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- Increase public awareness of food waste and the importance of gleaning year-round. Continue to promote the USDA's food gleaning hotline (1-800-GLEAN-IT) and the *Citizen's Guide to Food Recovery*.
 - Promote volunteer gleaning and food recovery activities. Encourage public and private school systems to adopt community service as a graduation requirement, highlighting local gleaning and food recovery projects as options for meeting this requirement.

4. Develop and Implement an Anti-hunger and Nutrition Initiative to Focus, Coordinate, and Enhance Government Efforts to Reduce Hunger and Expand Food Security

- Identify ways to achieve the initiative's four goals: To reduce the incidence of hunger in the United States; to strengthen the nutrition assistance safety net and eliminate the stigma of participating in nutrition assistance programs; to increase awareness and raise the national consciousness of the level of hunger and food insecurity nationwide; and to reinforce the U.S. Department of Agriculture as the lead agency in eliminating hunger.
- Actions under discussion include creation of a community hunger action kit, transforming food assistance programs into nutrition promotion/health enhancement programs, and expanding the WIC Farmers' Market Program.

Awareness of Hunger and Food Insecurity

Issue

While Americans recognize and are often moved to action by the acute and graphically depicted hunger of developing countries, we are less likely to be aware of the hunger and food insecurity experienced in our own country. This may occur because the manifestations are often less obvious or different in nature. For example, food insecurity may coexist with obesity. Long-term consequences of food insecurity and undernutrition on the growth and learning capacity of children, the health and productivity of adults, the stability of families and societies, and migration patterns worldwide are less well understood by the general public. In addition, strong economic linkages exist between world food security and the well-being of all Americans that are largely unrecognized. We need to mobilize, catalyze, and educate ourselves about hunger and food insecurity both at home and abroad to spur the actions needed to alleviate these problems.

Priority Actions

- **Promote Awareness of Domestic Food Insecurity and Hunger**
- **Improve Effective Use of the Media**
- **Highlight the Links Between Domestic and International Agriculture, Hunger, Food Security, and Poverty**
- **Promote Awareness Overseas About Food Security Issues**

The actions below are illustrative and pertain to the priority actions outlined above.

1. Promote Awareness of Domestic Food Insecurity and Hunger

- Increase visibility of national awareness activities. For example, higher level attention could be provided to existing publicity and outreach mechanisms like World Food Day, and collaborative food forums could be held.
- Conduct an ongoing, national “Food for All” campaign, as a vehicle to raise awareness about the urgency and magnitude of food insecurity, using a partnership of highly visible governmental, non-governmental, and private sector organizations and individuals.
- Convene a White House conference on hunger.
- Assist interested community groups to formulate and implement their own outreach campaigns. Recruit youth groups to participate; develop suitable activities.
- Use social marketing techniques to assess misperceptions about food insecurity in specific target audiences and to promote attitude and behavior change.
- Highlight farmers’ markets as focal points to connect farm, nutrition, and food security issues.
- Develop school/community/business awareness programs.
- Promote training and leadership opportunities for youth that emphasize education and information on health, nutrition, food safety, farm issues, and the causes of food insecurity.
- Encourage businesses to sponsor more internships and mentoring programs that offer experience, training, and education in food security issues.

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- Facilitate business partnerships with agencies providing aid and apply the creativity used in corporate marketing of products to raise awareness of hunger.

2. Improve Effective Use of the Media

- Develop and utilize effective education and accurate news services for citizens as well as legislators about the extent and causes of food insecurity and the coping behaviors of citizens who are hungry.
- Consider a “faces of hunger” approach that personalizes the issues and is based on relevant data pertinent to distinct population subgroups to enhance understanding of the different forms of hunger, food insecurity, and inappropriate nutrition and their determinants and consequences.

3. Highlight the Links Between Domestic and International Agriculture, Hunger, Food Security, and Poverty

- Inform the U.S. public, Congress, and the agricultural community of the strong economic linkages that tie U.S. agriculture and exports to agricultural and economic development overseas, including trade, genetic resources, and research.
- Increase awareness of the role of economic, human capital, and agricultural development in alleviating food insecurity and malnutrition internationally and the positive impacts on U.S. society.

- Use a coordinated, interagency effort in partnership with U.S. universities and agribusiness. Build on and more fully coordinate outreach mechanisms already under development by government agencies.

- Request U.S. Agency for International Development (USAID) country directors in countries with agricultural programs to examine more fully and address the linkages between household food security and agricultural and economic growth.

4. Promote Awareness Overseas About Food Security Issues

- Raise food security issues with developing country officials. Foster increased attention in international meetings, especially with Ministers of Finance. Request ambassadors, USAID country directors, and staff to raise the visibility of food security issues during in-country discussions with local officials.
- Jointly sponsor conferences and “awareness” events with developing countries.
- Increase media attention in developing countries. Encourage local media attention to food security issues and increase local awareness of the U.S. Government’s recent increased emphasis on food security issues.

Nutrition and Food Security Education

Issue

Nutrition promotion and consumer education can assist food insecure individuals to acquire the knowledge, attitudes, skills, and behaviors needed to stretch limited food dollars, practice healthful dietary habits, including breastfeeding, and in the process, save medical costs and improve quality of life. However, the continued degradation of public funding from an already low level illustrates the inadequate appreciation of the value of nutrition promotion and education in protecting health. For example, USDA currently invests about \$250 million in nutrition education, evaluation, and demonstration programs, compared with some \$30 billion spent by the private sector on food advertising.

Priority Actions

- **Increase Cooperation to Promote Sound Nutritional Guidance More Effectively**
- **Maximize and Maintain Nutrition Education Resources**
- **Strengthen Emphasis on Nutrition Education and Resource Management in Food Assistance Programs**
- **Continue Promotion of Breastfeeding and Raising Awareness of Benefits**
- **Integrate Food Recovery and Gleaning in Nutrition Education Programs**
- **Teach Awareness of Agriculture and Gardening**

Discussion

Healthful diets are essential for optimal growth, productivity, and well-being, and can also reduce risk for certain chronic diseases. The *Dietary Guidelines for Americans* describes dietary patterns that promote health and prevent disease and serves as the basis for Federal nutrition education activities. Breastfeeding is the optimal, as well as most economical, feeding method for infants, but mothers who are young, poor, and less educated are least likely to breastfeed. In keeping with the national commitment to increase the self-reliance of low-income Americans, it is also important to assist food insecure Americans to economically and effectively manage food budgets for the welfare of the whole family.

The following are illustrative activities to achieve effective nutrition promotion and food security education. They are organized around the six priority actions.

1. Increase Cooperation to Promote Sound Nutritional Guidance More Effectively

- Expand cooperation across all sectors to ensure that consistent messages promoting healthful dietary practices based on the *Dietary Guidelines for Americans* are conveyed to the public.
- Develop public-private partnerships that effectively promote nutrition education, building on the examples of the 5-a-Day for Better Health Program, Team Nutrition, and the Dietary Guidelines Alliance.

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- Employ social marketing techniques to reach target population groups, including those at risk for food insecurity, with relevant nutrition and lifestyle messages. Use evaluations of the impacts of nutrition interventions on dietary behavior change to target actions effectively.
 - Promote information-sharing about successful nutrition education initiatives and research and evaluation results that can spur community action.
 - Use the Internet as a communication medium through which accurate information can be quickly and easily accessed by a wide audience, both nationally and internationally.

- Explore the potential for a centralized database that summarizes planned, current, and ongoing nutrition promotion activities at the Federal, State, and local levels.
- Promote awareness of NGO-sponsored nutrition education efforts. For example, some local groups hold workshops on economical, nutritious food buying and preparation or publish weekly shopping lists that highlight foods in local supermarkets that offer the most nutritional value per dollar.

2. Maximize and Maintain Nutrition Education Resources

- Maintain vehicles designed to reach low-income families with young children and youth and help them acquire the knowledge, skills, attitudes, and behaviors necessary to achieve nutritionally sound diets. USDA's Expanded Food and Nutrition Education Program (EFNEP) and Nutrition Education and Training Program (NET) are examples of such programs.

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- Pursue cost-sharing and in-kind service collaborations, such as inter-program coalitions, private sector partnerships, alliances, and matching fund arrangements with State and local nutrition education providers to support nutrition education and promotion projects that address common target audiences and program objectives.

3. Strengthen Emphasis on Nutrition Education and Resource Management in Food Assistance Programs

- Improve and increase education on nutrition and farm/agricultural issues as components of all food assistance programs. Continue to emphasize nutrition education as a priority.
- Promote change in the culture of food assistance to make them nutrition promotion/health enhancement efforts. Work to minimize the stigma associated with food assistance.
- Integrate training on money management, meal planning, food purchasing, and food preparation into nutrition education targeted at the low-income population, as is done by USDA's Expanded Food and Nutrition Education Program (EFNEP) and nutrition education components of the Food Stamp Program.
- Promote educational programs associated with food assistance that encourage economical gardening skills and wise use of food dollars.
- Coordinate Federal, State, and local government nutrition education activities in USDA food assistance programs.
- Support continued nutrition education and training for staff working in food assistance programs.

4. Continue Promotion of Breastfeeding and Raising Awareness of Benefits

- Conduct a breastfeeding promotion campaign, using television, radio, print, and local resources to increase understanding of the health and social benefits of breastfeeding and to increase community support for breastfeeding among WIC participants.
- Develop a breastfeeding promotion kit for health care providers to help them encourage new mothers to choose to breastfeed their infants.
- Encourage the creation of breastfeeding rooms and other supportive measures for working mothers.
- Support breastfeeding classes in hospitals and prenatal care centers.

5. Integrate Food Recovery and Gleaning in Nutrition Education Programs

- Educate food handlers on the problem of food waste and methods of gleaning.
- Integrate concepts of food recovery in basic family and consumer sciences (home economics) and life skills education programs.

6. Teach Awareness of Agriculture and Gardening

- Develop education programs and curricula on the production, distribution, and consumption of food and integrate into nutrition education programs.
- Broaden perspectives of food systems by promoting community gardens and teaching the nutritional benefits of gardening, for example, in homeless shelters, housing projects, or schools.

Sustainable Food Systems and Environment

Issue

Sustainable, ecologically sound agriculture ensures the ability of farmers to continue producing food indefinitely and to contribute to sustainable food security. Achieving sustainable agriculture challenges food producers, consumers, and policymakers to consider long-term implications of farming practices, consumer demands, and the broad interactions and dynamics of food production systems, and to design supportive policies. To be sustainable, agricultural practices and policies must meet economic, ecological, and social/cultural criteria often considered in terms of farm profitability, environmental stewardship, and quality of life for farm families, rural communities, and consumers. Environmentally sensitive policies conserve soils, protect fragile lands, and protect watersheds.

Expanding agricultural productivity simultaneously with effective stewardship of natural resources to ensure the delivery of goods and environmental services at reasonable costs to current and future generations presents a major challenge in the United States and abroad. Agriculture in the United States accounts for over 50 percent of land use, 40 percent of freshwater withdrawals, and 80 percent of the consumptive use of freshwater. Agricultural production and runoff from farmland also pollutes surface- and ground-water, including coastal zones, and harms wildlife and both freshwater and marine fisheries. The need for expanded sustainable agricultural production must be balanced with the need to protect the ability of a healthy environment to sustain life and bio-diversity.

Global warming and climate change is an emerging issue of concern and calls for development of policies to mitigate adverse impacts. Other climate effects, including the El Niño and La Niña cycles of oceanic and atmospheric circulation patterns, are under scrutiny. These cyclic patterns cause a periodic reversal of conditions in the equatorial Pacific that unsettles weather patterns worldwide. Related changes in rainfall can affect crop yields, and changes in ocean currents can have impacts on fisheries.

Priority Actions

- **Develop and Implement Flexible, Environmentally Sensitive Agricultural Policies**
- **Emphasize Farmland Protection Policy and Partnerships With the States**
- **Implement Policies to Mitigate Global Warming and Climate Change**
- **Enhance Development of Local Food Systems**
- **Develop a National Program to Build Sustainable Fisheries and to Sustain Healthy Coasts**

Discussion

Environmentally sensitive agriculture keeps water clean and potable, builds soil fertility with natural nutrients, controls pests with minimal use of chemicals, minimizes and mitigates adverse impacts of nutrient over-enrichment, and maintains healthy and desirable air quality standards. It must also make full use of emerging technologies such as biotechnology that hold promise for increasing productivity. To fail to develop technologies that hold potential for increasing yields in environmentally benign ways is to choose a development path that potentially compromises fragile lands.

Credible indicators of agricultural sustainability need to be established that reliably assess trade-offs between conflicting effects identified by different markers.

Tailored to site-specific requirements, agriculture that is sustainable will over the long term satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make efficient use of non-renewable resources and on-farm/ranch resources, and integrate, where appropriate, natural biological cycles and controls. Economic viability of farm/ranch operations is required. Sustainability extends beyond the well-being of the current generation to reflect concern for the ability of future generations to meet their needs.

Though farming systems vary from region to region, common themes and practices appear among farmers trying to take more sustainable approaches. These include greater use of on-farm, local, or management resources, restrained use of toxic inputs, resource conservation and pollution abatement, effective marketing, and increased crop and landscape diversity. Non-point source pollution is a particular concern of agriculture, with increasing attention paid to impacts of nutrient run-off on watersheds and coastal waters. Because of the heterogeneity of the natural resource base, a decentralized approach to research, development, technology transfer, and policy is warranted.

Market policies must furnish appropriate incentives for sustainability. Because property rights are not clearly established for environmental services such as clean water, market prices for them may not fully reflect society's values and may

not afford economic incentives for their provision. However, with education and experience some farmers and fishers are learning that management practices that are more environmentally benign can be as profitable or more profitable than some conventional practices.

Another dimension of sustainability is the preservation or decline of U.S. family farms and farming communities; the distribution of farm size in the United States is now essentially bimodal. The number of small- and medium-size, full-time farmers—both minority and majority—has declined over the years. Policies, to contribute to retaining farm families on the land for succeeding generations, must assist them in becoming profitable enough to compete in a highly technical and capitalized agricultural market environment. Another concern is preservation of farm land. Once land is developed for urban or industrial use, it rarely returns to agriculture. Measures to address farmland protection include the Farmland Protection Policy Act of 1981 and the Farmland Protection Program in the 1996 Farm Bill.

Some development specialists believe that increasing consumer demands for organic food, specialty foods, locally grown food, and community supported agriculture (CSA) can create opportunities for small-scale agricultural producers and at the same time revitalize local economies through increased local food production and processing capacity and marketing systems. Measures to support local food systems include innovative government programs such as the Women, Infants, and Children (WIC) Farmers' Market Nutrition Program; use of the Food Stamp Program to foster community supported agriculture; policies to promote

urban agriculture, link school and institutional food service to local food sources, promote inner-city and farmers' markets; and policies to promote marketing of organic or other specialty products. Conservation policies to reduce soil

erosion and protect fragile lands such as the Conservation Reserve Program (CRP) and the Wetlands Reserve Program (WRP) can help protect environmentally sensitive lands.

Recent scientific evidence suggests that the release of certain gases, including carbon dioxide (CO₂), methane (CH₄), hydrofluorocarbons (HFCs), and perfluorinated compounds (PFCs), is increasing the “greenhouse effect” and causing the earth’s temperature to rise. Policy options to help mitigate effects of global warming and climate change should be explored and implemented when feasible. Adverse effects on food security of short-term weather variability can be tempered through increased use of climate forecasts based on the El Niño-Southern Oscillation phenomena, available up to a year in advance.

An emerging issue is nutrient over-enrichment, which can lead to excessive algal growth or blooms with adverse impacts leading in some cases to kills of fish and other marine organisms. Possibly, health risks to humans can arise from contact with the blooms, as well as from consumption of seafood contaminated with the algal micro-organisms. Each year, coastal tracts are closed to seafood harvesting because of possible human health impacts.

Another area of focus is the need for a national program to build sustainable fisheries in the United States including development of means for preventing overfishing, for addressing overfished stocks, overcapitalization, and bycatch, and for preserving fish habitats as well as for promotion of the development of environmentally sound aquaculture.

The following activities incorporate the issues discussed here and expand on the priority actions outlined above.

1. Develop and Implement Flexible, Environmentally Sensitive Agricultural Policies

- Implement programs such as the Conservation Reserve Program (CRP) and the Wetlands Reserve Program (WRP) that protect fragile lands and reduce soil erosion.
- Target programs to areas that are most cost-effective, focusing on the most environmentally sensitive land that yields the greatest environmental benefits.
- Incorporate flexibility into program designs. An example is locally led conservation that allows farm operators and other interested community members to assess their needs and select the most appropriate approach among a set of options to best maintain productivity and natural resource and environmental integrity.
- Implement USDA-wide adoption of ecosystem approaches to policy development and research prioritization as described in the *USDA Ecosystem Approaches Action Plan*. This plan addresses the need to take a sustainable approach to agriculture in harmony with the environment and covers a broad range of suggestions that will improve food security.
- Identify ways to minimize and mitigate impacts of nutrient over-enrichment in partnership with stakeholders.
- Increase collaboration among government, industry, and nonprofit entities working to strengthen the concept of sustainable agriculture in food security while encouraging coordination, policy development, and understanding.

- Develop useful and credible indicators of agricultural sustainability, including indicators and measures of environmental goods and services.

2. Emphasize Farmland Protection Policy and Partnerships with the States

- Implement and, where appropriate, expand on the requirements of the Farmland Protection Policy Act of 1981 and the Farmland Protection Program in the 1996 Farm Bill.
- Monitor and report on farmland conversion. Link with other Federal and State departments and agencies that affect farmland conversion, including the Environmental Protection Agency (EPA) and the Departments of Transportation and Housing and Urban Development, to review and amend projects, programs, and conflicting policies that can lead to farmland conversion.
- Support State and local government incentives to landowners to retain land in agriculture and keep it affordable to attract new farmers to enter farming.

3. Implement Policies to Mitigate Global Warming and Climate Change

- Encourage States to include in their action plans residential tax credits, State home oil weatherization programs, home energy rating systems, energy-efficient mortgages, new home building codes, public sector building retrofits, and other incentives to reduce greenhouse gas emissions.

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- Increase use of climate forecasts based on the El Niño-Southern Oscillation phenomena. Document the impacts of these phenomena on crop yields, water resources, and energy demands, and develop the necessary infrastructure to utilize the forecasts to mitigate these impacts.

4. Enhance Development of Local Food Systems

- Expand the Women, Infants, and Children (WIC) Farmers' Market Nutrition Program, which provides fresh fruits and vegetables to WIC clients, introduces participants to farmers' markets, and promotes small resource farms. Communicate the program's benefits.
- Promote farmers' markets as marketing opportunities for small- and medium-sized farmers, many of whom are minorities.
- Enhance food stamp use at farmers' markets and CSAs. Initiate and efficiently operate the use of electronic benefits transfer in the Food Stamp Program at farmers' markets and for CSAs across the country.
- Develop policies to support and encourage urban agriculture.
- Explore the potential to link local institutional food services (cafeterias/ restaurants) to local sources of food.
- Foster inner-city markets to help fill gaps in areas that do not have sufficient income to attract supermarkets into their area.
- Explore expansion of Enterprise Zones/Enterprise Communities rural projects that involve farmers' markets.

5. Develop a National Program to Build Sustainable Fisheries and to Sustain Healthy Coasts

- Build sustainable fisheries by maintaining healthy stocks and rebuilding overfished stocks based on assessments of the status of fishery resources, by improving capabilities to advance fishery predictions, by managing for economic growth and sustainability, by ensuring adequate compliance, by addressing bycatch and overcapitalization, and by providing research and services for fishery-dependent industries.
- Promote the development of robust and environmentally sound aquaculture.
- Sustain healthy coasts by protecting, conserving, and restoring coastal habitats and their biodiversity, by promoting clean coastal waters to sustain living marine resources and to ensure healthy seafood and economic security, and by fostering well-planned and revitalized coastal communities.
- Conduct a conference on animal waste and the public health and environmental impact arising from excessive nutrient loading in water and soils to develop policy options that balance the needs of producers, industry, environmentalists, public health officials, recreation, and community interests.

Food and Water Safety

Issue

Safe food and drinking water support health, supply nutrients, and are essential requirements for food security. Although U.S. food and water supplies are among the safest in the world, foodborne illness strikes from 6.5 to 33 million Americans each year, resulting in about 9,000 deaths. Estimated medical costs and productivity losses related to foodborne pathogens range from \$6.5 billion to \$34.9 billion annually. Concerns about food and water safety affect all consumers. However, certain groups, such as the homeless, children, the elderly, and American Indians and Alaska Natives, may be especially at risk of foodborne illness. Broad prevention strategies, including regulation and producer and consumer education, are critical to assure the safety of food at each step along its path from production to consumption.

Priority Actions

- **Implement the Presidential Initiative “Food Safety from Farm to Table”**
- **Implement the Food Quality Protection Act (FQPA) of 1996**
- **Implement the Safe Drinking Water Act (SDWA) Amendments of 1996 and Support Related Efforts**
- **Promote Integrated Pest Management (IPM)**
- **Promote Food Safety Education**

Discussion

Food- and water-borne risks fall into two broad categories: Illness caused by microbial contamination and chronic or acute exposure to harmful substances such as pesticides, contaminants, or other toxins. Recognition that these public health problems are an increasing concern has led to new legislation, regulations, and collaborative efforts to improve scientific and regulatory approaches to protect consumers, including the following:

- **Food Safety From Farm to Table:** Launched in 1997, this Presidential initiative calls for a nationwide early-warning system for food-borne illness, increased seafood safety inspections, and expanded food safety research, training, and education.
- **Food Quality Protection Act (FQPA) of 1996:** This law substantially strengthens the U.S. pesticide regulatory system and affords EPA and FDA unprecedented opportunities to provide greater health and environmental protection, particularly for infants and children, as well as other vulnerable populations. It establishes a single, health-based standard for all pesticide residues in all foods. It provides for a more complete assessment of potential risks, with special protections for potentially sensitive groups, such as infants and children.

- **Safe Drinking Water Act (SDWA) Amendments of 1996:** These changes will assure the sustainable availability of safe drinking water. The Amendments increase State flexibility, provide for more efficient investments by water systems, give better information to consumers, and strengthen EPA’s scientific work, including the use of risk and cost-benefit considerations in setting drinking water standards.

Some subpopulations have distinct characteristics or circumstances that may make them particularly vulnerable to microbial or contaminant exposure:

- The homeless often face unique problems of food and water safety due to lack of refrigeration, cooking facilities, and wholesome food.
- Children are more vulnerable to many environmental contaminants because their bodies are growing rapidly, and compared with adults, they eat proportionally more fruits and vegetables and drink proportionally more water and milk.
- The elderly, especially those affected by degenerative diseases, may be less able to practice safe food handling and also may be more susceptible to foodborne illness.
- American Indians and Alaska Natives consume fish and wildlife as major components of traditional diets. Food safety concerns may contribute to a higher risk of food insecurity in these populations if these food sources are contaminated by agricultural or industrial pollution.

The action steps outlined below expand on the priority areas to assure food and water safety.

1. Implement the Presidential Initiative “Food Safety from Farm to Table”

- Enhance surveillance and build an early-warning system to help detect and respond to outbreaks of food-borne illness promptly and to collect data to prevent future outbreaks.
- Improve responses to foodborne outbreaks by enhancing inter-governmental coordination and strengthening the infrastructure at State health departments.
- Improve risk assessment to characterize more effectively the nature and magnitude of risks to human health associated with foodborne hazards and to assist regulators in appropriate allocation of resources.
- Formulate new research methods for rapid and cost-effective testing for the presence of pathogens in foods, enhance understanding of how pathogens become resistant, and develop technologies for prevention and control of pathogens.
- Improve inspections and compliance for major higher risk foods, including seafood, fresh fruit and vegetable juices, egg products, produce, and imported foods.
- Expand food safety education of food preparers and handlers at each point of the food chain.
- Continue the long-range planning process to produce a strategic plan for improving the U.S. food safety system.

2. Implement the Food Quality Protection Act (FQPA) of 1996

- Reassess existing pesticide residue limits in accordance with the new and consistent health-based standard of safety.
- Conduct dietary exposure surveys among infants and children.
- Use an extra 10-fold safety factor to take into account potential pre- and post-natal developmental toxicity and completeness of the data with respect to exposure and toxicity to infants and children.
- Consider available information on aggregate exposure from all non-occupational sources.
- Prepare a new brochure on pesticide residues in food for display in supermarkets and grocery stores to inform consumers about pesticide risks and benefits.
- Periodically re-evaluate all pesticides for adherence to current safety standards and support by up-to-date scientific data.
- Expedite approval of safer, reduced risk pesticides.
- Develop safer, effective crop protection tools for American farmers.

3. Implement the Safe Drinking Water Act (SDWA) Amendments of 1996 and Support Related Efforts

- Local water authorities will disclose annually which chemicals and bacteria are in drinking water and improve the 24-hour notification process after discovering a dangerous contaminant in the water system.

- Strengthen pollution prevention efforts by assessing threats to and providing funding for State source water protection efforts and through new requirements for State water system capacity development and operator certification programs.
- Consider more closely the special needs of children, the elderly, and people living with AIDS and weak immune systems.
- Assign highest priority to preventing and treating the most harmful pollutants in tap water, such as *Cryptosporidium*.
- Improve badly deteriorating water systems throughout the country and strengthen State programs to protect drinking water.
- Continue and expand the partnership for safe water, a voluntary, cooperative effort between EPA, the American Water Works Association (AWWA), and other drinking water organizations, and over 186 surface water utilities representing 245 water treatment plants throughout the Nation.

4. Promote Integrated Pest Management (IPM)

- Increase use of IPM and risk/use reduction strategies to significantly decrease use of synthetic chemical pesticides.
- Achieve USDA’s goal of having 75 percent of U.S. crop acreage under IPM by the year 2000.
- Continue to promote the public/private partnership, Pesticide Environmental Stewardship Program (PESP), in which grower groups and utilities develop and implement plans to reduce pesticide risks and use.

5. Promote Food Safety Education

- Use the Partnership for Food Safety Education to develop science-based consumer-oriented messages to promote safe food handling practices, with cooperation among the U.S. Departments of Health and Human Services, Agriculture, and Education, State representatives, and food industry and consumer groups.
- Increase collaboration among government and nongovernmental groups to target and change unsafe food-handling practices by food handlers throughout the food chain. Include food-service workers, especially those providing food to populations at high risk of food-borne illness, or in educational efforts.
- Promote and incorporate food safety education into school programs.
- Encourage setting up a food safety education outreach program, using volunteers, to reach homebound individuals.
- Improve veterinary and producer education at veterinary and agriculture colleges. Strengthen current programs—designed to educate producers, veterinarians, and State and local regulators—about proper animal drug use to minimize residue levels and about quality assurance programs.
- Enhance funding for the USDA's Food Safety and Quality National Initiative Competitive Grants Program that supports education to help reduce foodborne disease and to increase knowledge of food-related risks.

U.S. Food Security Supplement to the Current Population Survey

This survey is the largest of its kind, both in number of households surveyed and questions ever asked in the U.S. Food security is measured at four levels:

Food secure — Households show no or minimal evidence of food insecurity.

Food insecure without hunger — Food insecurity is evident in households' concerns and in adjustments to households' food management, including reduced quality of diets. Little or no reduction in household members' food intake is reported.

Food insecure with hunger — Food intake for adults in the household has been reduced to such an extent that it implies that adults have experienced the physical sensation of hunger. Such reductions are not generally observed for children in the household.

Food insecure with severe hunger — Households with children have reduced the children's food intake to an extent that it implies that the children have experienced the physical sensation of hunger. Adults in households with and without children have experienced more extensive reductions in food intake.

The survey questions constitute a coordinated set of indicators designed to capture the full range of food insecurity and hunger behaviors, including related background information. These questions cover food expenditures, food assistance program participation, food sufficiency⁺⁺ and related concerns, food scarcity, and strategies for food shortage coping. The questionnaire items measure a variety of life experiences, behaviors, and self-perceptions that, taken together, can indicate household hunger and food security.

The instrument explicitly, but not exclusively, restricts the concept of food insecurity and hunger to conditions arising from economic deprivation. The decision was made to limit measurement to poverty-linked or "resource-constrained" food insecurity and hunger, in line with its primary intended use of informing policy. Food insecurity can stem from other sources such as limited personal capacity (illness, infirmity) or limited availability of nutritionally adequate and safe foods in the community at large. Similarly, simple physiological hunger, the uneasy or painful sensation caused by lack of food, can result from dieting, fasting, or simply being too involved or too busy to eat. The instrument will be used on other surveys to measure conditions of non-resource-constrained food security.

⁺⁺Food sufficiency is a basic building block to measure food security, which indicates amount and kind of food available.

Monitoring Food Security and Nutritional Status

Issue

Measuring and tracking changes in food security, hunger, and malnutrition are essential to assure that actions taken to eliminate these problems are effective and to identify where and why better programs and redirected resources are needed. The United States devotes nearly \$155 million annually to a National Nutrition Monitoring and Related Research Program that provides estimates of nutritional and dietary status and their causes and consequences.

During the past decade, the United States invested in development of measures of food security and hunger, and in 1995, the first Food Security Supplement to the Census Bureau's Current Population Survey included a series of questions designed to measure food security and hunger. This provides objective national estimates of the prevalence of food insecurity, with and without hunger. Still needed is a food security instrument for smaller and community-level surveys along with better coordination among Federal, State, Tribal, and local monitoring activities to ensure adequate coverage of high-risk subpopulations. Translation of data on food insecurity into information that is understandable to policymakers and the public is needed to better inform them of actions taken. Last, emphasis needs to be given to the monitoring program's capacity to track changes in nutritional status and food security in a welfare-to-work environment.

Priority Actions

- **Refine Measures of Food Security**
- **Monitor Changes in Nutritional Status and Food Security in a Welfare-to-Work Environment**
- **Improve Federal, State, Tribal, and Local Coordination**
- **Enhance Information for the Public and Policymakers**
- **Conduct Research to Improve Monitoring of Food Security and Nutritional Status**

Discussion

The National Nutrition Monitoring and Related Research Program, one of the most sophisticated nutrition and food security monitoring systems in the world, is a mosaic of interconnected Federal and State activities that provides information about the dietary, nutritional, and related health status of Americans; the relationship between diet and health; and the factors affecting dietary and nutritional status. Some 22 Federal agencies presently collaborate under a Ten-Year Comprehensive Plan mandated by the National Nutrition Monitoring and Related Research Act of 1990 and coordinated by the Interagency Board for Nutrition Monitoring and Related Research (IBNMRR). The IBNMRR is the focal point for implementation of the priority actions identified in this section.

The activities outlined in the rest of this section illustrate ways each priority action could be implemented.

1. Refine Measures of Food Security

- Continue to develop standard indicators and survey instruments related to food consumption, food security, nutritional status, and

participation in food assistance and other programs, involving Federal, State, local, and private partners.

- Improve constructs and measures related to community food security; consider, for example, including questions on an individual's frequency of use of food banks, food pantries, and soup kitchens and eligibility for and participation in alternative programs and work activities. Develop community food security capacity measures.
- Provide leadership in developing an international consensus on methodologies for measuring and interpreting food insecurity in developed and developing countries. Urge international agencies to validate, adopt, and recommend food security measures based on U.S. methods, where appropriate, as an international standard for developed nations.

2. Monitor Changes in Nutritional Status and Food Security in a Welfare-to-Work Environment

- Regularly track U.S. food security by integrating standard food security questions into a broad spectrum of national, State, and local surveys, and assure the timeliness of those surveys.
- Expand coverage of high-risk subgroups that are not easily sampled on national surveys, such as the homeless or American Indians living on reservations, through cooperative efforts among all levels of government and civil society. Use oversampling in national surveys or targeted special studies at State or local levels, where feasible.

3. Improve Federal, State, Tribal, and Local Coordination

- Continue to coordinate nutrition and food security monitoring activities using the Interagency Board for Nutrition Monitoring and Related Research (IBNMRR) as the mechanism. Make survey instruments and technical assistance available through the Board's member agencies.
- Develop appropriate statistical procedures for providing State and local estimates using data from relevant national or State surveys.
- Encourage civil society to monitor food security using standard methods. Develop protocols for collecting and aggregating information to increase utility and credibility of information.

4. Enhance Information for the Public and Policymakers

- Link information needs to the planning and implementation of surveys. Ensure that nutrition monitoring programs capture the appropriate information for policymaking in a timely and consistent manner.
- Fill major gaps that exist in the coverage and timeliness of the Nation's information on children and youth.
- Prepare periodic status reports on U.S. food security and nutritional status through joint efforts of civil society and government. Include the scientific and conceptual background along with appropriate uses and interpretation of data.
- Assess and report on the determinants and health outcomes related to food insecurity.

5. Conduct Research to Improve Monitoring of Food Security and Nutritional Status (See Research Chapter)

Research and Evaluation

Issue

Research and evaluation are vital to all facets of food security. They are requisite to understanding the determinants and consequences of food insecurity and undernutrition, developing and evaluating the effectiveness of ways to address the underlying causes and symptoms, ensuring the accurate measurement of the extent of these problems, and securing the continued sustainability and safety of the food supply. Each thematic area described in this paper presents specific needs for basic and applied research and policy analysis that, if undertaken, will contribute substantially to the capacity to achieve sustainable food systems and food security in the United States and abroad.

Assuring adequate investment in food security-related research worldwide through an effective combination of public and private sector research efforts is a difficult challenge. In 1994, for example, Federal agricultural research expenditures comprised only 2 percent of the \$66.5 billion spent on research and development, and this level has been virtually static since 1980. Private sector research has sustained most recent growth in agricultural research. Federal investment in human nutrition research totaled about \$540 million in 1995. In contrast, the four diet-related leading causes of death in the United States are estimated to cost from \$56.3 billion to \$250 billion per year in direct health care costs and lost productivity.

Priority Research and Evaluation Areas

- **Economic Security**
- **Food Access of Food Insecure Individuals**
- **Nutrition Promotion and Food Security Education**
- **Agricultural and Food System Productivity and Sustainability**
- **Climate Change and Mitigation**
- **Food and Water Safety**
- **Monitoring of Nutritional Status and Food Security**
- **Research Quality and Quantity**

Discussion

Investment in agricultural and food security-related research is essential for future food security. Many experts believe we may be under-investing currently with potentially serious consequences for the future. Economic returns to society from public investment in agricultural research are estimated to be extremely high—probably surpassing 35 percent per year. Similarly, returns to investments in nutrition and health research are also likely to be high because of the significant impact diet has on health, productivity, and associated medical costs. Basic research in the agricultural; physical, including biotechnology; social, life, and information sciences, as well as statistical methods, provide the foundation for understanding and achieving food security.

U.S. agriculture has been highly productive in the last 50 years with research-driven technological progress improving labor productivity around 800 percent between 1947 and 1987. The average American farmer now produces food for 128 people—about 94 in the United

States and 34 abroad. With the prospect of greatly expanded future global populations, it is essential that robust productivity growth continue in agriculture and other sectors.

Wherever it is conducted, agricultural research is likely to have significant positive spillover effects with academic and government research benefiting industry; research conducted abroad benefiting domestic U.S. agriculture; and research conducted in the United States benefiting developing countries. Research policy, then, needs to incorporate appropriate incentives so that society benefits from the comparative strengths and interests of different public and private entities including academic, nonprofit, and international research communities along with the commercial sector. Because the private sector often lacks incentives to conduct much of the research necessary to sustain productivity growth, the public sector has a clear mandate to support or conduct basic, pre-technology research. Similarly, other research areas where private incentives to conduct research are low, but potential public benefits are high, include research efforts to protect environmental quality and natural resources, to enhance food safety and nutritional attributes of food, social science research, and research in support of public decisionmaking.

Incentives to maintain and improve the quality of research, along with appropriate focus on matters relevant to food security, need to be identified and implemented. Developing a process that facilitates setting appropriate and strategic research priorities to maintain economic productivity growth, sustainable and safe food systems, and the food security of all consumers should be an integral part of the process. Cultivating cooperative partnerships and food security

research networks involving public and private researchers helps to expand research resources. Implementing mechanisms to protect intellectual property rights (IPRs) helps foster incentives for privately sponsored research. Though sometimes controversial, this allows private firms to capture a share of gains from research and increases their incentive to innovate. However, IPRs may also restrict access to new technology by the scientific community.

The following bullets highlight research issues relevant to the thematic areas identified in this document:

- **Economic Security.** Research pertinent to policymaking and program administration that is dedicated to enhancing economic and food security and moving people from welfare to work is critical. Policy and program analysis of formative and evaluative types is needed. Research to depict alternative poverty measures reflecting costs of essential goods and services in addition to food costs is important and should continue.

Specific priority areas related to economic security include expanded research on poverty, education, labor markets, economic development, education, and impacts of policy and investment on economically vulnerable areas such as enterprise zones and remote Indian reservations. Research and evaluation is also needed to understand the distinct needs of rural communities related to reducing poverty and increasing work opportunities and the cost effectiveness of economic and rural community development

programs. A rigorous program of research, evaluation, and exchange of information will assist in identification of successful strategies for investing in human capital development, alleviating poverty, and increasing employment.

It is also important to measure the effects of policy reforms on children and families. Research agendas should include attention to the role of fathers and the effects of fathering on children's well-being as well as evaluation of the outcomes of Head Start and other quality child care programs on children and families. Collaborative efforts among States, communities, the research community and Federal partners will be needed to identify necessary information to design and implement programs that promote sustained employment.

- **Food Access of Food Insecure Individuals.** Study priorities related to enhancing food access include research to improve management practices affecting the performance and program integrity of the current set of food assistance programs in efficiently meeting the needs of eligible recipients as well as studies to identify and evaluate alternative policy, program, or management approaches in relation to emerging food assistance needs. Data collection and research focusing on the characteristics and situations of vulnerable populations and their nutritional and food security needs will help assess approaches to enhancing access to food and food assistance, including the delivery of nutrition education.

Evaluation of the impacts of food assistance and federally supported food service and nutrition programs on food security, food consumption, and dietary quality of targeted population groups is necessary to evaluate and improve the targeting efficiency of programs on the basis of nutritional risk and need. Also noted is a need to monitor compliance with congressionally mandated nutrition standards for school meals and to respond to emerging program management needs.

- **Nutrition Promotion and Food Security Education.** Increased knowledge about how to stimulate healthy food, nutrition, and physical activity behaviors in the general and low-income populations is key to achieving and maintaining food security. The effectiveness of public nutrition promotion programs, including nutrition education, must be evaluated in terms of successful behavior change and cost-effectiveness. Other priorities for basic and applied nutrition and consumer research to improve effectiveness of nutrition promotion and food security education include support for public and private basic and applied research in nutrition, physiological, and neurological development; continued research into energy balance and its implications in obesity, diabetes, and other conditions as well as research on relationships between "hidden hunger" and obesity. Determination of energy expenditures, body mass indices, and micronutrient status of poorly nourished U.S. population groups contributes to this knowledge. Also, it is important to sponsor economic and social research to understand determinants and correlates of healthy eating and effective consumer food management.

- **Agricultural and Food System Productivity and Sustainability.**

Research priorities to achieve productivity with sustainability throughout agriculture and the food system include strong support of basic and applied agricultural research, including biotechnology, to support productivity growth. Additionally, the need for agricultural economic research leading to improved risk management tools for agricultural producers has been noted, along with examination of the impacts of changing farm and agribusiness structure on food security, the impacts of trade policies and barriers on food security, the impacts of current and emerging information technologies and communication systems on agriculture and the food system, and research on the economic and social impacts of biotechnology in agriculture.

Expanded research on environmentally sensitive agricultural practices, including integrated pest management (IPM), integrated crop management, watershed management, and soil and water conservation, including enhancing irrigation efficiency and timing, are crucial to improve resource conservation and environmental quality. Nutrient excesses in watersheds may lead to “dead zones” incapable of sustaining fish or other aquatic life forms. Socioeconomic research is also important to assess the impacts of alternative environmental policies including regulation.

- **Climate Change and Mitigation.**

Research on climate change and global warming effects related to agriculture includes research on methane capture systems on waste lagoons, improved fertilizer management to decrease nitrous oxide

emissions, and irrigation efficiencies. Additionally, research on the impact of climate variability due to El Niño-Southern Oscillation phenomena on crop yields, water resources, and energy demands will undergird policy efforts to mitigate adverse impacts with potentially detrimental effects on food security.

- **Food and Water Safety.** Food and water safety research priorities include research on food and drinking water safety hazards from microbiological and chemical sources and improved risk assessment methods, research on food production and handling practices from farm to table and their relationship to food safety, research on the short- and long-term health impacts of exposure to food and drinking water safety hazards, and studies to assess the most effective ways of communicating food safety information to different target audiences.

- **Monitoring of Nutritional Status and Food Security.** Research to improve monitoring of food security and nutritional status includes improved methods for survey sampling, design, data collection, and measurement as well as procedures to permit reliable estimation of food security status, dietary status, breastfeeding rates, and nutrition- and health-related indicators for high-risk groups that are not well covered by existing surveys. Measuring food security longitudinally in conjunction with income and program participation enables better understanding of the dynamics of food insecurity. Similarly, assessment of the impacts of sporadic, cyclical, and long-term food insecurity on health and cognitive function will expand understanding of its consequences to quality of life and productivity. Criteria for interpreting

nutrition and health indicators for population subgroups including infants and children, pregnant and lactating women, and the elderly need further development.

The actions listed below elaborate on the research and evaluation priority areas.

- 1. Expand Research to Improve Household and Community Economic Security**

- Conduct a rigorous program of research, evaluation, and exchange of information to identify successful strategies for investing in human capital development, alleviating poverty, and encouraging education and employment. Measure the effects of policy reforms on children and families. Work collaboratively with States, communities, and the research community along with Federal partners to identify critical information needed to design and implement programs that promote sustained employment.
- Continue research to depict alternative poverty measures that reflect costs of essential goods and services in addition to food costs.
- Ensure that research agendas pay adequate attention to the role of fathers in families and the effects of fathering on children’s well-being.
- Document the economic impacts of space-specific policies and investments in economically vulnerable areas, such as enterprise zones and remote Indian reservations.
- Conduct research and program evaluation to measure program performance and outcomes for Head Start families and other quality child care programs.

- Conduct research to understand the distinct needs of rural communities in achieving success in reducing poverty and increasing work opportunities. Develop and evaluate effectiveness of economic and rural community development programs.

2. Sponsor Research to Enhance Access of Food Insecure Individuals to Food and Food Assistance

- Sponsor studies to furnish information to improve management practices affecting the performance, including program integrity, of current food assistance programs in efficiently meeting the needs of eligible recipients.
- Sponsor studies to identify and evaluate alternative policy, program, or management approaches along with emerging food assistance needs.
- Evaluate through research the impacts of food assistance and federally supported food service programs on food security, food consumption, and dietary quality for targeted population groups. Sponsor studies to improve the targeting efficiency of programs, including the delivery of nutrition education, on the basis of nutritional risk and needs of vulnerable populations.
- Assess food consumption patterns of homeless persons as reflected in the 1997 Interagency Council on the Homeless survey, conducted by the Census Bureau, and compare them with 1987 data to identify progress and barriers.
- Sponsor studies to enable effective use of electronic benefit transfer systems among the target audience in food assistance programs.

- Monitor compliance with congressionally mandated nutrition standards for school meals and respond to emerging program management needs.

3. Sponsor Research on Nutrition Promotion and Food Security Education

- Conduct research on how to stimulate healthful food, nutrition, and physical activity behaviors in the general population and low-income populations.
- Support public and private basic and applied research in nutrition and physiological and neurological development. Continue to conduct research into energy balance and its implications in obesity, diabetes, and other conditions as well as research on relationships between “hidden hunger” and obesity. Determine energy expenditures, body mass indices, and micronutrient status of poorly nourished populations.
- Establish a decisionmaking framework and criteria for the development of public nutrition promotion programs. Use information on health, nutritional, and educational status of vulnerable subgroups and information on consumer food demand and related behaviors.
- Sponsor economic and social research to understand determinants and correlates of healthy eating and effective consumer food management. Assess how changes in consumer demand for food and changing consumer lifestyles affect health, nutrition, and food safety.
- Develop and evaluate new information technologies and nutrition promotion strategies to deliver nutrition information to consumers and

producers so that it can be used effectively in making food choices.

- Assess the effectiveness of educational interventions in changing behavior. An example is the National Institutes of Health’s (NIH) research on the design, implementation, and evaluation of behavioral and social interventions to promote health and prevent disease.
- Sponsor cost-benefit and cost-effectiveness analysis of nutrition promotion programs including nutrition education.

4. Sponsor Research Contributing to a Productive and Sustainable Agricultural Sector, Food Systems, and Environment

- Conduct and support basic and applied agricultural research to support productivity growth, including biotechnology.
- Conduct research leading to improved risk management tools for agricultural producers.
- Examine the impacts of changing farm and agribusiness structure on food security.
- Evaluate trade policies and barriers for impacts on food security.
- Assess the impacts of current and emerging information technologies and communication systems on agriculture and the food system.
- Conduct research on economic and social impacts of biotechnology in agriculture.
- Expand research on environmentally sensitive agricultural practices, including integrated pest management (IPM), integrated crop management, and soil and water conservation, including enhancing irrigation efficiency and timing.

- Conduct socioeconomic research to assess the impacts of environmental regulation.

5. Sponsor Research on Climate Change

- Increase and improve research on methane capture systems on waste lagoons and improve fertilizer management to decrease nitrous oxide emissions and irrigation efficiencies.
- Conduct research and analyses of the impact of climate variability due to El Niño-Southern Oscillation phenomena on crop yields, water resources, and energy demands.

6. Sponsor Research on Food and Water Safety

- Conduct research on food and drinking water safety hazards from microbiological and chemical sources and improve risk assessment methods.
- Formulate new research methods for rapid and cost-effective testing for the presence of pathogens in foods and to enhance understanding of pathogen resistance.
- Conduct research on food production and handling practices from farm to table and their relationship to food safety.
- Sponsor research on the short- and long-term health impacts of food and drinking water safety hazards.
- Conduct studies to assess the most effective ways of communicating food safety information to different target audiences.

- Establish an interagency coordinating body to review food safety responsibilities and research programs of the various agencies with a view to recommending direction of research funds and programs in accordance with those responsibilities.

7. Conduct Research to Improve Monitoring of Food Security and Nutritional Status

- Improve methods for survey sampling, design, data collection, and measurement procedures to permit reliable estimation of food security status, dietary status, breastfeeding rates, and nutrition- and health-related indicators for high-risk groups that are not well covered by existing surveys.
- Continue to test food security-related questions at State and local levels and the feasibility of incorporating them into State level nutrition surveillance systems as well as those of nongovernmental groups.
- Measure food security longitudinally in conjunction with income and program participation to determine dynamics of food insecurity. Assess the cognitive and health impacts of sporadic, cyclical, and long-term food insecurity.
- Develop criteria for interpreting nutrition and health indicators for population subgroups including infants and children, pregnant and lactating women, and the elderly.

8. Enhance Quality and Quantity of Food Security-Related Research

- Enhance support for USDA's National Research Initiative programs that support food security initiatives.
- Develop cooperative partnerships and joint mechanisms between public and private researchers, including government agencies. USDA, for example, administers over 200 Cooperative Research and Development Agreements (CRADAs) between Federal laboratories and private industry as well as the Community Food Projects Competitive Grants Program (\$2.5 million per year through 2002).
- Establish and promote food security research networks, nationally and globally.

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