

Catherine Chiodo
Roosevelt High School
Des Moines, Iowa

Food Security in India: Requiring Reforms in Government and Resources for Farmers

While looking out the train window as I traveled through India this past summer with the Global Youth Institute, my mind was fully engaged. It placed names on geographical locations, merged historical and cultural facts and figures, and created a societal composite of this ancient country with a relatively new democracy. This land has held my fascination since childhood. The subject of endless library books I've devoured since grade school, India has been a magical place for me. Having four weeks this year to experience both the rural and urban areas of the country added a painful dimension to my fascination with India: the 300 million people who live in poverty became all too real.

How can a family of four exist on less than one dollar per day? I was awed by the resourcefulness and the amount of work it took just to survive in India. The poverty in rural areas struck me the hardest. As stated by Dr. Abraham George in his keynote at the Global Organization of the People of Indian Origin (New York, September 2002), "India lives in its villages. Over 70 % of the population lives in rural areas." 33 % of the Gross Domestic Product is derived from agriculture and related activities. Because of this, 60 % of unemployment is related to agriculture. Failed initiatives, policies and governance, help perpetuate these statistics. For the rural farmer, the inability to access education, technology, management skills and markets also contribute to the high unemployment numbers. So in considering future social-economic progress in India, developing the potential of the rural population is significant. In India, the family diet is based on grains. The crops raised are primarily rice, wheat and vegetables. Variations of these staples were served to me while staying with Indian families. Yogurt frequently accompanied these meals. Occasionally chicken and lamb were served, and in coastal regions, fresh fish was a common source of protein. Tea was the most popular drink.

I walked through the city slums and many poor rural communities and saw people who were malnourished and starving, leaving me with the question of what was or was not taking place to address this immediate crisis? Placing food in the hands of the starving is addressed through the means of India's universal Public Distribution System (PDS) and its universal Integrated Child Development Scheme (ICDS). Both programs can supply immediate help, but I believe policy changes are needed to enable them to better perform their functions. When selected to be part of the World Food Prize activities, I decided to investigate to better understand the root of India's food insecurity problem.

While there have been achievements in food production since the country's great famine of 1943 which caused four million deaths, India is now faced with an inherent food crisis that impacts the world's poorest nations and the largest child population in the world. Food insecurity is the result of a number of global factors. One is that when demand grew faster than production in the grain market, prices became inflated and the number of people living with chronic hunger grew. Other factors influencing rural Indians living in poverty involve issues of daily life. These include malnutrition, disease, inadequate shelter, unclean conditions, and infant mortality. These are coupled with debilitating social issues, such as oppression of women and the remnants of the cast system that continues to exist. While the average family has three children, the family structure is one of a multi-generational extended family unit, with three generations often living together.

With 78 % of India's farmers owning only small amounts of land, they produce 41% of the country's grain. These farmers (along with agricultural workers who do not own land) make up the majority of the poor and malnourished of India. Although the productivity of the small-land farmers is slightly higher than that of medium and large farms, there are a number of reasons why poverty dominates

this group. Many small land-owning farms only have enough space to raise grain to sustain their own family's meager existence, with little or nothing left for market. When farmers do have produce to sell, they often lack access to local markets as well as information and the ability to transport their goods. The farmer needs help in understanding the process of marketing, including tools like pricing strategies. These farmers continue to farm using the same practices and planting the same crops, resulting in little chance of increasing productivity. As a result they have no money to invest in technology, education or farm equipment. This reinforces the ever-worsening cycle and exacerbates an already bleak situation that is compounded by natural disasters, soil depletion and climate change. While traveling throughout India, I consistently heard concern about weather, the lack of precipitation, and the monsoon season being late.

As the global demand for food continues to increase, stabilizing the world's food markets and implementing sustainable agricultural practices are imperative. Rice, wheat and corn are staples of the world. Current international efforts have helped steady prices through the efforts of food subsidies, humanitarian relief, protection programs and increasing the amount of crops produced. While global economic recession has also added to the current stabilization through decreased costs of land and related agricultural necessities such as fuel, water and fertilizer, any recent stabilization is being overshadowed by current and future trends.

At the 2005 National Symposium on the Achievement towards Food Security, held at the Mahatma Gandhi Institute of Applied Sciences at Jaipur, a number of experts addressed the development of biotechnology and the effect it can have on food security. C.K. Ojha, in his lecture on the demand for food grains, cited biotechnology as an "immediate solution toward food security" for the country. Threatening sustainable agriculture development on a global level, Ojha noted, was the human effect on the environment. Major indicators demonstrate that the physical condition of earth is deteriorating; the earth is getting warmer. Deforestation is reducing the ability of the planet and its vegetation to absorb and retain water.

Another presenter, S. Seshadri, from the Shi AMM Murugappa Chittiar Research Center in Taramani, cited another issue threatening food sustainability: the emission of greenhouse gases (GHGS). The three major gases produced from the agro-ecosystem are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). After CO₂, methane is the second most devastating. In the past two centuries, it has doubled, and in the past forty years, it has increased by fifty percent. A major source of methane is rice production. The process of water logging fields to grow rice creates an ideal environment for creating methane. The Intergovernmental Panel on Climate Change (IPCC), which regularly presents a scientific perspective on the current state of climate change and its potential environmental and socio-economic consequences, recommends a reduction in methane emissions and improvements in livestock manure management and rice cultivation techniques. This panel suggests a strong need for considering the global climate when working for food security. Yet with the increase in the global population, rice production will need to double by the year 2020. In turn, this could increase methane production by fifty percent. To insure food security in India, it is recommended that food production should be increased by five million tons per year. Strict limits proposed to reduce GHGS could slow the economy and have serious implications for poverty alleviation programs.

With global food reserves at a fifty-year low, given the global economy and the predicted growth in the world's population, short- and long-term initiatives are needed to feed, support, educate and empower the hungry and poor of not just India, but the world. In addition to impacting the world's poorest people, food insecurity has a rippling effect of destabilizing governments and creating social conflicts. In the short term, chronic hunger and malnutrition plague India on a massive scale. According to the 2006 report on the *State of Food Insecurity in the World* by the Food and Agriculture Organization of the United Nations, no other country comes close to India in terms of chronic hunger.

In addition to the government's public distribution system (PDS), a large program that provides intervention to starving Indians by providing cheap food throughout the country, two other major programs are in place. The Midday Meal Scheme provides nutrition for children with a cooked meal while the child is at school. As early as 1982 this program was implemented in a number of cities, but in 1995 the Supreme Court of India ordered that the program become mandatory in all government-assisted primary schools. The meal provides 300 calories per day and 8 to 12 grams of protein. Over the past decade, the program has come to include children up to 15 years of age in rural areas, plus offers midday meals for the elderly, pregnant women and widows. Although the implementation and success of this program is not consistent across India, there are a number of positive outcomes. In the states of Tamil Nadu and Gujarat, school enrollment has improved and the number of girls attending has increased. In 2000 in Tamil Nadu, over 7 million noon meals were served to children between the ages of 2 to 15. While nutritional outcomes are difficult to measure, data suggests a decline in malnutrition in Tamil Nadu. In other parts of the country, the delivery of this program provides inconsistent results. The other major program, the Integrated Child Development Scheme (ICDS), supplements the nutrition to young, pregnant women and nursing mothers. The ICDS also provides a number of services to children below the age of six. The government-sponsored Anganwadis centers provide health, nutrition and preschool education. This program has been expanded throughout the entire country and includes pregnant women and women who are nursing. Again, the result of the program varies from region to region due to inconsistencies in the implementation and delivery of services.

The PDS, begun by the British government in 1939 as a wartime rationing method, was strengthened during the mid-1960s due to draught and food shortages. Within the PDS, specific quantities of commodities are provided at government-subsidized prices to registered households with incomes below the poverty line. Food distribution takes place through a network of fair-price shops. It evolved from a system of rationing in selected cities into a national distribution system in the 1970s. When the PDS shifted responsibility to the central government—rather than targeted geographic locations in need, inconsistencies in entitlements, foods offered and price setting became issues. Arbitrary decision-making and lack of standardized policies led to the failure to achieve price stabilization. Providing basic food at a reasonable price, maintaining price stability and increasing welfare facilities for the poor have historically been the goals of the food distribution system.

In 1997, the Indian Government introduced a method of targeting. The entire population was divided into two categories: below the poverty line and above the poverty line. A below poverty-line household would receive grain from the PDS at half the economic cost; households above the poverty line were held to full economic cost (no subsidy). The PDS system has suffered due to targeting errors. The inability to accurately and consistently place households into these groups throughout the country has excluded households in need by placing them in the above poverty-line group. These errors result in higher expenditures for families. Those who are excluded experience malnutrition and health issues, and those who are inaccurately included use valuable resources that could be serving those with a higher need. A third group was created in 2000, referred to as the poorest of the poor, to receive additional subsidies. This distinction allowed for tiered pricing dependant on a family's category.

An increase in the number of cardholders above the poverty level came in 2000. Looking at the household of agricultural laborers, 52 % either had no card or had an above poverty-line card. The official poverty line currently is 360 rupees per capita per month (only \$7.47 US). Households that need food security through public distribution are not receiving help. A significant portion of manual laborers (including agricultural laborers) and those in the lowest expenditure classes are excluded from public distribution. This extensive misclassification of poor households contributes to nutritional insecurity in the country. Today more than 222.2 million Indian families hold ration cards entitling them to purchase a fixed selection of food products, and in 2007 the PDS distributed 31.6 million tons of food grain.

As domestic prices become more affected by international price fluctuations, the need to provide affordable food continues to be an inherent policy intervention for this country. If India looks for the characteristics of a successful PDS, it can turn to Tamil Nadu, one of the 28 states in India, where effective policy, governance and local involvement come together. Today, in contrast to the other states, Tamil Nadu provides a near universal Public Distribution System. Although household classifications are still used (above or below poverty line), targeting is not. Because the universal PDS criteria excluded a large portion of the population, the policy was withdrawn in Tamil Nadu due to public pressure. Household are given options to decline rice purchases from the PDS, allowing them to buy other goods like sugar and kerosene. Over 100,000 cardholders have made this choice, and the number of cardholders who have chosen to withdraw completely from the PDS stands at 52,000. Equal treatment is extended to the remaining 17.8 million cardholders, entitling them to purchase rice at the specially subsidized price. Tamil Nadu buys its grain from the central government. A strong political commitment and close monitoring by the government has created success for the PDS in Tamil Nadu. The distribution network, known as private fair-price shops, is now 96 % comprised of cooperatives and the remaining network ration shops are run by self-help groups. Cooperative Banks have been set up to provide credit to purchase from the PDS. Improvements in the nutritional outcomes in Tamil Nadu over the past decade are due in part to a better functioning PDS. Other indicators for success in Tamil Nadu come from a National Family Health Survey, which shows a proportionate decrease of the 46 % of underweight children in 1992/1993 to 37 % in 1998/1999. In 2005/2006, it fell to 33 % while the national average remained at 46 %.

During the 1990's, India's policy approach to agriculture was to increase crop production through subsidies in power, water and fertilizer, as well as by increasing minimum support price. This help did not improve income distribution nor the demand for labor. The subsidies were not invested in building new capital assets, such as rural infrastructure, irrigation and power. Today it is questionable whether sustainability of this approach is possible. In addition, these subsidies have increased the use of fertilizers, pesticides and water, posing environmental issues. Subsidies in the past for development in technology, power and water have often fared poorly, due to complex procedures and heavy transaction costs. A competitive market can aid in providing reasonable cost. Modifying processes and providing effective policies and sound delivery mechanisms are necessary to ensure a better future for food production and security for even the poorest rural farmer.

Today, India is recognized as a growing economic power, but it has the largest number of people in the world who are chronically hungry and malnourished. Up to this point, policy making and the delivery of initiatives have not solved the hunger crisis. The policies of the 1960s did achieve some success in addressing food insecurity. The acceleration of production of food grain ushered in a period of low and stable prices for grain. In the early 1990s, economic liberalization began and that is viewed as having had a damaging "impact" on consumption, nutrition and food security programs. Also intertwined in food security are poverty, government planning and management, and environmental, economic, social and education issues. A cornerstone for effectively addressing these issues lies in good public governance based on the principles of democracy and grounded in checks and balances to ensure equity and opportunity for advancement at every level. Transparency is imperative to address management and distribution issues within all aspects of running of the country.

In my opinion, policy changes to promote economic reforms are needed and already are being recommended by a number of sources. Prime Minister Manmohan Singhi, while addressing the National Development Council in December of 2007, advocated targeting only the poorest of the poor for food grain subsidies. Reserving food subsidies and interventions for this segment of the population and using the market for food distribution would decrease the government subsidy bill. Looking at the model that Tamil Nadu provides, including more options for cardholders and community incentives, both national and local programs are needed. The call for expansion of supplementary programs in the past several

years, such as the ICDS and Midday Meal Scheme, has come from a number of levels, including the judiciary. These programs must be executed through a national framework to provide consistency in delivery and to maintain a standard in the poorest of locations. But they must also retain some local autonomy to increase ownership and provide local solutions for local problems.

Policy and governance must be infused and embedded with accountability, integrity, transparency, ownership and flexibility. Accountability is imperative through inspection and impartial oversight to ensure delivery of goods and services. Integrity and transparency are needed to maximize the programs and to ensure resources are getting to their intended destinations. Local ownership is highly important, not only for better success with existing programs, but for long-term solutions to sustainability. Within the local communities, flexibility is needed to best serve the diversity of specific populations. Public policy can help provide incentives that encourage people to be involved in food sustainability. Local communities must provide a climate for farmers to participate in new methods and technology that produce better yield and are environmentally friendly.

There are other things that promise to aid in food security. The development of food biotechnology in India continues to be researched and implemented, but it is apparent that the future need will eclipse agricultural production. Increasing production by the use of plant breeding programs now gives way to genetic engineering and molecular breeding. To date, the dissemination of biotechnology information in India has been slow in reaching all parts of the country. This needs to change. The role of women in the Indian society is an untapped resource. Traditionally, males are favored over females because of their work potential, especially in rural communities. Even within the family unit, mothers often favor sons over daughters, providing young males with more opportunities. Girls receive far less education and often do not attend school. Yet education is a key in unleashing the female potential in the rural communities to improve the future of farms.

Agricultural productivity must improve. Traditional farming techniques perpetuating low productivity must be replaced with new technology, and farming must be viewed as an economic venture rather than a way of life. Utilizing modern practices and farming equipment would aid in increasing profitability. There is an inherent need to increase investments in strengthening the small farmer. Such measures include agrarian reform, improving and creating new infrastructure and institutions, and developing new enterprises and technology, along with increasing crop and livestock yields. Governmental and non-governmental cooperation and the building of relationships with the local farmer could expedite these incentives. Enhanced government policies are critical to bridging the gap to future food sustainability in India. Whether the solutions involve more effective and accurate execution of current or future initiatives, improvements in technology, education for all citizens, and stability in food and nutrition I believe the key to food security lies in the unlocking of human potential to create hope for the future.

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