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India: Assisting vulnerable populations and improving the effectiveness of humanitarian relief and food aid.

Since gaining independence in 1947, India has emerged as one of the world's great economic superpowers, the world's largest democracy, the second most populous nation on the planet, and a source of some of the world's most prominent and influential industrialists and scientists (Hulshof). Today India proudly takes responsibility for its achievements, and for all of its people, regardless of how isolated, or how marginalized they have become by life in coarse urban settings or in disaster-prone regions of the Indian countryside, or by armed conflict on borders that have been disputed since the day the British left the subcontinent.

As a young, prideful, but developing country, India faces all the challenges of a developed nation, including climate change, competition on a global market, maintaining widespread and continued food security, and providing greater access to higher education and good healthcare. India severely lacks much of the infrastructure necessary to support their growth and relief efforts, regardless of how well-funded they are, or how much public support they receive. For example, current economic policies in agriculture often leave millions of tons of grain to spoil, while the cost of crops rise, leaving a fairly large fraction of the nation to go hungry for years (Swain). It will only be through serious agricultural and trade reforms that India's government can begin to ensure that farmers can provide for the country and for themselves, and that what remains of the malnourished population is taken care of by aid from not just the strongly nationalist government, but also the rest of the world, through financial aid.

Farming in India is a challenging line of work, with every region having its own geographical and bureaucratic obstacles. Farming provides 600 million direct jobs, and around 200 million indirect jobs, and in total there are about 490 million acres of land dedicated to farming in India, which is 60% of India's total land and roughly equivalent to the size of Alaska ("Average"). By comparison, the United States officially recognizes about 431 million acres of its land as farmland. The average sustenance farm family in India has been shrinking over the past few decades and today has four to five members, while urban families tend to have slightly less (Data, Shrinivasan). A typical household farm has less than half of an acre of arable land, and it is custom to divide that land amongst siblings, or in some cases share it with the surrounding community ("Average"). The most commonly grown crops are rice in humid areas of the country, and wheat, millets, and cotton in the dryer parts of the country; but for financial reasons, many farmers are beginning to experiment with new crops and new farming practices (Watts, Menon). Agricultural infrastructure has slowly been improving, with tractors and other machines becoming a more common sight ("Average").

The poorest families often receive aid in the form of minimally-priced grain, while most other farmers will eat some of their own harvest, as well as sell it for other foods, making for a more well-rounded diet (Thompson). Urbanites have virtually no room to grow any of their own food, and what they cannot find or afford at a nearby open air market, they will often purchase in processed form at a supermarket (Linnekin). Current economic policy in India makes it difficult for most farmers to make much more than a small profit, shrinking the number of people employed in the farming industry over time. Proper nutrition is absent in the majority of the Indian population, with malnutrition, though on a downward trend, being a large threat to child mortality and the development of the nation as a whole (Hulshof).

Over the last decade, India's government has signed into law multiple pieces of legislation that are specifically designed to establish greater food security in primarily rural environments, which suffer greatly when farmlands are flooded, or when wheat and rice markets are down (Devereaux). A crucial bill, instituted in 2011, is the Food Security Bill, which, with support from the Indian Supreme Court, who ruled that the right to life granted in the Indian constitution includes access to food, guarantees approximately 67% of Indian households 25kgs of rice and wheat each month for the very low cost of 3 Rupees, or 0.05 USD, per kilogram; the program costs the Indian government about 1.8 billion USD annually (Shambhu). Before the passage of the bill, the Indian government provided approximately 35kgs of grain at minimum prices to households through multiple aid and relief efforts, but covered a significantly smaller fraction of the population. It is believed that, through this bill, the poorest families and least successful farmers will be able to feed themselves all year round, even during times of drought, flood, or famine.

The Food Security Bill has been deemed highly ambitious and a step in the right direction by the majority of the Indian population, but its critics claim that the economic implications of the extremely low costs of grain will hurt famers, who are already struggling to make ends meet, regardless if they receive cheap wheat and rice (Menon). By setting such a low market price for wheat and rice, farmers are forced to increase the volumes of their annual harvest, or farm other more profitable crops. That's why since the institution of the Food Security Bill, more and more farmers have began to grow and harvest crops other than rice and wheat, like seasonal fruits, shellfish, or dairy, all of which have become much more profitable under the regulations of the Food Security Bill (Menon).

The reduction in the amount of grain harvested annually in turn puts pressure on the distribution of grain as laid out in the Food Security Bill. With less grain available, the government cannot provide the amount of grain it has promised to vulnerable populations, defeating the very purpose of the bill. But not only does a cut in the profitability alter the kinds of crops farmers are willing to harvest, it also encourages more people to move to cities to get higher paying jobs and more financially secure lifestyles, reducing the overall number of farmers even further (Menon). If the government does not heavily subsidize the production of grain, and improve the infrastructure to harvest, transport, and store it, then the Food Security Bill will do more harm than good to the Indian economy and its people.

Critics also complain about the Food Security Bill's allocation of food, which bases its distribution of grain on poverty statistics gathered by the government (Dreze). The problem lies in the fact that different branches of the Indian government use different data and have achieved different results in their studies of the amount of poverty throughout India. The National Sample Survey, similar to the United States' Census, places the poverty ratio at 28.3% in rural areas, 25.7% in urban areas, and 27.5% for the entire nation from the years 2004-2005 (Shambhu). Those same years, the Mixed Recall Period data, which is based on consumption of non-food items, placed rural poverty at 21.8%, urban poverty at 21.7%, and overall poverty in India at 21.8% of the population (Shambhu). The Food Security Bill is supposed to allocate grain to three different kinds of households, 'priority', 'general', and 'excluded', but the Bill makes no provisions as to how exactly national poverty statistics affect the distribution, nor what the three household labels mean (Abreu).

In a letter to the Indian government regarding the Food Security Bill, 36 agricultural and economic experts expressed their concerns for the bill, especially the lack of specifics regarding what actually comprises the three categories of aid recipients (Abreu). They suggest an alternate form of the expansion of aid to increase food security. Because of their reservations about the arbitrary allocation of grain, they suggest putting more money into an existing program, the Antodaya Anna Yojana, which has delivered the same kinds of aid to the poor since 2004, letting states decide exactly which households or demographics will receive aid (Abreu, "Antodaya").

The debate over the implications and the implementation of the Food Security Bill often involves frustration about different branches of government bureaucracy not working in unison, but rather getting in each other's way, evidenced by the effects of conflicts in poverty statistics gathered by the same government at the same time. This opens the door wide open for corruption, something India has had to battle since the days of the British Empire. Wherever deadlines are not set or met, recipients for aid and relief programs are not named nor never receive the things they need, the vast sums of money put into programs are vulnerable to corruption. According to a survey, more than 50% of people have firsthand experience bribing public officials, who could be anything from traffic police officers, to tax collectors (Maansi). Most disturbingly, a World Bank report states that in India only 40% of all grain handed out to the poor reaches its intended target (McGivering). Regardless of how India intends to expand or reform its efforts to bolster food security, the nation's failure to hold the corrupt accountable must be addressed by allowing Indians to work more freely around the bureaucracy, and by providing living wages to law enforcement, so they are less ready to accept bribes.

The Food Security Bill isn't the only risk the Indian government has taken to help get more grain to the poorest of its people. From 2007 to 2011, the Indian government banned exports of wheat in an attempt to raise wheat prices in continental Asia, making farming wheat more profitable for poor farmers, and to try to secure wheat that was previously leaving the country, and give it to those who needed it at extremely low prices ("Wheat"). It is estimated that approximately 60 million tons of grain were stored and left to spoil over the course of those four years because wheat and other grains like rice and millets are prone to disease and only last around 6 months in open air storage facilities ("Wheat"). Neither any single branch of government, nor segment of the population is responsible for the failed attempts at agricultural reform. These shortcomings can be attributed to poor communication between departments of government and heads of infrastructural establishments, as well as mountains of bureaucracy that delay the efforts of many citizens and officials involved in the agricultural market.

Another piece to the infrastructural puzzle that seems to be missing is transportation and proper storage. When farmers cannot get grain to markets, or they spoil faster due to poor storage-which is a major issue for farmers of rapidly perishable crops such as fruits and vegetables- then the farmer suffers further financial hardship and the programs laid out in the Food Security Bill cannot provide the aid they promise (Shambhu). In mid-2011, when the government re-opened wheat exports, the demand for wheat coming from India grew and the price of Indian wheat was inflated to around \$300 per ton, which is much more expensive than wheat coming from Russia, a major competitor in the region, which was priced at around \$244 per ton ("Wheat"). While the Indian government's plans to make farming wheat more profitable could be considered a success by raising the price of wheat exports, it does not mitigate the negative effects of the Food Security Bill on many rural farming communities that largely distribute food locally, and therefore would not benefit from the foreign demand for Indian wheat unless they sold their harvest to the government at dangerously low prices (Menon).

Whether or not the Food Security Bill is successful in the coming years does not determine the entire fate of Indian food security. Wheat, rice, and millets only provide part of a healthy diet. The fact that other foods with different nutritional values and higher calorie counts are not reaching the people that need them most draws even more criticism towards the actions of the Indian government's aid programs (Shambhu). A balanced diet, that would include oils and spices that are essential to the Indian diet, would be more expensive to distribute, but preferred in order to combat malnutrition.

Malnutrition has had the greatest effect on the most vulnerable part of the Indian population, children. The World Bank estimates that 60 million in India are undernourished and UNICEF estimates that 20% of children ages 1-5 are "moderately to severely undernourished", while another 48% are mildly undernourished or stunted in development (Hulshof, McGivering). Widespread malnourishment is

commonly known as a gateway to further poverty, disease, poor education rates, slow infrastructural development, and civil instability.

Luckily, India has had galloping GDP growth in the face of global economic slouches, and has had political stability in nearly all provinces- while insurgency is still an issue on the border with Pakistan (Pokharel). A solution might be to use more of India's staggering GDP to subsidize and regulate not only grain production, but also the production and distribution of other crucial pieces of the Indian diet. But subsidies have been either too difficult to receive, both because of the sometimes impossible standards of the government programs that provide them, as well as the long, bureaucratic processes often involved in receiving them. The Food Security Bill in its current form has already been deemed too ambitious due to some of its glaring shortcomings, so a bill that aimed to provide more may not be politically feasible (Abreu).

To feed India's vast population of poor and undernourished and establish long term food security it will be necessary to farm large portions of land as intensively as possible, pushing the country to its agricultural capacity and potentially reducing the amount of food it exports, as it did from 2007-2011. The year-round harvest of certain water-intensive crops, such as rice and cotton, is taxing on the soil, and on the supply of water in many drought-prone areas of India (Belagali). Over exploitation of groundwater sources can, and will, make farming in the future more difficult; and with India's poor infrastructure, the process of groundwater depletion will happen more rapidly and have a greater impact on the already fragile state of food security ("INDIA").

The Indian government has yet to act on the threat of groundwater depletion. Its policies have been increasing the profitability of rice in the current market, which is good news for the average farmer trying to make ends meet, but bad for the environment and for the agricultural future of India. Some rural Indian states have actually taken away land from farmers or prevented the use of arable land because the states claim that those lands have not been used for proper agricultural purposes (Menon). Farmers argue that forcing them to use their land for farming crops that are not profitable is "sheer injustice", as it drives many of them further into poverty (Menon).

Rural farmers as individuals are rarely the spotlight of Indian politics. While the future of Indian agriculture is heavily discussed, farmers do not often receive help or recognition on any kind of personal level, and it is up to them to innovate to make ends meet and ensure that their production scales with the demand of a growing population. And when farmers make breakthroughs in fighting against diseases, against famines, and for clean drinking water, the solutions they come up with do not spread very far, due to poor communication and infrastructure. But when the government steps in to foster the innovations of individual rural farmers, like in the case of Arun Patari, a fish farmer, and his EUS prevention system for fish ponds, the efforts to bring those ideas to farmers across the nation are extremely successful (Das). Patari's solution to preventing the disease from killing the fish in his pond is cheap and feasible for many other fish farmers in India. By adding a mixture of kerosene and mustard oil to the pond water on a regular basis, the number of cases of the disease in his fish was heavily limited (Das). Indian government awarded him and many other innovators in rural agriculture for their innovation and moved to educate other farmers as to how to prevent similar issues.

The difficulties presented by the Indian Food Security will not be solved by one single initiative nor immediate future, nor will they be solved by granting favor to either the right to food or the ability of farmers to sustain them so long as the demand for programs like those implemented through the Food Security Bill remains as high as it is. A solution to this problem requires a longer process of untangling the laws that created this problem in the first place, and then working with smaller regions or communities to ensure that the needs of the most vulnerable and struggling small farms are met before crops and money are moved to larger government efforts. Where subsidizing and distribution of crops

fails, the Indian government could move to provide individuals in disaster or conflict stricken with the means to grow their own food. In the worst areas where farmers already are unable to run a stable business and many people are malnourished, the ability for people to grow their own food would reduce reliance on the inadequate relief systems currently in place, as well as teach rural Indians a trade they can employ in times of need, and during relative stability. And in places where only one or a few kinds of crops are grown and harvested each year, which usually is not enough to provide a healthy diet, increased crop rotation could lead to better diets and open up more trade possibilities to farmers who are already working at capacity.

The Millennium Development Goals, or MDGs, have become a centerpiece of the discussion of global development. In India, the eight goals laid out by the United Nations, which include the eradication of severe poverty and the suppression of certain diseases, are gradually being met, but not without hurdles or fears for the future of the MDGs. Professor Sudpto Mundle of India reports, "the MDGs have been very helpful in focusing international attention on the challenges of poverty reduction, and mobilizing more aid" (Mundle). This is particularly good news for India, who like China and other rapidly growing or emerging economies has benefitted greatly from globalization and has ease of access to aid from various sources, including the World Bank and private investors.

Poverty has been on a steady decline in India, which affects more than just the amount of money in people's pockets. Some dispute the numbers on exactly how much poverty has dropped over the last half-century because of growing wealth inequality. Despite explosive growth of the Indian middle class, the wealthiest of India have gotten much richer through globalization and massive industrial growth. Less poverty leads to better nutrition, better education, greater employment, and better infrastructure- all of which are the foundations of a strong and stable nation.

The MDG with which India is presently struggling the most is education, in which so far the Indian government has provided abundance of education, but of very poor quality and standards (Mundle). Compared to other countries like China and Singapore, India has failed to provide consistent education in reading and math, and the gender gap, while shrinking, is still present in enrollment and completion (Mundle).

The combating of diseases, another important MDG for India, has been proven successful in reducing the overall number of cases of malaria and tuberculosis (Mundle). Mortality rates however, have not wavered, and polio and HIV/AIDS have been on the rise in disaster zones (Mundle). Disease-specific treatments have not been successful in the past, due to a lack of infrastructure to support them. For example, many Indians do not have reliable access to rail or road to transport their goods. Instead, to combat all diseases, health, and sanitation as a whole, India needs to use the money previously used for disease or disaster-specific relief programs and expand its healthcare infrastructure everywhere, by educating people about health related issues such as STDs, building safe and clean hospitals, training doctors and nurses, and doing things as simple as maintaining and expanding existing communication and transportation infrastructure, like radio and rail. And where the government's budget falls short what is needed in these areas, India's large telecommunications and manufacturing companies could be incentivized to provide things like cell phones and water filters at low prices to those farmers and poor who need them. And while it is unlikely that they would be able to distribute them to the most remote areas, region-specific NGOs and local government institutions with experience in specific conflict areas or disaster zones would be able to distribute and educate people where national organizations could not.

The MDG aiming to ensure environmental sustainability has a strong connection to protection of safe drinking water, especially in India. By 2015, India aims to provide at least 84% of the population with safe drinking water, helping to establish even greater food security (Mundle, Swain).

India's efforts to achieve its MDGs are not only undermined by the displacement by frequent natural disasters, conflict in certain parts of the country, and deeply rooted corruption, all of which are things seemingly out of the control of the current Indian government. The Food Security Bill and similar initiatives that aim to provide grains to a large fraction of India's poor may have be proven successful in alleviating hunger come 2015, which will have a positive impact on other MDGs like education and disease. But as profitability of farming decreases and infrastructure continues to stagnate, the Food Security Bill will continue to inefficiently employ its ever more limited resources.

India faces a whole host of issues on its path to the MDG deadline. The nation must set realistic goals, not aim to be on the forefront of MDG achievement with a population totaling over a billion people, and learn to measure its success not with inflated statistics showing that early primary school enrollment is high when only a fraction of students meet the most basic educational standards, and use its best estimates to understand the severity of problems like malnutrition, all of which currently point to 40% of the nation's children going to bed hungry in 2015, which professor Mundle calls a "national shame" (Mundle). To open India's economy to the world while not forgetting the impoverished farmer will be a challenge, but one India is willing to accept. India must understand the mistakes it has made in the past regarding economic policy and corruption, but must maintain the ambition and hopefulness of the policymakers and the poor, who have only one thing in mind: a secure future.

India's extreme monsoon seasons, occasional famines, and frequent droughts put many farming communities in critical condition each year, resulting in many regions of India, particularly the areas surrounding the Ganges River, being deemed both short term and long term disaster sites (Parua). Nearly all rural areas in India that are afflicted with recurring natural disasters lack the infrastructure to support the recovery process themselves, but more importantly lack the infrastructure to support outside relief and aid, both from neighboring Indian sources, as well as relief from international organizations like the United Nations or the Red Cross. And while conflict has slowed significantly in the northern region of Kashmir, the condition of infrastructure on the border with Pakistan is amongst the worst in the nation, making it even more difficult to deliver help if it is ever needed in the future ("India"). Lurking corruption and excessive bureaucracy, resulting in miscommunication and disorganization, will consistently undermine relief efforts, food security, and financial security unless sweeping reforms are put into place. In order to alleviate the bureaucracy that farmers have to deal with both on a daily basis and in times of great need, specialized, localized government must deal with the specific needs of a region and its economic and agricultural problems. While a strong centralized government, favored by the current Indian administration, is an excellent tool for international trade and promoting large scale industrial growth, the average Indian cannot get sufficient aid soon enough from a system marred in excessive paperwork and poor communication.

While India's seemingly innumerable issues suck valuable resources from existing relief efforts, there are broader reform options available to maximize the effectiveness of aid and relief to both conflict zones and disaster sites; a state by state regulatory and communications system would be a step away from the federal and regional government policies that currently hurt the food security of small farmers and slow relief efforts. Instead of relying on a centralized system that is currently overwhelmed and preoccupied by both national and local affairs, the Indian farmer and aid recipient will instead be taken care of by an establishment that focuses solely on the issues of a certain region. By allowing each state to set its own rules for both agricultural policies, infrastructural development — both social and industrial, and emergency aid, the state will have a faster, more efficient response to any kind of disaster or civil unrest. The current system is flawed not in its intention, nor in its vision for the marginalized population of India, but in its execution, which is burdened by tangled bureaucracy, corruption, and a cycle of poverty and inadequate infrastructure.

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