Woodrow Wilson International Center for Scholars
Asia Program

HUNGER PAINS: Pakistan's Food Insecurity

Edited by Michael Kugelman and Robert M. Hathaway

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Available from :

Asia Program
Woodrow Wilson International Center for Scholars
One Woodrow Wilson Plaza
1300 Pennsylvania Avenue NW
Washington, DC 20004-3027

www.wilsoncenter.org

ISBN 1-933549-91-2

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Note: In April 2010, the name of Pakistan's Northwest Frontier Province was officially changed to Khyber Pakhtunkhwa. This name change occurred too late to be reflected in these pages.

Glossary

ADB	Asian Development Bank
AKRSP	Aga Khan Rural Support Program
AMP	Anjuman Mazareen-i Punjab (Society of Landless Peasants of Punjab)
CFO	Corporate Farming Ordinance
CPI	Consumer Price Index
FANA	Federally Administered Northern Area
FAO	Food and Agriculture Organization
FATA	Federally Administered Tribal Area
GDP	Gross domestic product
ha	Hectare
HDI	Human Development Indicator
IDP	Internally displaced person
IMF	International Monetary Fund
kg	Kilogram
KKH	Karakoram Highway
LIFDCs	Low-income food-deficit countries
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
mmt	Million metric ton
MNC	Multinational corporation

mt	Million tons
NA	Northern Areas
NWFP	Northwest Frontier Province (former name of the province of Khyber Pakhtunkhwa)
OECD	Organization for Economic Cooperation and Development
PARC	Pakistan Agricultural Research Council
Rs.	Pakistani rupees
t	Ton
t/ha	Ton per hectare
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAM	World Food Program Vulnerability Analysis and Mapping
WB	World Bank
WFP	World Food Program
WHO	World Health Organization
WPI	Wholesale Price Index
WTO	World Trade Organization

Pakistan's Food Insecurity: Roots, Ramifications, and Responses

Michael Kugelman

One day in early 2009, hundreds of unemployed Pakistanis converged on a bakery in the city of Faisalabad. They "hurled rocks through the windows and stormed the place, beating anyone who tried to stop them." The rioters flung the owner down a set of stairs, raided the cash register, and then grabbed—and ate—all the food they could find.[1]

Later in the year, on a September afternoon in Karachi, 20 impoverished women and girls were crushed to death in a stampede while attempting to secure free sacks of rice. Pakistani media described "heart-rending scenes of poor families retrieving bodies instead of sacks."[2] One editorial referred to the tragedy as "an indictment of the state itself—of its inability to provide for the most basic needs of its people."[3] Another warned that it "should be viewed as a frightening precursor of what will come to pass" if immediate action is not taken to address Pakistan's food insecurity.[4]

Several weeks later, a man arrived at the offices of the United Nations World Food Program (WFP) in Islamabad and asked to use the restroom. After entering the office lobby, he blew himself up, killing five employees. The UN promptly suspended operations across the entire country.

These three incidents paint a disturbing picture of food insecurity in Pakistan— one that demonstrates how obtaining and supplying food have become not only difficult, but also downright dangerous. They also underscore the potential for further violence and instability in Pakistan unless the nation acts expeditiously to ensure that no Pakistani is denied the basic right to adequate food.

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IN THE GRIPS OF THE GLOBAL FOOD CRISIS

Food security in Pakistan has been under constant threat during the last few years, a period coinciding with a global food crisis that peaked in 2008. That year, when world food prices reached their highest levels since the 1970s, Pakistan's food inflation registered as high as 34 percent.[5] Widely cited WFP data from 2008 concluded that 77 million Pakistanis—nearly half the country's total population—were going hungry, a 28 percent increase from the 60 million in March 2007. Ninety-five of Pakistan's 121 districts, according to the WFP, faced hunger and malnutrition-related disease. Predictably, this widespread food insecurity triggered civil unrest in many urban areas, and Pakistan's army was dispatched to guard grain supplies.

During the height of the global food crisis, food suppliers in Pakistan struggled as much as consumers. Farmers were left reeling by sky-high fertilizer costs; the price of DAP (one of the most coveted high-yield fertilizer brands) increased by 150-300 percent in Pakistan, despite being heavily subsidized by the government. Grain farmers were left with the unenviable choice of either reducing their use of DAP or switching to less profitable vegetable crops that required less fertilizer.[6]

As high costs, rising hunger, riots, and other effects of the global food crisis pummeled Pakistan, commentators began issuing dire warnings about the societal implications of food insecurity. With the WFP estimating that the crisis had set back progress in poverty reduction by seven years, talk abounded of "a new class of poor" being created in the country.[7] Media reports declared that "hunger in Pakistan is no longer a silent killer," and told tragic tales of impoverished men and women jumping in front of trains, setting themselves on fire, and murdering their children because of an inability to provide food for their families.[8] Hari Ram Lohana, a prominent food economist in Pakistan, even cautioned that food shortages could "endanger our sovereignty and the unity of our federation."[9]

LINGERING HUNGER PAINS

As 2008 yielded to 2009, the global food crisis subsided. World food prices, while still high relative to pre-crisis levels, stabilized considerably.

Yet Pakistan's food woes have continued.

In February 2010, according to figures from the UN Food and Agriculture Organization (FAO), the prices of wheat and rice—Pakistan's two chief staple crops—were 30 to 50 percent higher than before the global food crisis, and on the increase.[10] WFP data from early 2010 reported that the prices of essential staples in Pakistan were nearly 40 percent higher than five-year cumulative averages.[11] The costs of sugar and cooking oil also escalated in the initial months of 2010.

Also in early 2010, Pakistan's food inflation registered at about 15 percent—a far cry from the 30 percent-plus figures several years earlier, but still of great concern to the country's economists, who noted that the Wholesale Price Index (WPI, a predictor of future price movements) stood at almost 20 percent. Such "soaring WPI-based inflation," they said, portends further spikes in retail prices of key commodities.[12]

Weather, resource shortages, and conflict are exacerbating food insecurity in Pakistan. Farmers and government authorities blamed drought-like conditions for reduced crop yields in late 2009 and early 2010; in the Swabi district of Northwest Frontier Province (NWFP), one farmer said his maize crop was "slashed" by 50 percent.[13] Rain-fed wheat-cropping areas have been hit particularly hard, yet even the yields of irrigated areas are at risk. This is because a lack of rain prevents soils—even those that are irrigated—from becoming sufficiently water-saturated to enable productivity-enhancing tools such as pesticides and fertilizers to function properly. In early 2010, Pakistan's minister for food and agriculture, Nazar Mohammad Gondal, admitted that because of recurrent dry spells, "only prayers can avert low yield of wheat this year."[14]

Meanwhile, Pakistan is burdened by devastating water shortages. The country's per capita water availability ranks among Asia's lowest, and is lower than that of many African nations. At least 90 percent of Pakistan's dwindling water supplies are allocated to agriculture, yet inefficient irrigation and poor drainage have produced epidemics of waterlogging and soil salinity across the countryside. As a result, "vast expanses" of farmland fail to produce successful harvests.[15] Additionally, Pakistan is suffering through a chronic energy crisis with frequent

electricity outages; these power failures undermine the effectiveness of energy-dependent agricultural technologies.

Finally, Pakistani military operations against militancy displaced about three million people from NWFP and the Federally Administered Tribal Areas (FATA) in 2009; those uprooted from the district of Swat were forced to depart in the middle of the harvest season. About 1.7 million of these internally displaced persons (IDPs) have started returning home, yet they continue to struggle to obtain food. In March 2010, an Al Jazeera English reporter travelled to Swat and found "simmering discontent" among recent returnees. They were forced to wait in long lines to open up bank accounts and receive ATM cards that would enable them to withdraw a paltry $12 in government funding per month—sufficient only for a bag of flour and four kilograms of low-quality rice, and "not enough to feed a small family for four days."[16] Meanwhile, more than a million Pakistanis remain displaced—including 250,000 from the conflict-riven tribal agency of Bajaur. Little wonder that in February 2010, the FAO concluded that the country's IDP crisis was causing "severe localized food insecurity."[17] Yet as of mid-April 2010, only about 20 percent of the nearly $540 million international appeal to assist Pakistan's IDPs had been fulfilled.

From small farmers to the urban masses and IDPs, millions of Pakistanis are affected by the scourge of food insecurity—particularly the 77 million going hungry and the 36 percent of the population that Islamabad believes are afflicted by poverty.[18] In June 2009, the Woodrow Wilson International Center for Scholars, based in Washington, D.C., and the Karachi-based Fellowship Fund for Pakistan held a full-day conference on Pakistan's food insecurity. The event focused on the magnitude and manifestations of the problem; identified its various causes; and offered ways forward. Each of the papers printed in this volume was originally presented at this conference.

KING WHEAT

In the opening essay, **Zafar Altaf** of Islamabad's Pakistan Agricultural Research Council (PARC) provides a broad overview of food security in Pakistan, with emphasis on the agricultural sector. In the immediate

years following independence, he writes, the country's crop mix emphasized coarse grains. However, in the early 1960s, wheat became Pakistan's chief staple, and has remained so to this day. Altaf is deeply critical of wheat's dominant presence in Pakistan's agriculture. This emphasis on wheat, he argues, prevents Pakistan from exploiting the country's 13 ecological zones and 27 sub-ecological zones, which together offer "a very exciting arena for experimentation and state-of-the-art agriculture." Furthermore, it defies ground realities in Pakistan: Coarse grains (such as sorghum and millet) are "urgent requirements" of local populations in underdeveloped parts of Baluchistan province and NWFP. He adds that a number of coarse grains require relatively little water to cultivate, and contain more nutrients than do wheat.

Altaf also highlights the wretched plight of Pakistan's small farmers, who make up a great majority of the country's farming communities (93 percent of Pakistan's farmers own less than four hectares of land). He writes that the farming incomes of smallholders across Punjab and Sindh provinces cannot keep up with necessary expenditures, and that these farmers constantly face spending deficits. Most of these farmers use more than two-thirds of their expenses on food; some in Sindh spend as much as 87 percent. Predictably, poverty is widespread among smallholders in Pakistan. Altaf provides data that depict poverty levels across all of Pakistan's provinces and cropping zones. Non-wheat zones have the highest levels of poverty—nearly 70 percent in the desert areas of Punjab and 62 percent in the horticultural zones of Baluchistan. Yet even some areas of wheat cultivation are poor, with nearly 60 percent poverty in parts of Sindh.

Sohail Jehangir Malik, of the Islamabad-based consulting firm Innovative Development Strategies (Pvt.) Ltd Pakistan, highlights the food supply challenges for a country where wheat accounts for more than 55 percent of total caloric consumption. One major problem is that spikes in wheat prices impose hardships on an overwhelming majority of the population. This is because, despite its being the country's chief staple, only 26 percent of Pakistani households are wheat producers. Conversely, 97 percent of Pakistani households are wheat consumers, and therefore dependent on wheat markets and vulnerable to rising prices. Malik notes that even in the countryside (home to two-thirds of Pakistan's population), almost 60 percent of households are landless and

more than 50 percent of the poor come from non-farm households—meaning that they all consume, rather than produce, wheat. As a result, "while an increase in wheat price benefits only one-quarter of the households in the country, it affects nearly all consumers adversely."

Malik also highlights the questionable wheat policies Islamabad adapted in 2007—policies that many observers believe contributed to soaring food inflation in Pakistan. That year, the government, anticipating a bumper wheat crop, decided to export some of its wheat in order to take advantage of rising international grain costs. Malik explains that these increasing global prices led to "increased outbound smuggling" of wheat supplies from Pakistan. Such activities caused serious food shortages in many areas of the country. Then, to make matters worse, Islamabad's bumper wheat crop prediction ended up being wrong. As a result, Pakistan had to resort to "large-scale imports" to make up for its losses—and was now obliged to pay more than $300 per ton, when it had earlier exported the crop at $200 per ton.

THE GOVERNANCE FACTOR

Islamabad claims to have learned its lesson from this debacle. In March 2010, Gondal, the food and agriculture minister, announced that any decisions on exporting surplus wheat would be made only after a "final assessment report" of the current crop had been prepared, in order to avoid "the faulty and rash decisions" of the previous government.[19]

Nonetheless, bad management of the wheat economy and poor stewardship of the agricultural economy as a whole have arguably continued with the government that took over in 2008. Many observers contend that smuggling has persisted (one estimate concludes that Pakistan is losing $2 billion a year through the smuggling of wheat to Afghanistan), while others allege that politically connected flour and sugar millers are hoarding supplies to drive up prices.[20]

Such debate highlights the importance of good governance in the context of food security: when it is absent, food security suffers. Pakistan is by no means hopelessly corrupt; it ranked 139th out of 180 countries in Transparency International's 2009 Corruption Perceptions Index. However, the country's governments consistently fail to provide services and goods—particularly food and water—in a fair and equitable man-

ner, and they tend to favor wealthy, landed, and politically connected interests over those of the most needy. Corruption plays a major role in this context.

Pakistan's agricultural sector is a frequent victim of corruption. For example, in September 2009, government authorities announced the "Benazir Tractor Scheme," billed as a computerized lottery that would award thousands of free tractors to randomly selected small farmers across Pakistan. However, among the "winners" were those owning thousands of acres of land (to be eligible for the drawing, only a maximum of 25 acres could be owned), including, suspiciously, 48 family members of a single parliamentarian. As an editorial in one Pakistani daily put it, "A number of powerful individuals…conspired together to rob poor people of an opportunity to better themselves."[21]

Altaf harshly criticizes the poor governance in Pakistan's agricultural sector. He describes how powerful farmers "hog" water that should be going to smallholders; how "a lack of knowledge of equity" translates to rampant resource misallocations; and how industry "mafias" forestall economic liberalization by monopolizing new products and demanding government subsidies. Meanwhile, Malik laments the lack of any "serious agriculture policy institution worth the name left in the country" (a reflection of the "official neglect" of Pakistan's agricultural sector). He also writes of the "schizophrenia" that afflicts policymakers over the role of markets, explaining how Pakistan takes small steps toward agricultural market liberalization before reversing itself. He attributes this "backsliding" to a "paranoia" about losing control over the ability to provide food security. As a result, "much-needed" wheat policy reforms do not occur, and wheat markets remain inefficient.

According to **Roshan Malik**, the combination of poor governance, corruption, and food insecurity has troubling implications for Pakistan's overall security situation. In his essay, Malik, of Iowa State University, argues that the areas of Pakistan with the worst governance indicators tend to be not just the most food-insecure, but also the most violent and conflict-ridden. For example, he cites a 2003 study that determined that 38 districts in Pakistan were extremely food-insecure. More than half lacked government effectiveness, the rule of law, and political stability (indicators used by the World Bank to measure governance). These 38 districts include all of those in FATA, 11 in NWFP, and half

of Baluchistan's—all volatile areas that in many cases have been overrun by Taliban forces in recent years. Malik also points out that of the 36 nations classified by the FAO as food-insecure, 30 appear in *Foreign Policy* magazine's 2008 Failed States Index—and Pakistan is one of them.

FOOD AND SOCIETY

Roshan Malik writes that "successive governments" in Pakistan have "neglected" the social dimensions of food insecurity, with this disregard leading to "dire consequences" for human development and law and order in the country.

Abid Qaiyum Suleri, of the Sustainable Development Policy Institute in Islamabad, takes a close look at these social dimensions. He blames Pakistan's legacy of military rule for the neglect of society's basic needs: The "huge influence of the armed forces" has ensured that Pakistan's national security is emphasized over individual security, and public spending is deeply skewed against social upliftment programs. "Public sector development expenditures always face the brunt of fiscal constraints," Suleri writes, because policymakers refuse to reduce spending on defense, debt repayment, or public sector administration. His point is exemplified by Islamabad's decision in January 2010 to divert as much as 30 percent ($2 billion) of the social sector's total budgetary allocation to security expenditures—a "massive cut" at a time when "millions are suffering agonies on account of sky-high food inflation."[22]

According to Suleri, Pakistani society often responds to the "high prevalence" of food insecurity by resorting to what he calls "extraordinary behaviors"—committing suicide, working as bonded labor, selling or killing dependents, and engaging in "antisocial" activities. Others succumb to the inducements of militants. Many Pakistani Taliban fighters, Suleri notes, are not unrepentant Islamic hardliners, but instead impoverished young people "outraged by chronic hunger" and by the government's inability to provide services. Suleri writes of a "mullah-marxist nexus"—religious forces tapping into the "anti-elite" sentiments of poor, young, food-insecure Pakistanis in order to recruit new suicide bombers. Others in society are drawn to the free meals offered by religious shrines and madrasas. Suleri is careful to point out

that most of these institutions are peaceful—though "quite a few" are run by religious hardliners.

Suleri believes "it is an established fact" that food insecurity sparks violence and conflict. Echoing Roshan Malik, he notes that Pakistan's most volatile and conflict-torn areas are also the most food-insecure. He refers to the Waziristans and other parts of FATA and NWFP, but also to Baluchistan's Dera Bugti—the second-most food-insecure district in Pakistan, and home to an anti-Islamabad insurgency fuelled by grievances about resource misallocations. Clearly, Suleri concludes, "fighting hunger is not merely charity work." He advocates for a paradigm shift in which "individual hunger is perceived as a national security threat." Such a shift, he hopes, would allow public spending priorities to be adjusted, so that more monies could be freed up to combat food insecurity.

NUTRITION SECURITY

As glum as these assessments are, they do not capture the full extent of Pakistan's food-related suffering. This is because they do not address nutrition security. According to **Gautam Hazarika** of the University of Texas at Brownsville, one must always distinguish food security from nutrition security. The former, normally measured purely in caloric terms, is less encompassing than the latter, which also takes into account access to mineral nutrients and to adequate healthcare. Because calorically high food is not necessarily nutritious, explains Hazarika, one who is food-secure may still be nutrition-insecure. Additionally, nutrients typically consumed by healthy people are lost when infection or other illnesses set in—so the mere availability of nutrients does not guarantee proper nutrition security, especially if available healthcare services are insufficient.

Malnutrition is a serious problem in Pakistan. According to data presented in this book, the number of malnourished Pakistanis soared from 24 million in the early 1990s to 45 million in 2008. Altaf's essay highlights the results of a 2009 survey that PARC conducted among smallholders and the landless across Pakistan to ascertain whether internationally recommended nutritional needs were being met. While protein intake was found to exceed international standards, the survey found considerable shortages in micronutrient consumption. In desert

areas, calcium consumption was determined to be 48 percent below international standards, while Vitamin A consumption across Pakistan's rural areas was a whopping 85 percent short of global norms—a reality Altaf attributes to the high cost of Vitamin A-rich foods. Other experts in Pakistan report high levels of Vitamin D deficiency as well, owing to the relatively small number of food items (fish, egg yolk, and cod liver) rich in this mineral.[23]

UNICEF has estimated that poor nutrition contributes to about half of the child deaths in Pakistan. Child nutrition insecurity is in fact a major concern throughout South Asia; Hazarika points out that 41 percent of the region's children (ages zero to five) are malnourished—the highest rate in the world. In sub-Saharan Africa—a region no more economically developed than South Asia—this figure is only 27 percent. What accounts for this discrepancy? According to Hazarika, the reason is the low status of South Asian women. He explains that the incidence of low birth weight, "a faithful predictor" of child malnutrition, is "markedly higher" in South Asia than in sub-Saharan Africa, and low birth weight is linked to poor maternal health and nutrition. "Women's well-being plays a critical role in children's nutrition security by way of its effect on prenatal nutrition," he writes. Postnatal nutrition is also affected by women's low status, because it is difficult for "poor, unhealthy, and oppressed women" to provide quality childcare, including proper nutrition, to their offspring.

Hazarika argues that in Pakistan, women's low status is tied to their low bargaining power. By broadening this power—achievable by ensuring women have incomes and education levels on a par with their spouses—child malnutrition can be combated. He therefore advocates for a broadening of women's earning opportunities in Pakistan (particularly through microfinancing), and for more of a governmental emphasis on female education. Finally, given that Pakistani parents generally favor their sons over their daughters, leading to poorer medical care and greater nutrition insecurity for girls, Hazarika argues for "concerted efforts" by the government and nongovernmental organizations to address "this very serious inequity."

FOOD FOLLIES: ISLAMABAD'S RESPONSE

What has been done to address Pakistan's food insecurity? Islamabad has generally focused on the production/supply aspects of the problem, always vowing to increase crop yields whenever the country is convulsed by food shortages or price hikes. Illustrative of this strategy was Gondal's announcement in October 2009 that the government would not only increase its wheat production target, but would also adapt a new slogan of "produce more." He urged industrialists and bankers to empower farmers with more money and better loans, all in order to boost production.[24] Such supply-side strategies are eerily reminiscent of Islamabad's response to the country's water crisis. Water policy debates mainly revolve around the need to generate additional water supply by constructing more large dams and reservoirs.

As this volume's contributors underscore repeatedly, the production aspect is only one small component of food security—and yet there are rarely policy debates in Pakistan that incorporate considerations about other crucial elements such as access and distribution. As Roshan Malik puts it, "the policymaking thrust is more on enhancing production to fulfill national demand; food security has rarely been seen as an access issue."

Sohail Malik presents a scathing critique of Islamabad's responses to Pakistan's food woes. He writes that the government's declarations about food security amount to the same stale pronouncements, and that "nearly every statement on agriculture policy" issued by the Food and Agriculture Ministry since 1987 has focused on the same few themes. Even the interventions proposed by the Prime Minister's Task Force on Food Security in 2009 contained nothing new. While "well-articulated," Islamabad's statements on food security lack details about how to produce policy changes. As a result, few substantive measures are ever implemented.

Sohail Malik attributes the absence of true reform to "disconnects" between government institutions. The Food and Agriculture Ministry is "completely dependent" on the Finance Ministry and Planning Commission for resources, yet these two latter institutions lack the capacity to appreciate the importance of agricultural resources—and so al-

locations to agriculture suffer. Meanwhile, agriculture policy is made by the federal government but implemented by provincial authorities—and the two sides "rarely talk to each other." Even talk of reform is a charade, he argues. Officials give "lip service" to reform only to fulfill conditions imposed by lending agencies, and have little faith in the "efficacy" of the reform process. Furthermore, the capacity for agricultural data-gathering and analysis is poor, which further undermines agricultural policymaking and implementation.

Malik also laments how little attention is paid to the "entrenched institutions" that govern Pakistan's wheat sector, and that are deeply resistant to change. Such structural concerns form the basis of **Saadia Toor**'s essay. Toor, of the College of Staten Island, declares that present-day food insecurity "is not episodic or short-term—it is chronic and structural, and must be addressed in those terms." She argues that stock responses to Pakistan's food insecurity—calling for the improvement of storage facilities, transportation, and irrigation systems, and generally demanding that more attention be accorded to the neglected agricultural sector—will ultimately be meaningless unless "the underlying structural causes" are dealt with.

Toor identifies domestic and international dimensions of these structural causes. On the domestic level, she singles out Pakistan's "highly skewed" distribution of land ownership. Most Pakistani households own little or no land (in Punjab and Sindh, she writes, only 0.05 percent of households hold more than two hectares of land), while a small minority holds a considerable portion of all privately owned land in Pakistan (and Pakistan's military, she notes, is the country's biggest landowner). Toor argues that landlessness has a deleterious impact on food security. She cites research showing that better access to land cheapens the relative price of food and produces better nutritional outcomes. Additionally, Pakistan's landless are often poor (they account for 70 percent of the country's rural poor), and poverty is closely associated with food insecurity. Addressing Pakistan's food insecurity will require "radical" land distribution reform, according to Toor. However, demands for reform are repeatedly resisted by "the corporate interests of the ruling classes"; Islamabad has in fact announced that the land reform issue is already "resolved." The only remaining option, she concludes, is to build "a groundswell of popular pressure from

below," led by small farmers and landless peasants "living on the edge of survival."

Toor posits that the international dimensions of the structural causes of Pakistan's food insecurity are seen in the country's deep dependence on international financial institutions, particularly the World Bank and International Monetary Fund (IMF). She contends that it was pressure from these groups that compelled Islamabad to export its nonexistent wheat surplus when world grain prices were increasing in 2007. Toor also holds these organizations responsible for Pakistan's rising poverty. She writes that poverty levels actually fell throughout the 1970s and 1980s, but began increasing in the 1990s. This is because in the late 1980s, Pakistan began implementing IMF-led structural adjustment packages, which impose strict austerity measures on public spending. Welfare provisions, including food subsidies, are among "the first things to go."

Toor also denounces Islamabad's eagerness to open up its agricultural land to foreign countries and agribusiness investors, making vast swaths of farmland available through long-term leases. Under the terms of these deals, she argues, crops harvested in Pakistan by foreign investors are whisked out of Pakistan and exported back to the investors' home countries—in effect serving investing countries' food security needs while undermining Pakistan's.

PAKISTAN'S FOOD SECURITY AND THE INTERNATIONAL COMMUNITY

Media coverage about these farmland transactions is often sketchy, and many deals described as finalized are in fact still being negotiated. Nonetheless, in early 2010, Pakistani media were reporting that Islamabad was prepared to lease out nine million hectares of farmland.[25] To get a sense of the scale of this offer, recall Altaf's assertion that 93 percent of Pakistani farmers own fewer than four hectares of land.

Pakistan's farmland firesale reflects a global trend emerging from the aftermath of the world food crisis: Spooked by high global food prices and volatile world commodities markets, food-importing countries in East Asia and the Persian Gulf—along with agribusiness firms from the West—are on the hunt for developing world farmland (and just as importantly, the water that sustains it) across much of Africa, Latin America,

and Southeast Asia.[26] Many experts worry that international farmland deals—which emphasize large-scale, chemically intensive agricultural production—could jeopardize food security across the developing world by displacing smallholders from their farmland; by preventing landless communities from accessing sources of wild food and medicines; by degrading arable soil; and by exhausting indigenous water resources.

The potential food security implications of this global race for farmland are particularly troubling for Pakistan, a country already estimated to be losing a hectare of "good agricultural land" every 20 minutes to soil erosion.[27] The land deals would pose a formidable threat to Pakistan's existing water supplies; few countries whose land is being targeted have as little water as Pakistan. Additionally, Islamabad has exempted foreign farmland investors from national export bans imposed in Pakistan during food emergencies—meaning that during periods of famine or war, these international investors could continue to spirit freshly grown crops out of Pakistan unhindered. Finally, Islamabad's aggressive courting of foreign investors (it has staged "farmland road shows" across the Gulf region and even proposed a 100,000-strong security force to protect investor holdings) suggests that these deals could be concluded in abundance across Pakistan, with the potential for country-wide mass displacements that could gravely imperil rural Pakistanis' access to food supplies.[28]

Yet even while decried by Toor and other specialists, these deals are applauded by some experts for their potential to bring much-needed international resources to Pakistan's underserved and underfunded agricultural sector. Indeed, Pakistan's government describes these farmland accords as a prime opportunity to acquire much-needed agricultural capital, high-yield agricultural technologies, and agricultural know-how from the international community. So the question invariably arises: What should be the international community's role in contributing to Pakistan's food security?

One important such role is to provide immediate food aid. **Kaiser Bengali** (a former consultant to the World Food Program in Pakistan) and **Allan Jury** (the director of the WFP's U.S. relations office) describe the WFP's activities in Pakistan, where the agency's assistance currently reaches eight million people. In the midst of the global food crisis, the agency launched a $71 million program to bring 86,295 tons of food to the 20 most food-insecure districts of NWFP, Baluchistan, and Sindh.

Significantly, this assistance package was distributed through schools and health centers. The WFP hoped that doing this would help retain primary school students during a period of high drop-out rates, as well as improve the nutritional status of malnourished children and pregnant and lactating women.

Looking ahead, the WFP hopes to continue its emphasis on food aid in educational settings, and expects 450,000 children in 5,400 primary schools to be direct recipients of the organization's assistance. Using schools as a "platform" for food aid distribution has many advantages, write Bengali and Jury, including support for basic education and incentives for parents to send their daughters to school. Still, the authors acknowledge that the WFP's food aid is simply a short-term measure "to ease the immediate pressures" of the most food-insecure. Unless Pakistan also makes greater efforts toward resolving conflict and governance challenges and toward investing in long-term development projects and agricultural productivity activities, food insecurity will remain "a serious obstacle" to social stability and development in Pakistan.

The final contribution in this collection comes from **Kenneth Iain MacDonald** of the University of Toronto, and serves as a warning to development organizations both internationally and in Pakistan. MacDonald's essay focuses on the subsistence agricultural systems of the harsh, mountainous Baltistan region of Pakistan's Northern Areas. He argues that development specialists gravely misunderstand agricultural realities there, and that their farming projects in Baltistan threaten the very food security they are meant to improve.

Baltistan's political marginalization and geographic isolation have obliged the region to be agriculturally self-sufficient. According to MacDonald, Baltistan has done this remarkably well, repeatedly attaining some of the world's highest temperate crop yields and maintaining strong levels of food security. He attributes this success to "risk-minimizing" farming methods common to mountainous regions, such as the simultaneous planting of different varieties of the same crop. Some varieties are more early-maturing than others, thereby giving farmers the flexibility to set aside or immediately harvest crops in anticipation of floods, frosts, or other events common to an area with volatile weather patterns. However, according to MacDonald, development organizations—he particularly singles out the well-regarded Aga Khan Rural

Support Program (AKRSP)—display great ignorance toward the region's agriculture, and simplistically insist on the primacy of monocropping and high-yield outcomes to the detriment of all other considerations.

He writes, for example, how AKRSP subjected a new, "allegedly high-yielding" variety of wheat to a series of brief field tests in a single Baltistan market town. Immediately satisfied with the high-yield results, AKRSP began introducing the crop across the entire region—an outsider's attempt to replace a "time-tested" system of polyvarietal cropping with a new monocropping strategy. Meanwhile, local farmers—who, unlike the AKRSP, envisioned the crop not as a stand-alone input, but as a possible addition to the polyvarietal mix—set up their own field tests, which were much more extensive and comprehensive. Villagers concluded that the crop would not withstand strong winds, would suffer damage from frost, and did not even taste well when baked. The result was predictable: "communications breakdowns, serious misunderstandings, and conflicts" between AKRSP and the subsistence farming communities. According to MacDonald, AKRSP also failed to account for the dangers of transitioning to monocropping in Baltistan. Indeed, he concludes, such "uniformity of production" could dramatically undercut crop outputs and trigger "serious environmental and social impacts," including degradation, poverty, hunger, "and even famine."

RECOMMENDATIONS

MacDonald contends that AKRSP has not learned from its experiences in Baltistan, despite a 20-plus-year presence in the region. To be fair, as MacDonald himself notes, from an agroeconomic standpoint Baltistan is an anomaly in Pakistan—security of land tenure is "reasonably strong," and landlessness "is virtually absent." So the efforts of AKRSP and other development organizations may very well have better results elsewhere in Pakistan. Indeed, many of this volume's contributors agree that development interventions are desperately needed across the country's marginalized and impoverished regions. Clearly, different areas of Pakistan have different problems and require different types of solutions.

Nonetheless, as expressed in these pages, there is a certain pattern that extends throughout the entire food security landscape of Pakistan—from the AKRSP's field offices in Baltistan to the halls of government

ministries in Islamabad: The same mistakes are repeated, with corrective measures never taken.

The authors in this volume propose a range of such corrective measures. Some of the major recommendations are presented below, not for the sake of endorsement, but rather to stimulate more discussion on how best to move forward.

1. *Declare hunger a national security issue.* Pakistan has always emphasized national security priorities over individual security. As a result, public funding for defense dwarfs what is allocated to the social sector, and government food assistance programs suffer. Yet individual food insecurity is tied to Pakistan's national security. Some of the most food-insecure regions of Pakistan lie in the country's militant hotbeds, and the ranks of the poor and food-insecure are prime targets for extremist recruitment. So instead of couching policy debates on hunger in the language of humanitarianism and charity, policymakers should link hunger to defense. Pakistan should elevate the threat of hunger to one of national security, in order to increase the amount of public spending earmarked for food provision.

   However, depicting hunger as a national security issue must not overshadow the Pakistani state's basic (and constitutional) obligation to feed its people. Islamabad's efforts to improve food security in conflict zones should be justified not only by the strategic need to reduce militancy, but also by the fundamental need to provide for its masses—especially those whose homes and livelihoods have been destroyed (sometimes by the state itself).

2. *Revitalize the agricultural sector.* While urban industries, resources, and infrastructure have grown extensively in recent decades, the hinterland has remained relatively underdeveloped. As a result, agriculture in Pakistan has largely been neglected. To jumpstart agriculture and consequently improve food security, rural institutions must be strengthened so that they can dispense basic services; roads must be constructed; employment opportunities

must be generated; and long-term strategies for increased, sustained agricultural productivity must be devised.

At the same time, national and international efforts to strengthen agriculture must be careful not to undermine self-sustaining agricultural systems; a proper balance should be struck between making interventions and respecting existing arrangements.

3. *Enlarge the food security policy framework*. Food security is dependent not just on the production and supply of food, but also (and especially) on access to food. Myriad factors—from poverty to poor roads—affect access to food, and all should be addressed in policy debates on food security. Policy discussions about food security should also incorporate nutrition security, because adequate caloric consumption (a core measure of food security) does not always ensure proper nutrition.

   Furthermore, food security should be thought of less as a technocratic concept, divorced from the difficult realities of Pakistanis' everyday lives, and more as an issue of immediate concern for millions of people. Therefore, food security policies must take into account considerations about education, healthcare, and other critical aspects of human development. In order to craft effective policies that improve food security for poor households and individuals, Islamabad should look to the food security-related international covenants it has signed for guidance (these include the Universal Declaration of Human Rights and the Convention on the Rights of the Child, which both emphasize the right to food).

4. *Reconsider the existing crop mix…* Wheat is Pakistan's undisputed staple, yet some coarser grains require less water and are more nutritious. Efforts should therefore be made to increase the production of crops such as sorghum and millet. However, areas for wheat cultivation should be expanded as well. The locus of wheat production is in Punjab, yet some underutilized and impoverished parts of Pakistan—such as the Chagai district of Baluchistan (an area larger than the entire NWFP)—

also boast adequate land and water for wheat production.

…And think products, not commodities. Instead of just selling crops as commodities on world markets, Pakistan should focus as well on developing local markets for the products of these commodities—there are nearly 20 products for maize, and thousands for hemp. This would be a particular boon for Pakistan's rural poor, who could serve as the entrepreneurial forces behind this new product development.

5. *Understand the regional dimensions of Pakistan's food insecurity.* The western and southeastern parts of Pakistan are poorer, hungrier, and less developed than the eastern areas of the country. Punjab's total food grain production is about seven times that of NWFP and 18 times that of Baluchistan. Disparities are similar in the context of irrigation—the size of Punjab's irrigated area is 16 times that of NWFP and 11 times that of Baluchistan. Additionally, average national road density is considerably higher in Punjab than in other provinces. These regional inequalities undermine Pakistan's status as a federation, in which each provincial unit is meant to enjoy equal rights.

6. *Be mindful of the gendered aspects of food insecurity in Pakistan.* The negative effects of food insecurity hit Pakistani women and girls particularly hard. Pakistani females are generally less educated than males, which compromises their ability to learn about proper nutrition for themselves and their children. Pakistani parents often favor their sons over their daughters, and place more importance on the educational opportunities and health care of their sons. This causes poor female school attendance—a particularly troubling trend given that significant portions of international food aid in Pakistan are channeled through schools. Additionally, poverty and landlessness are synonymous with food insecurity, and Pakistani women are disproportionately poor (though they do the majority of the country's agricultural work) and hold fewer land assets than men. Improved women's status is a prerequisite for better food security in Pakistan.

7. *Strengthen governance*. Food security is always threatened in environments of poor governance and corruption, and Pakistan suffers considerably from both. At best, Pakistan's governance problems ensure a lack of agricultural reform. At worst, they could push food-insecure Pakistanis toward militants who provide the basic services that Islamabad does not, and spawn new generations of extremists.

8. *Address the information shortage*s. Information and data about food security and agriculture—and the capacity to undertake analyses of these topics—are scarce in Pakistan. There is little available information on what works and what does not, and on how the better strategies can be replicated. Additionally, farmers have few resources at their disposal to help them understand more about farming or to assist them in resolving problems. At the same time, development organizations operating in Pakistan often lack sufficient knowledge about self-sustaining agricultural systems and the social structures that undergird them.

9. *Seize the advantages offered by schools to help boost food security*. Using schools as staging grounds for food aid distribution gives parents powerful incentives to keep sending their children—particularly girls—to school. Schools also provide a mechanism by which hundreds of thousands of children can bring "take home" rations to their families, hence boosting food security on household levels.

10. *Acknowledge the limits of food aid*. The importance of providing national and international food assistance to Pakistanis cannot be overstated, and, given the urgency of the IDP crisis, such aid must be intensified. Food aid can also lessen the conditions of deprivation that fuel militancy. However, food assistance must be understood as a short-term measure that offers no substitute for more long-term agricultural amelioration projects and employment programs in Pakistan's most food-insecure areas. Such efforts are difficult to implement in conflict

environments, so food aid must be accompanied not only by development projects, but also by greater attempts to improve Pakistan's security climate.

11. *Guard against exploitative international investment in Pakistan's farmland.* Pakistan is offering to lease out great expanses of farmland to foreign investors. Though these transactions are being negotiated in notoriously opaque environments, it is imperative that Pakistan's legislature and judiciary monitor such deals. Islamabad should ensure that foreign leasings of Pakistani farmland allow sufficient amounts of harvested crops to remain in Pakistan. Food security in Pakistan should not be sacrificed simply to enhance the food security of those countries laying claim to Pakistan's soil.

12. *Focus on microlevel interventions.* Macrolevel agricultural development projects (many of them orchestrated by international donors) are often formulated and implemented from far away and hence disconnected from ground realities. By contrast, microapproaches are devised and executed on grassroots levels—a crucial approach in a nation like Pakistan, where nearly 95 percent of farmers are smallholders. The successful microprojects in agriculture are those that make every possible effort to allocate assets—particularly land—to women, who perform most of Pakistan's agricultural work.

13. *Acknowledge and tackle the structural obstacles.* While strengthening agricultural institutions, improving infrastructure and storage facilities, and injecting capital into a stagnant farming sector are all necessary steps for making Pakistanis more food-secure, they will all fail if Pakistan is unwilling to recognize and deal with the country's structural impediments to better food security. Profound poverty, widespread landlessness, entrenched political interests in agricultural industries, and a deep dependence on international lending agencies deprive Pakistan of the ability to ensure that those with the most abiding need for food do in fact receive it.

PAKISTAN'S FOOD SECURITY FUTURE

Some of these recommendations will be easier than others to implement successfully. One simple way to address information shortages is for the Food and Agriculture Ministry to update its website; as of April 2010, the site's most recent material dated from October 2008. Conversely, tackling the structural obstacles arguably constitutes the most daunting task; some would assert that given the influence of Pakistan's military and wealthy large landowners, attaining this objective may well be impossible.

Nonetheless, there are indications that some of the above recommendations are already being acted upon. In November 2009, Islamabad announced it would be receiving an $18 million loan from the International Fund for Agricultural Development to support a Pakistani farming project—one that aims "to support the formation of special interest groups of women and the landless," to promote their participation in community development, and to improve their access to financial resources.[29] Some of this volume's contributors would applaud such an initiative for targeting the country's most vulnerable, and for injecting much-needed investment into the rural economy. Others, however, might criticize it for its dependence on the largesse of international lenders. Similarly mixed judgments would likely be rendered about WFP's announcement in March 2010 that it would be contracting eight mills in the Swat Valley, in order to produce 2,000 metric tons of wheat flour locally per day—and hence to stabilize wheat prices. Ultimately, most of the authors here would presumably conclude that while international funding is important, it must be supplemented—and eventually eclipsed—by Pakistan-led efforts to make sustained improvements to the country's food security.

The challenges of bringing better food security to Pakistan are immense, yet the stakes could not be higher. To understand these stakes, all one need do is consult the UN's most recent median-range demographic estimates for Pakistan in 2050. By that year, the country's total population is projected to be 335 million—about double the current population. In fact, Pakistan is expected to add more than 60 million people in just the next 15 years.[30]

Today's statistics about food insecurity in Pakistan—the 77 million hungry, the 45 million malnourished, the 36 percent of the total population subsisting below the poverty line—may seem staggering. Yet unless action is taken immediately, these figures could appear modest by comparison in several decades' time.

★★★★★★

This book represents the sixth in a continuing series on Pakistani economic issues. This project is generously supported by the Fellowship Fund for Pakistan (FFFP), a Karachi-based charitable foundation. The editors of this volume are very grateful to Munawar Noorani, FFFP's chairman, as well as to the other members of the FFFP board of trustees and advisory council for their sage advice and generous financial support.

Neither this book nor the June 2009 conference that preceded it could have been produced without the invaluable assistance and support of a number of key people. Sue Levenstein, of the Wilson Center's Asia Program, had full responsibility for the logistical aspects of these projects. As always, her efficiency and diligence, coupled with her perpetually good cheer, were indispensable, and we are deeply grateful. We also appreciate the editorial assistance provided by Melody Wilson of the Woodrow Wilson Center Press and by former Asia Program intern Merium Haq. Separately, the editors thank the Wilson Center's Environmental Change and Security Program, Comparative Urban Studies Project, and Program on America and the Global Economy for their help in organizing the conference, and also Wilson Center Senior Scholar William Milam and former Wilson Center Pakistan Scholar Riaz Mohammad Khan.

Others providing useful advice during the organizational and planning stages of the conference include Christopher Candland (Wellesley College), Sarah Halvorson (University of Montana), Simi Kamal (Hisaar Foundation in Pakistan), Feisal Khan (Hobart and William Smith Colleges), Ruth Meinzen-Dick (International Food Policy Research Institute), Ellen Messer (Brandeis University), Tarique Niazi (University of Wisconsin-Eau Claire), and Sabira Qureshi (independent consultant).

Finally, the editors express their deep gratitude to this book's nine contributors. These individuals kindly set aside considerable amounts of time to craft the essays that grace these pages. They should be particularly commended for their promptness, support, and good humor while fielding the editors' sometimes-unrelenting questions and requests. It has been our great pleasure to work with them.

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Food Security in Pluralistic Pakistan

Zafar Altaf

To understand food security in Pakistan, one has to understand the nature and cultural context of the country's various regions. In the Northwest Frontier Province (NWFP) and in the province of Baluchistan, many tribes are prevalent, and their power structure is based on the will of the people. The settled areas (where the writ of the government is implemented), largely comprising the provinces of Sindh and Punjab, along with some areas of Baluchistan and NWFP, are mainly under the influence of the caste system. However, unlike in India, this system is of a functional nature—with castes in agriculture, livestock, and so on. It has no super-ordination or sub-ordination elements linked to it; in other words, these functional castes have no hierarchical aspects.

In addition, the outer areas of Pakistan's west have traditionally been marginalized. The complete absence of development—including agriculture—in these outlying areas has meant that the people have had to fend for themselves as best they could. These western parts of Pakistan have been completely neglected and have become a haven for terrorists.

If one were to study the development projects in Pakistan meant for food security, then the conclusion one would draw is that these projects have been entirely limited to the irrigated lands of the provinces of Sindh and Punjab. This represents an area of roughly 16 million hectares (ha) served by irrigation canals. This is also an area that experienced the Green Revolution in the 1960s and is regarded as the breadbasket of Pakistan. However, the continuation of Green Revolution policies has led to serious issues of toxicity and land degradation. For example, the irrigated areas have suffered from waterlogging and salinity due to increased cropping patterns. With drainage not available for removing

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excess water from the soils, it was simply a matter of time before the soils became waterlogged. Despite massive investments by the World Bank (WB), the situation has not improved.

Additionally, the colonial-era system of equity-based water sharing (*warabandi*) devised by the British has not worked. Powerful farmers hog most of the water that belongs to the smaller farmers, and the *warabandi* system is under threat. The feudals are taking away most of the water in a system that is already threatened by transboundary tensions between India and Pakistan on the one hand, and between Pakistan and Afghanistan on the other. Pakistan, as the lower riparian in both cases, is particularly vulnerable.

In terms of demographics, Pakistan's rural population comprises between 60 to 70 percent of the country's total. The urban 30 to 40 percent includes a sizeable portion of the rural population that migrated to the cities in search of a better living. Such migrants constitute the majority of the slum areas in large towns.

PAKISTAN'S TROUBLED FOOD SECURITY HISTORY

There are 13 ecological zones and 27 sub-ecological zones in Pakistan, making the country a very exciting arena for experimentation and state-of-the-art agriculture. In other words, Pakistan offers a large diversity of environments that can be exploited. However, such diverse exploitation has not occurred, and for a simple reason: The majority of Pakistan's food security policies have revolved around wheat. In fact, cropping patterns have been stagnant because four crops have taken away 93 percent of all resources. These four crops are wheat and rice as food grain crops, and cotton and sugarcane as cash crops. The remaining 7 percent goes to a plethora of crops such as horticulture, lentils, and fodder.

Historically, investment in Pakistan has targeted the rich urban areas, and the rural areas have been totally neglected. The urban policymaker has obliged rural areas to go their own way. Whatever little investment has been made in the hinterland, it is immature, and has led to schools with no teachers or infrastructure. Similar situations hold with health facilities. Furthermore, country roads are of poor quality and have no maintenance. Crucially, such roads are only eight feet wide, and do not allow perishable agriculture produce to come to the market undamaged.

Not surprisingly, the only two truly functioning institutions in rural areas are mosques and graveyards.

If we look at what the future holds for Pakistan in 2020, then the scenario is that the country's population will be the world's fifth- or the sixth-largest, with a population difficult to feed and a security situation difficult to handle.

Food security has to be worked out differently. Presently, wheat in Pakistan is referred to as contributing to primary food security, while the coarse grains rice, maize, sweet sorghum, and pearl millet serve to promote secondary food security. However, such classifications are at odds with the situation on the ground. The staple food in NWFP has been maize, while in some peripheral and marginal areas (i.e., Baluchistan and NWFP) sweet sorghum and millet have been the urgent requirements of the local population. These coarse grains—especially millet and sorghum—require relatively little water and therefore can be grown with very few water requirements generally (rainwater could suffice). Additionally, the nutrients in coarse grains are significantly higher than those in wheat.

Decades ago, Pakistani agriculture did in fact emphasize coarse grains over wheat. However, cheap available wheat imports in the early 1960s led the country to shift its crop priorities. This shift did a great disservice to the policymakers who were at sea as to how to manage the distribution system for marginal areas where infrastructure was lacking.

Soon thereafter, the Green Revolution arrived in Pakistan, making available high-value seeds that responded to chemical fertilizer—provided there was water certainty. Opponents argued that this technology had unintended consequences. The continuous use of chemicals, the argument went, causes solids to became toxic—a prime consideration given that fertilizer use had to increase every year in order to remain at the same level of productivity. The emphasis on chemicals increased further through the use of chemical pesticides.

The Green Revolution in Pakistan also sparked a chain reaction in the country's macroeconomic structure. Most of the factor inputs (such as chemicals and fertilizers) were now manufactured by multinational corporations (MNCs), which as we now know are not in the social conscience sector; they are involved in massive price increases. Over the years the dependence of developing countries became such that the im-

port of these fertilizers generated greedy—and not normal—corporate profits. Given the modest means of most Pakistani farmers (today, 93 percent own less than 12.5 acres, or four hectares, of which 60 percent own less than three acres, or one hectare) and their inability to afford these imports, it became impossible to use chemical technology for the purpose of continuous increased productivity.

The macro structure started to crumble because the exorbitant cost of these fertilizers required massive foreign exchange or subsidies to farmers. In an effort to alleviate farmers' burdens, the WB moved in with its policy of microcredit banks based on the model of the Grameen bank (a microfinance organization that makes small loans to the poor). However, interest rates were of the order of 36 to 60 percent. The sum total of all this activity at the policy level was the continuous neglect of those who lived on Pakistan's periphery. The policymaker deemed it necessary for the urban areas to be looked after, because that is where the mass protests were believed to come from.

It was now obvious that grave issues were at hand. Wheat by itself clearly could not deliver. Other options were never under scrutiny, which resulted in a mismatch of demand requirements. Equity and efficiency were done in by the policies of successive autocratic governments.

FOOD SECURITY IN PAKISTAN TODAY

That wheat has today assumed a central spot in food security is indicative of policymakers preferring to stay with traditional ideas. Any new intervention would require a deeper policy element and a deeper responsibility—something that does not come easily to policymakers in a developing country where any mistake is attributed to them. So the policymaker is in a perfectly rational and safe mode when he or she stays with existing policy. The result has been that decision making is poor and seeks to carry on with past policies.

With food security based on wheat, Punjab benefits. Punjab is home to about 80 percent of the country's total wheat production, so any price increase leads to income increases for the Punjabi farmer, and within the Punjabi farmer the large landholders. The real tragedy is in Baluchistan, which comprises about 47 percent of the land mass of Pakistan. Somehow a myth has gone around, saying that there is no water in Baluchistan and

therefore that there can be no agriculture. One administrative district in Baluchistan, Chagai, is larger than the entire NWFP, and it has roughly 4.5 million hectares available for wheat production. Chagai has subsoil water at a depth of 60 to 90 feet, and is recharged by a river that comes in and out of Afghanistan. One wonders why successive governments have not taken advantage of such plentiful resources.

The cropping patterns that Pakistan follows can be divided into three broad systems: wheat-rice, cotton-wheat, and mixed. Land resources are either irrigated or rain-fed, and the rough divide between the irrigated and the rain-fed is in the ratio of 80:20. There are serious demand-supply imbalances, and the irony is that the major income areas are also the least populated. Farmers in the cotton-wheat belt are in a higher category than other farmers, and they can be placed in the category of quality farmers. Their problem does not emanate from productivity, but rather from the industrial sector, which is very regressive in nature and does not want to provide them the benefits of international prices for raw cotton. Consequently, these farmers are shortchanged to about 40 percent of the international price. The mixed cropping zones are also deficit areas, but the shortages in the rice-wheat areas are particularly severe. International agencies have tried for 40 years to improve the conditions of the rice-wheat farmers, but to no avail.

Access issues are serious. Infrastructure in industry is different from infrastructure in agriculture, and quite different from infrastructure in urban areas. At the moment, the bulk of expenditure is on urban infrastructure. The deficit areas—especially Baluchistan and the NWFP—have considerable transaction costs, and access issues cause major time delays. These difficulties in movement and the lack of governance have already been very costly for the country. Since the holding capacity of farmers is limited, the limitations imposed on farmers in terms of income are severe. In the context of food security, what this means is that the initial movement of wheat production is from rural to urban areas. Later, when farmers' stocks are exhausted, then the reverse flow starts, and the farmer has to purchase his food security requirements. The effect is that farmers have to fend for themselves, because there is no stamp scheme or other subsidy effort provided to them by the government. Since markets are limited, farmers rely on four crops that they can sell (sugarcane, cot-

ton, rice, and wheat). For this reason, there are no other available sources of income from agriculture production.

Indeed, there are no agriculture markets the farmer can visit to sell his surplus of other crops (vegetables and fruits) because of the limited market infrastructure. In 1947, the number of agricultural markets in the province of Punjab was about 650. Today, these have been reduced to 121. The main reason for this is that, thanks to a law enacted during colonial times, agricultural markets can only be in the public domain—and the public domain in Pakistan has been insensitive to the needs of farmers. On the other hand, there are 104 urban markets in Islamabad and yet the population is limited—but then again, in urban areas the needs of the elites must be fulfilled.

To examine food security in more detail, the characteristics of farmers owning less than two hectares were studied. Table 1 gives an account of the typical small farmer in Punjab and Sindh, based on survey data for 2008-09. In Punjab, a yield of three tons per hectare fetches him a gross income of Rs. 26,000 (U.S. $320), and if the cost of fertilizers and other factor inputs is taken away, the net income is much less. It is also important to note that the farmer keeps some of his yield for family consump-

Table 1: Characteristics of <2 ha Farm (estimated averages), 2008-09

Zone	Farm Size (ha)	Area Allocation to Wheat (ha)	Wheat Yields (tons/ha)	Family Size (no)	Livestock (no)
Punjab					
Rice-wheat	1.41	0.80	2.964	6	10
Cot-wheat	2.02	1.42	2.865	5	6
Mix-zone	1.01	0.80	2.668	4	4
Sindh					
Rice-wheat	2.02	2.00	1.778	10	0
Cot-wheat	2.02	1.80	3.458	8	1
Mix-zone	2.02	1.42	2.470	14	5

Note: One ton is equivalent to a thousand kilograms.
Source: Pakistan Agricultural Research Council (2009).

tion. If consumption per family member is 124 kilograms per annum, then the amount required for a family of six would be 744 kilograms, plus several hundred more kilograms to meet the requirements of guests throughout the year. In this way, the farmer keeps about one ton of his yield for consumption each year. This leaves the farmer with two tons of his original three-ton yield to sell. Farmers with livestock are slightly better off, as they have another source of income.

In the province of Sindh, the situation is much worse because families are larger.

Increases in support prices have brought some relief to small farmers. And additional income from wheat has enabled the small farmer to increase his food security by one to two months. However, at the same time, the farmer will have to buy expensive wheat that he earlier sold to the market. The farmer understands that wheat or grains alone will not sustain him, and that he requires a diversified food income that involves integrated farming. Table 2 depicts the food security challenges of small farmers on a household level, based on survey data for 2008–09.

Table 2: Household Income Expenditure and Food Security, 2008-09 (food security on <2 ha farms in surplus-wheat-growing regions; estimated averages)

Zone	Net Income (Wheat + Livestock) Rs./$	Total Expenditure (Food + Non-food) Rs./$	Deficit Amount (Rs./$)	Food Share in Total Expenditure (%)	When Wheat Would be Bought Again
Punjab					
Rice-wheat	46,898/586	78,304/979	(-)31,406/393	68%	September
Cotton-wheat	57,688/721	63,530/794	(-)5,841/73	72%	November
Mix-zone	53,022/663	6,220/78	(-)9,418/118	78%	October
Sindh					
Rice-wheat	50,770/635	81,660/1021	(-)30,890/386	87%	August
Cotton-wheat	115,195/1440	121,664/1521	(-)6,469/81	66%	November
Mix-zone	128,995/1612	161,140/2014	(-)32,145/402	61%	October

Source: Pakistan Agricultural Research Council (2009).

Table 3: Persons Employed in Rural Non-Agriculture Sector, 1996-97

Industry	Self-employed (%)	Employees (%)
Mining	0.2	1.1
Manufacturing	9.8	16.4
Electricity/Gas	0.1	2.1
Construction	5.8	25.7
Trade	48.1	7.9
Transport	13.0	11.3
Finance	0.3	0.8
Services	22.7	34.7

Note: About 70 percent of non-farm establishments are informal.
Source: Arif, Nazli, and Haq (2000).

The economic condition of non-farmers is also troubling. The incomes of Pakistan's rural non-farm poor are woefully low, yet such people represent a considerable share of the country's total population. Table 3, which depicts persons employed in the rural non-agricultural sector, is not really indicative of this demographic's prevalent poverty. Take the case of the industries in which large numbers of people are employed. These include the primitive and easy-to-enter trade and services sectors. Trade involves very basic products and generates insignificant income. Manufacturing—which has the third-highest number of employees—essentially consists of the hand-manufacturing of the basic requirements of the rural areas and the rural poor.

Table 4 displays the incidence of poverty across different cropping zones of Pakistan. It indicates that the highest levels of poverty occur in the horticultural areas of Baluchistan and desert areas of Punjab where farmers own less than one hectare of land. The rain-fed areas of Punjab have some of the lowest total amounts of poverty, despite the small holdings in this province. This is because at least one member of the family is working abroad in Dubai or someplace similar.

Table 4 suggests the need to start at the village level what the Chinese would call spark technologies, or small-scale cottage industries. Unless there is a sea change from supply-side agriculture to demand-side agri-

Table 4: Poverty Incidence Across Zones and Farm Size, 2005-06 (Percent)

Cropping Zones	Province	Less than 1 Hectare	1-2 Hectares	2-5 Hectares	Above 5 Hectares	Total
Cotton-Wheat	Punjab	33.10	28.80	24.00	7.20	**25.30**
Cotton-Wheat	Sindh	34.60	53.30	37.90	26.20	**40.20**
Cotton-Wheat	Baluchistan	12.50	40.90	45.70	28.30	**38.20**
Rice-Wheat	Punjab	24.00	30.90	12.70	4.00	**20.20**
Rice-Wheat	Sindh	57.10	47.30	59.20	34.70	**52.70**
Mix-Cropping	Punjab	24.50	24.40	17.10	17.30	**21.10**
Mix-Cropping	Sindh	33.30	33.30	37.50	6.90	**31.10**
Mix-Cropping	NWFP	15.00	24.40	26.80	0.00	**18.00**
Rain-fed	Punjab	10.80	12.20	5.30	18.20	**10.50**
Rain-fed	NWFP	15.20	17.50	22.20	28.30	**19.90**
Horticultural	Baluchistan	62.50	48.60	45.00	20.00	**41.90**
Horticultural	NWFP	33.30	27.30	20.00	0.00	**30.70**
Desert	Punjab	66.70	41.70	55.60	50.00	**52.90**
All		32.51	33.12	31.46	18.55	**30.98**

Note: Poverty incidence estimated at poverty line of Rs. 944.47.
Source: Government of Pakistan (2006).

culture, income streams will not increase. In order to effect this transition, it may be necessary to consider products rather than commodities—an idea discussed later in this essay.

In 2009, PARC conducted a survey of food poverty on small and landless farms across Pakistan (Khan, Altaf, Farooq, and Hussain 2009). All agro-ecological areas were assessed, including irrigated, rain-fed, arid, desert, and mountainous. Eight types of marginal and landless households were surveyed in the process. The data examined were family size, farm assets, incomes, expenditures, and food consumption.

This study sought to determine if recommended dietary requirements were being met. For the recommended major macronutrients (such as protein), consumption was deemed adequate. In fact, the study found that protein intakes are 19 percent higher than international standards, with only desert areas having marginal deficiencies. It is the micronu-

trients (such as iron, calcium, and Vitamin A) that are consumed at a low level. The severest shortage is in Vitamin A, though all the micronutrients were found to be low. These nutrient shortages are prevalent in deserts and in fragile and marginal areas, and more so in areas with landless people and on small farms. There is an iron deficiency that varies across the agro-ecological zones between 18 to 24 percent below internationally stipulated standards. Calcium deficiencies are most acute in desert ecologies (48 percent), but across the country as a whole are only 4 percent. Vitamin A (which affects eyesight) is the nutrient of maximum concern, as the shortage in rural areas is 85 percent. The reason for the paucity of this nutrient is that diets rich in Vitamin A (such as those containing edible oils, eggs, and fruit) are expensive.

THE ROOTS AND DRIVERS OF PAKISTAN'S FOOD INSECURITY

If blame is to be apportioned, then it must focus on those in uniform for the way they have behaved. Every time a military dictator assumes power, poverty comes to the fore. He stays on for 10 years or so, bringing in reforms that catapult him to even greater power. The military power structure gains its sustenance from its interactions with the West. During Zia ul-Huq's regime, the West wanted *mujahedeen* fighters to take on the Russians and this was done successfully. It is this self-interest from the West that has let Pakistan down and wasted 20 years of Pakistanis' lives.

The political system so necessary for poverty alleviation is under continuous threat. Unless Pakistan's constitutional strengths are asserted, then one tyrant after another will take away whatever prudence there is in the system.

An additional crucial issue in Pakistan is the poor manner in which scarce resources are deployed. The misallocation of resources is based on a lack of knowledge about equity issues in the country. This in turn has its roots in the peculiar culture of the colonial masters, who created divisions in society and ensured that various groups were beholden to the colonists. The way to keep such groups in check was to give them assets, and then to have the means of taking these assets away if they did not behave. For this purpose, colonial leaders established a Land Acquisition Act. The act is still on the books today, and rather than fulfill any devel-

opment needs, it is used for taking away the land of the poor and reallocating it—for peanuts—to the rich.

This pattern began during the rule of Field Marshal Ayub Khan (1958-1969), who acquired a 10-mile strip along the Indian border with the justification that it would be given to retired army officers who would defend Pakistan. Army officers received this land free of cost, and they never fired a single shot during two consequent wars with India.

The misallocation of resources has been further reinforced by mental corruption. This is unlimited, and indicates a desire to have something for nothing.

Transformations are needed if Pakistan is to remove the ills of planning and mental corruption that have seeped into the system. This means that people living in the periphery and marginal areas of Pakistan must be targeted for development. The present exclusion of people from the development process is contrary to equity and equitable interventions. Not only have they been left out, but the selfish development that has taken place is to the benefit of the powerful players in the autocratic political system.

Pakistan is also facing a problem of democracy without democrats. The culture of democracy still needs to be developed, and the rule of law and stability are still required. The federation will always be unstable. Baluchistan, the Thar region of Sindh Province, the Cholistan desert region of eastern Pakistan, and the Federally Administered Tribal Areas (particularly the marginal areas of North and South Waziristan) are ideal breeding grounds for insurgents.

Finally, Pakistan must deal with mafias of many kinds. These are not Sicilian-style mafias, but rather mafias that hit at the stomach seriously and effectively. They are like the Shakespearean Shylock, and they are ever-growing. As things stand at the moment, the mafia in Pakistan is ruling the market, and there is very little understanding of liberal economic policies. Therefore, it is presently very difficult to implement economic liberalization policies. Every time a private sector is created for the development of a market product, it lands in the hands of the people who do not want any degree of competition. Yet there is actually no private sector, but rather a quasi-private sector and a quasi-public sector. The "quasi" part indicates the ability to play the government for subsidies and connective profits. Indeed, the industrial sector is into

greed and not profit—which ill-serves Pakistan's agricultural sector. This legacy of industry goes back many years, when the operative philosophy was that 100 robber barons could develop Pakistan. Those were the days of subsidized investment, and yet these subsidized investments are now going to multinational corporations.

MNCs and the corporate sector comprise part of a larger mafia rooted not in profit but in greed. Corporations receive a peculiar form of protection in Pakistan and are subsidized by the taxpayer. MNCs misbehave in a manner that could undo the market capitalist system, and yet they are powerful players with unlimited access to the top people in the country. Adam Smith's profit motive is out the window, and greed has replaced it.

MOVING FORWARD

Pakistan's food security challenges are immense. Addressing them will require, among other things, meeting farmers' shortfalls. Yet at the moment there is not a single authority with whom farmers can connect with in order to have their problems solved—and not a single hands-on or theoretical institute where knowledge can be imparted to farmers. The option for knowledge dissemination may well lie with the electronic media.

So where to go from here?

The West can help by providing resources, but the two resources that cannot simply be provided from the outside are the mind development and mindset of the bureaucracy and the political system (whether democratic or autocratic). Both seem to be following the same policy of public resources for private benefits, and the poor have suffered in the process. Critically, the words equity, efficiency, and efficacy are seriously missing from the vocabulary of policymakers.

Still, all is not lost; there are a number of steps that can be taken.

Exploit the Knowledge Explosion

The recent knowledge explosion offers hope. It allows for the inversion of the traditional research and development model, in which the former precedes the latter. Instead, it is now possible to take development first and then bring in a concept of dynamic research later. This way, one can cut costs as well as improve on the immediate use of marginal resources.

Since there is no question that agriculture is not a perfect science (and in fact no science is perfect), it helps to consider that agriculture is an imperfect and imprecise science. When one accepts that premise, then the limitations and boundaries are eliminated. Consequently, this opens up new vistas for enhancing productivity with innovative interventions.

There are two ways to spearhead knowledge generation: Get hold of the best people (not the second-best), or use books. There is no third way. More of the same policies will not help, and it might be necessary to look at things in a more iconoclastic way. Farmers have to be given choices—or at least an alternative.

Overhaul the Production Function

One strategy moving forward is to change the production function. For example, the factor inputs in the production function can become more indigenous and cheaper. The preliminary indications are that input costs can be substantially reduced without any consequential loss in productivity. For this change to occur, localized research is required. Still, practically every input can now be indigenously developed. For example, chemical aspects of production can be substituted by localized development. Should the green route be taken, the ecological balance would be restored.

Change Institutions and Infrastructure

For quite some time, the World Bank has been dictating to the developing world. Pakistan is no exception, and rightly or wrongly, we have been accepting the directions of the WB. Over the years, all the changes in our institutions have been WB-induced, especially where the uses of factor inputs are concerned. This has furthered the use of chemical agriculture. Further institutional changes in agriculture are important, as they lay the basis for a futuristic approach that is environmentally efficient and economically beneficial to farmers.

Meanwhile, changes in infrastructure lead to socioeconomic changes, and could lay the basis for the future of the country. For example, existing water storage serves the purposes of large farmers only; any benefit to small farmers is only incidental. Consider that the waters of Pakistan's largest dam have still not been apportioned to area farmers. These mega-

dams are benefiting large farmers and the new asset owners among them. Similarly, irrigation authorities favor the powerful when making their water allocation decisions.

Such has been the order of the day in favor of the powerful and against the poor farmer. What is required is that all immature infrastructures for the poor farmer/villager be modified, and upgraded to the levels that provide a minimum of the services required. Take the example of education. There are presently such a small number of schools, and the ones that are provided are so basic that one would not even think of sending anyone there for education.

Emphasize Products Over Commodities

It is possible to work the system in such a way that the needs of the population are satisfied. For this to happen, most industries have to be developed so as to meet the factor input costs of the farmers with a minimum product cost, and then set up in a competitive structure.

As long as Pakistan sells its commodities in the world market, prices will remain volatile. The way forward is to focus on the products of these commodities. Maize has 27 products, while hemp has thousands. The advantages of products are immense, and particularly for the rural poor, from whom the new entrepreneurs tied to these products would be drawn.

The time for land reform is over; in fact, land reforms are in reverse these days, with the rich and the powerful taking away land from the poor and assuming the role that barons played in the 14th century. However, by going to product development, the easy route of landed property is substituted by local-level capitalism. Fair and prudent policies are all that are needed, yet developing and implementing such policies represent one of Pakistan's biggest problems, because democracy has been undermined so often by illegitimates who grab power on one pretext or the other.

Intervene on the Micro Level

It is essential that the focus be on microlevel approaches. Donor-driven interventions—which typically occur at the macro level—will only exacerbate the problems, which can hardly be considered while sitting far away in Islamabad or in the headquarters of the Asian Development

Bank (ADB) or World Bank. Wherever and whenever upliftment efforts have focused on the grassroots, the projects have come out successful and the objectives achieved. The advantage of microlevel interventions is that they operate on the very effective level of the small farmer. Given that 93 percent of Pakistan's farmers are smallholders, such interventions offer the best path forward toward policies devised for the many and not for the landlords, who represent the few in Pakistan.

Indeed, poverty in Pakistan is a product we have derived ourselves. Yet it can be alleviated—though not by policies in the aggregate. Rather, microlevel policies must be devised for the reduction of poverty. The WB and ADB have tried macrolevel policies and they do not work. So what are the microlevel policies that will work? One recent example involves empowering women through a holistic approach to land development: Women are to be given developed agricultural land in order to earn their livelihood. As matters stand now, women in Pakistan perform practically all the work in agriculture. This policy would mark the first time that women will get some assets as a right.

This is a great beginning. To be sure, the social aspects have to be worked out, and the infrastructure has to be mature in a way that it currently is not in rural areas. All the same, this represents a new set of thinking for the 21st century. It is all about changing the existing mindset and making fashionable and different opportunities available. Given the will, anything and everything is possible.

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Food Supply Challenges and Implications for Food Security

Sohail Jehangir Malik

"Currently 77 million people, almost half the population, are food-insecure in Pakistan—with daily calorie intake below the minimum recommended level."
—Government of Pakistan (2009)

The food price inflation of 2008 highlighted all of the chronic aspects of food insecurity in Pakistan.[1] This essay examines these issues and their causes, illustrating the different dimensions of food insecurity and how food security in Pakistan is linked to domestic agricultural practices and policies. It also shows how the country's food security has both entitlement and production aspects; for instance, on the production side it is linked primarily to one crop, wheat.

CHARACTERISTICS OF FOOD INSECURITY IN PAKISTAN

An impact assessment of high food prices in Pakistan carried out by an Interagency Mission of the United Nations in July 2008 found that:

- The share of the population with inadequate food intake (i.e., less than 1700 calories, as compared to the norm of 2,350 calories per day) had increased from 23 percent in 2005–06 to 28 percent in 2008 (i.e., from 35 million to 45 million people),

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while the share of the population with an intake of 1,700 to 2,100 calories had increased from 23 percent to 24 percent in the corresponding period. Thus, nearly 52 percent of the population was food-insecure. Moreover, the food price shock was felt more severely in urban areas.

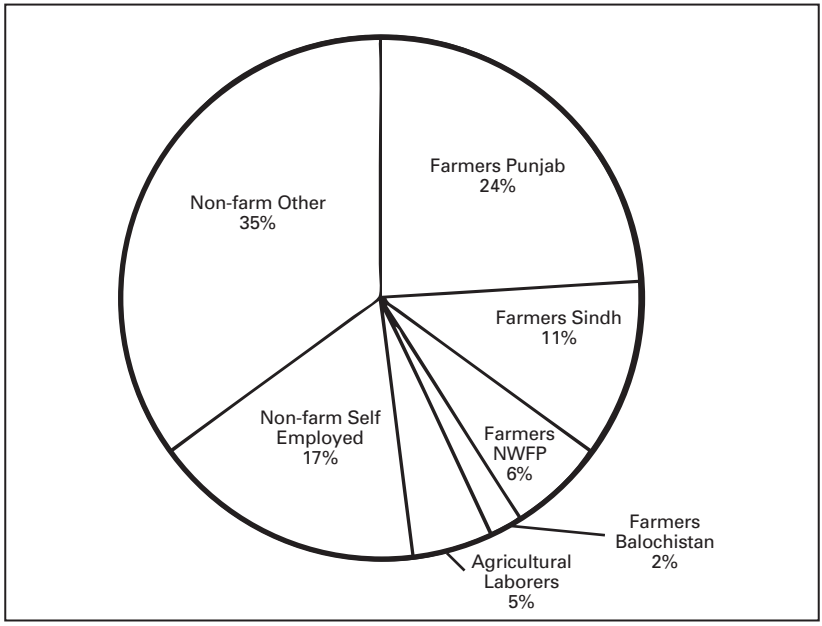
- Low-income households that had devoted about 50 percent of their expenditure to food had raised this share to 70 percent at the cost of other expenses, such as medical care and education.

Wheat is the most important commodity in Pakistan for meeting caloric requirements. Available household income and expenditure survey–based data indicate that wheat accounts for more than 55 percent of total caloric consumption. This share is significantly higher for the poorest households and poorer provinces (Government of Pakistan 2009).

In 2008, food prices increased at an abnormal rate in Pakistan, as they did in several developing countries. At the policy level there was inadequate awareness of the global factors underlying the increase in food prices and no serious policy response to the emerging crisis (Government of Pakistan 2009). The support price of wheat, which had increased marginally from Rs. 400 per 40 kg in 2004–05 to Rs. 415 in 2005–06 and Rs. 425 in 2006–07, remained at that level for 2007–08. However, the new government increased the price to Rs. 625 at the time of harvest in March 2008. Meanwhile, the cost of fertilizer had risen due to higher petroleum and gas prices, thus accentuating the adverse terms of trade for agriculture. Large-scale imports were required since the production of wheat in 2007–08 was only 22 million tons. The gap between lower domestic prices and rising international prices led to increased outbound smuggling, thereby creating further pressure on supplies and serious food shortages in many parts of the country. On top of these policy failures, the outgoing government in 2007 also mismanaged the wheat economy. It allowed exports on the basis of crop estimates to be set at a price of U.S. $200 a ton, but by October, the government was importing even larger quantities at more than U.S. $300 a ton.

The consumer price index during 2008 increased by 25.1 percent over trend values. In addition, the price of wheat increased by 20 percent.[2] This increase affected the overall population adversely, since only about 26 percent of Pakistani households produce wheat while 97 percent of households consume it (Government of Pakistan 2006).[3] Hence, while an increase in wheat price benefits only one-quarter of the households in the country, it affects nearly all consumers adversely. It is also important to bear in mind that even in the rural sector, nearly 60 percent of the households are landless and more than half of the poor come from non-farm households, thus being consumers, rather than producers, of wheat (see Figure 1). The high food price inflation caused a decline in the real wages of workers of 6 percent for skilled and 13 percent for unskilled construction workers during 2006–08 (Government of Pakistan 2008). This means that in nominal terms

Figure 1: Nearly 60 Percent of the Rural Poor Are Landless



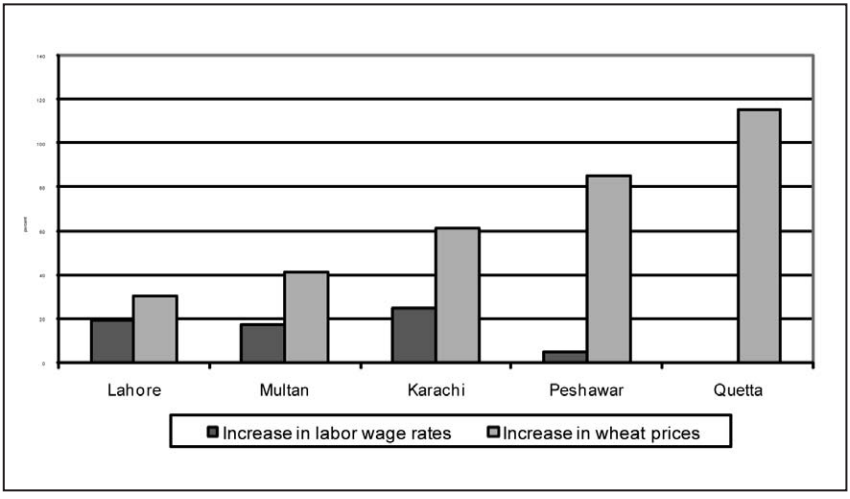
Source: Government of Pakistan (2006).

the increase in the price of food far outstripped the increase in wages. Pakistan's food insecurity has both interpersonal and interregional aspects; the inability to buy as well as the shortfall in availability differs greatly across provinces (see Figure 2).

The average annual production of wheat between the years 2001–02 and 2008–09 has been about 20.49 million tons (mt), while the average annual consumption over this period has been 20.59 million tons. The deficits are the result of large swings in annual production from 18.23 million tons to 23.30 million tons. The country has to rely on large-scale imports in the years when there is a deficit.

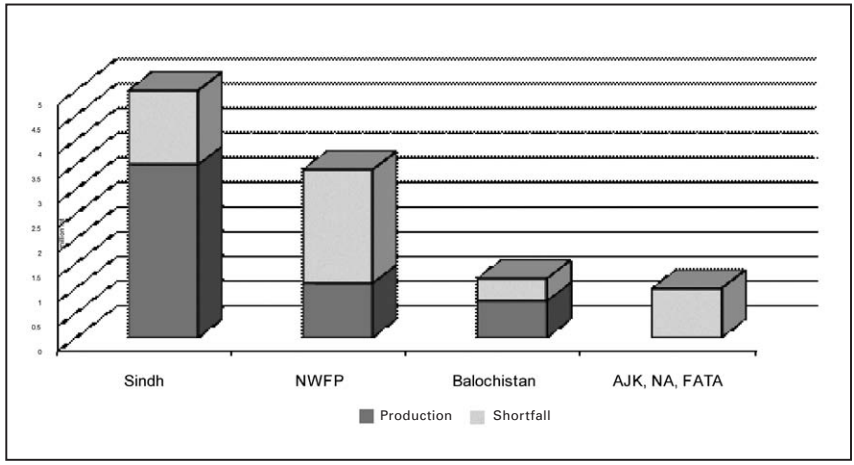
The regional dimensions of food insecurity in Pakistan are also extremely important to understand. Punjab produces the bulk of the wheat—on average, 16 to 17 mt against its own consumption requirements of about 12.5 mt. Therefore, it has a surplus. However, all of

Figure 2: Increase in Food Prices Outstrips the Ability to Purchase



Source: UN Inter Agency Mission (2008).

Figure 3: Production Shortfalls Have Regional Dimensions



Note: AJK=Azad Jammu and Kashmir; NA=Northern Areas; FATA=Federally Administered Tribal Areas.
Source: UN Inter Agency Mission (2008).

the other provinces produce less than their minimum consumption requirements (see Figure 3). Northwest Frontier Province (NWFP) has the largest wheat deficit and is thus the most vulnerable. In 2007–08, NWFP required the highest allocation—almost 2.3 mt. Changes in domestic wheat marketing policies immediately affect the NWFP supply situation. Additionally, the porous border with Afghanistan has resulted in a large share of allocated wheat not reaching the intended provincial consumers.

AGRICULTURE: THE NEGLECTED SECTOR

Agriculture has been the neglected sector in Pakistan, which is reflected in the dramatic decline in investment in this sector over the past several decades. Even in the 10 years from 1999 to 2009, the ratio of total investment (private and public) to GDP has declined from 2.1 percent to 1.1 percent. And within total investment, public sector investment in agriculture, which was only 0.082 percent of GDP in 1999, fell to 0.001 percent in 2009. In addition to the decline in public expenditures for

Table 1: The Yield Gap in Major Crops

Crop	Progressive Farmers' Yield	National Average Yield (average of past three years)	Yield Gap (percent)
Wheat	4.6	2.6	44
Cotton	2.6	1.8	31
Sugarcane*			
Sindh	200	55	73
Punjab	130	50	62
Maize	6.9	2.0	58
Rice	3.8	2.1	45

** The data for sugarcane are available separately for the two provinces Sindh and Punjab. For the other crops, the data are national averages.*
Source: Government of Pakistan (2009).

agriculture, a number of challenges have proved to be insurmountable. These include flat (low) yields and a large yield gap; low productivity of water and non-reliability of water services; under-performance of rural factor and product markets and extension services; and under-investment in research and technology development.

The government has been aware of these challenges for several decades; most notably these were highlighted in the National Agriculture Commission report of 1987 (Government of Pakistan 1987) and the Poverty Reduction Strategy Paper of 2003 (Government of Pakistan 2003).

In particular, Pakistan's inability to take advantage of the large potential for an increase in yields at the farmers' level is frustrating. The potential yield gap (the difference between the progressive farmers' yield and the national average) for most major crops is quite large (see Table 1).

According to available research, the inability to bridge the yield gap is related to inadequate certified seed coverage, improper fertilizer use, low farm mechanization, and inefficient water use. All of these factors reflect policy failures that relate to a lack of implementation and an inadequate focus on the development of markets.

In the post-production stages, there are high and "universal" subsidies in procurement, storage, transport, and handling. These subsidies add to inefficiencies, curtail private-sector initiative, and create excess milling capacities, and these in turn result in high processing costs. Available analyses show that these subsidies generally benefit the millers, some larger traders, and the consumers. There is also an additional subsidy through the Utility Stores Corporation, which markets 1.6 million tons, about one quarter of the tradable wheat. These subsidies for wheat flour and other food products are a substantial burden on the national budget.[5]

PROPOSED FOOD SECURITY STRATEGY FOR PAKISTAN: THE PRIME MINISTER'S SPECIAL TASK FORCE OF 2009

Following the international food price hike of 2008 and the subsequent adverse effects on food security, the prime minister of Pakistan set up a high-powered task force to devise a food security strategy. The task force submitted its report in early 2009. The strategy put forward in this report is built on four elements:

1. An agricultural growth rate of at least 4 percent from 2010 to 2020, with special attention to the livestock sector;
2. An efficient and equitable system of food procurement, storage, and distribution to ensure that food is available at reasonable prices throughout the country and throughout the year;
3. Pro-poor growth and non-farm employment generation to substantially improve the access of poor households to food; and
4. Safety nets for the poor.

However, while the proposed strategic interventions are very well-articulated, these are not new. These interventions have all been proposed previously. Nearly every statement on agriculture policy to come out of the Ministry of Food and Agriculture since the National Agriculture Commission report of 1987 lists:

- Policy regime to remove market imperfections, increase productivity and farmers' profitability, and foster exports;
- Corporate farming;
- Agriculture credit reform;
- Scaling-up of diversification into new, higher-value crops, including technology adoption and adaptation;
- Use of new and more efficient irrigation technology; and
- Focus on livestock, especially dairy.

Such policy statements abound in official reports. However, the details on how to bring about these policy changes are generally missing. The lack of these details is symptomatic of the official neglect of the agriculture sector more generally. As a consequence, while reforms have been announced off and on, success has been limited.

One of the most important impediments to successful reform has been the official "schizophrenia" over the role of markets. Over the past three decades, in particular, this behavior has been symptomized by a process of taking one step forward and two steps backward in terms of liberalizing agriculture markets and opening up international trade in agricultural commodities. The major motivation for the backsliding on market liberalization is the paranoia over losing "control" over the ability to ensure food security, which has led to the tightening of market controls even at times when the government was paying lip service to market liberalization and policy reform. This behavior has affected the ability to implement much-needed wheat policy reforms to promote more efficient wheat markets. Analytical studies of policy reform of the wheat market, which have generally been part of the conditionality of multilateral lending to Pakistan, have included recommendations to:

- Lower levels of government procurement;
- Maintain modest government carry-over of stocks as a security measure;
- Liberalize private-sector international trade;
- Introduce cash-based safety nets;
- Promote a competitive domestic market; and
- Enhance analytical capacity and information-sharing.

These studies do not reflect an awareness of the complex micro-macro relationships and the sectoral relationships within which the wheat economy of Pakistan operates. Moreover, these studies pay scant attention to the role of the entrenched institutions that govern the wheat sector in Pakistan and how difficult these are to change.

The implementation aspects of these recommendations and whether sufficient capacity or even ownership for the reform process exists within government have been largely ignored. This disconnect between intent and capacity also exemplifies a number of other disconnects that have adversely affected the development of the agriculture sector in Pakistan. The Ministry of Agriculture is completely dependent upon the Planning Commission and the Ministry of Finance for resources. There is very little capacity in these ministries to understand the importance of what is being proposed and why it is important. This lack of ability to communicate affects the allocations to agriculture. Moreover, agriculture policy is made by the federal government but is implemented by the provincial governments. They rarely talk to each other. And the domestic capacity for agriculture policymaking is seriously inadequate, with no serious agriculture policy institution worth the name left in the country.[6]

The backtracking and reversals on policy reform have been quite common in Pakistan. The lip service to reform is generally the result of the government's need to agree to the reform conditions imposed by multilateral lending agencies such as the World Bank and the Asian Development Bank to ensure the receipt of much-needed balance-of-payment and budgetary support, rather than any strongly held faith in the efficacy of the reform process itself. The reduction in the possibility of rent-seeking by those in control, through the elimination of discretionary powers that the market-based reforms would bring about, also accounts for the lack of implementation. The inability to liberalize the wheat market, despite repeated commitments to do so over the past several decades, is full of examples of this backsliding.

There are also many other critical challenges that affect agriculture policymaking and implementation in Pakistan. The most important of these are the weak agricultural data and even weaker domestic capacity for analyses. Very little attention has been historically paid to these serious shortcomings. This lack of attention is reflected in the almost total absence of Monitoring and Evaluation (M&E) information and effective

policy research; in particular, there is scant evidence of what does and does not work, and how effective strategies can be replicated and upscaled.

Addressing the issues that have been highlighted above requires a holistic long-term approach to agriculture development and poverty reduction. Building awareness is only one part of the solution. Addressing food insecurity in Pakistan is tied to the larger need for much more fundamental governance and political reform.

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NOTES

1 The prices of a number of food items (i.e., wheat, rice, palm oil, sugar, pulses, and petroleum products) have started declining in the international market, providing much-needed relief, although the 30 percent depreciation of the Pakistani rupee has offset gains for domestic consumers.

2 The smaller increase in wheat price as compared to the overall CPI illustrates government control over wheat prices.

3 Rice is the second major staple food. About 9 percent of the population produces rice, and 86 percent consumes some rice. However, given the large proportion of calories from wheat, this essay focuses only on the production-related issues connected with that commodity.

4 Rural factors here refer to the factors of production employed in agriculture, such as land, labor, and capital.

5 In addition to these, the government launched the Benazir Income Support Program in 2008 to provide relief to 3.4 million households. The program pays poor families at the rate of Rs. 1000 per month, involving total expenditure of Rs. 34 billion in 2008–09. The Punjab government has also launched a similar program for 1.8 million households, with an estimated outlay of Rs. 22 billion. These programs can become an important element of the national food security strategy, provided the programs are implemented in a timely and transparent manner and duplication is avoided (Government of Pakistan 2009).

6 The Prime Minister's Task Force on Food Security makes a serious recommendation to establish an Agricultural Policy Institute in place of the now almost-defunct Agricultural Prices Commission of Pakistan.

The Food Security-Governance Nexus in Pakistan

Roshan Malik

The era of cheap food seems to be over, and the long-term impacts are melting developing countries' governance structures and rapidly increasing fiscal deficits. The current spike in global food prices and shortage of necessary edible commodities in various parts of the world have exacerbated food insecurity and augmented poverty. This "silent tsunami" is feared to have increased the global pool of 825 million malnourished and hungry populations by another 100 million people.[1]

This paper identifies five propositions about food insecurity, governance, and human development. Each proposition is examined from two angles. The first angle looks into the global scenario. The second angle focuses on Pakistan—a nation facing price hikes, severe food shortages, and a high magnitude of violence.

PROPOSITION 1

We are facing a significant global food crisis—one that is likely to persist and that puts some of the world's poorest countries at the greatest risk.

The Global Context

Experts have identified numerous market forces such as high oil/energy prices, the skyrocketing prices of fertilizers, the recession in the U.S. economy, and growing biofuels and food demand in China and India

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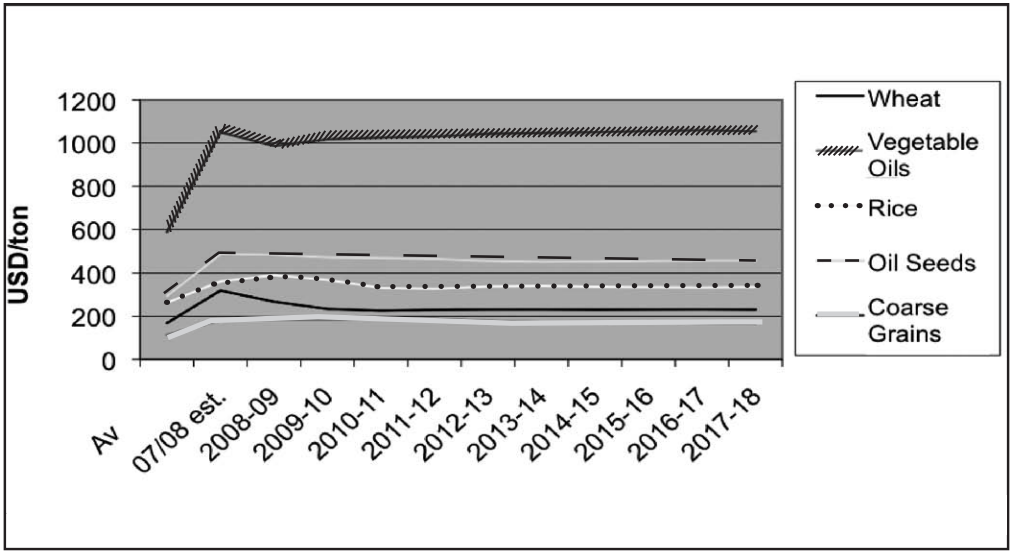
as causes of the global food crisis. Ecological factors like harsh weather conditions, the stagnation and erosion in agriculture resource bases, and rapid urbanization have exacerbated this crisis. Subsequently, the price of wheat increased by 198 percent, rice by 98 percent, and corn by 38 percent within a one-year period in 2007-08.[2]

The Food and Agriculture Organization (FAO) and Organization for Economic Cooperation and Development (OECD) have projected that the prices of major food and feed commodities will continue to stay relatively high, with slight changes by the year 2017-18,[3] as shown in Figure 1. Keep in mind that according to the UN Population Fund's latest estimates, 2.5 billion new consumers will be added through 2050.[4]

Vulnerable population groups, particularly in developing countries, spend substantial amounts of their income on food and suffer the most. People from high-income countries only spend 10 percent of their income on food, while people from low-income food-deficit countries (LIFDCs) spend 50 percent or more. If staple food prices soar by 50

Figure 1: World Prices for Selected Food and Feed Commodities (2008 Projections)



Source: FAO.

percent, the impact on price increases for high-income groups is only 0.6 percent, while for LIFDCs it adds another 10 percent to food spending.[5]

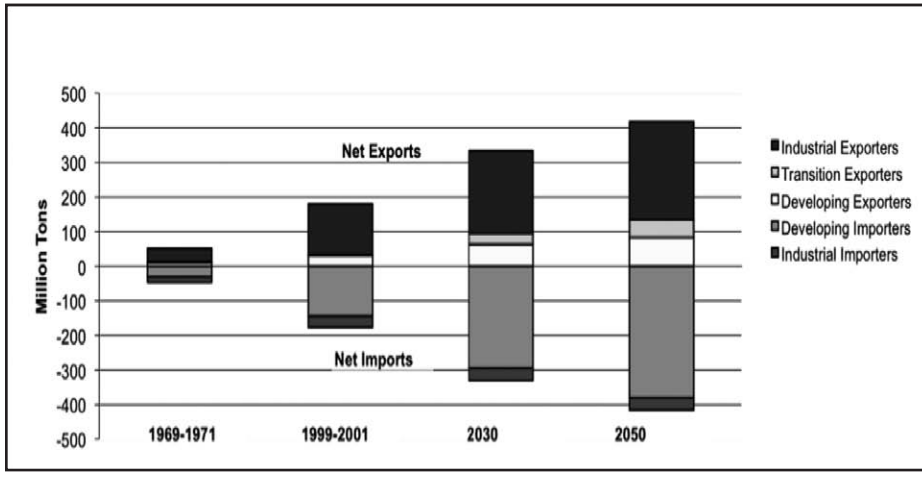
In 2008, the FAO predicted that the global food imports bill would likely climb by $215 billion, and enter into the territory of $1.035 trillion.[6] According to OECD estimates made the same year, the aggregate cereal import bill for developing countries soars by $4.5 billion on every 10 percent increase in cereal prices.[7] The conclusion was that rising global food prices would increase the cereal bills of the world's poorest countries by 56 percent, and for LIFDCs in Africa by 74 percent.[8]

As shown in Figure 2, developing countries' cereal imports, which totaled 144 million tons from 1999-2001, could jump to 295 and 380 million tons by 2030 and 2050, respectively.[9]

High food prices over the long term may have a reversal effect on the ability of struggling economies and thriving democracies alike to sustain their economic growth and to maintain their legitimacy.

The International Food Policy Research Institute (IFPRI) estimates that global warming will decrease agricultural gross domestic product (GDP) by 16 percent by the year 2020. IFPRI also projects that de-

Figure 2: World Cereal Imports and Exports (2006 Projections)



Source: FAO.

veloping countries will suffer more, with their agriculture productivity declining by 20 percent, as compared to 6 percent for developed countries.[10] Estimates suggest that another three billion people will be added to the developing country population pool, swelling to 9.2 billion people in 2050.[11] Given such rapid population growth, the incremental demand of cereals and high food prices may bring serious governance crises for many developing countries in the future.

The Case of Pakistan

About one-fourth of Pakistan's 170 million people are already living below the poverty line, and food inflation reached 30 percent in 2007. In 2008, the Asian Development Bank (ADB) presented three different food price inflation scenarios for Pakistan. The ADB projected that if there were to be an increase in food price inflation in the country by 10 percent, 20 percent, or 30 percent, then such spikes would add, respectively, another 7.05 million, 14.67 million, and 21.96 people living below the poverty line.[12]

Wheat is a staple food in Pakistan and plays an important role in measuring food security at the individual, household, and national level. Pakistan's average per capita wheat consumption for the last roughly 18 years has been 128 kg, which is quite close to the international standards of per capita consumption (126 kg). As shown in Figure 3, Pakistan's wheat production has been increasing according to population growth. However, long-term wheat requirements will be hard to meet given current rates of national production and population projections for the next few decades. According to UN estimates, Pakistan's current 170 million wheat consumers will increase to 335 million in 2050, with an annual requirement of 42.23 million metric tons of wheat.

PROPOSITION 2

Countries experiencing severe food crises also suffer from poor governance indicators, and those facing chronic food insecurity are likely to have even worse governance.

Figure 3: Wheat Production, Consumption, and Population in Pakistan

Year	Population (Millions)	Wheat Requirement (mmt)	Wheat Production (mmt)	Surplus/ Shortfall (mmt)
1990-91	112.61	14.19	14.57	(0.38)
2000-01	142.86	18.00	19.02	(1.02)
2007-08	163.49	20.60	20.96	(0.36)
2010	184.75	**23.28**	--	--
2025	246.28	**31.03**	--	--
2050	335.19	**42.23**	--	--

Note: mmt means million metric tons; 1,000 kg=1 ton or 1 metric ton.
Sources: United Nations[13] and Pakistan Journal of Agricultural Sciences;[14] *author's projections in bold.*

The Global Context

FAO defines food insecurity as:

> A situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active, healthy life. It may be caused by the unavailability of food, insufficient purchasing power, or the inappropriate distribution or inadequate use of food at the household level. Food insecurity, poor conditions of health and sanitation, and inappropriate care and feeding practices are the major causes of poor nutritional status. Food insecurity may be chronic, seasonal, or transitory."[15]

A country is chronically food-insecure if it faces successive food crises for three years; continuous insufficient food intake to meet dietary energy requirements leads to undernourishment.[16] Transitory food insecurity occurs during a "variation in international food prices, foreign exchange earnings, domestic food production, and household incomes.

These are often related. Temporary sharp reductions in a population's ability to produce or purchase food and other essentials undermine long-term development and cause loss of human capital from which it takes years to recover."[17]

The World Bank's Worldwide Governance Indicators project aggregates individual governance indicators for 212 countries. It defines governance as comprising "the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored, and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them."[18] Six indicators are used to measure the governance of a country: Voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. The countries are ranked between 1 and 100 (in terms of percentiles); low percentiles represent poor governance while high percentiles represent good governance.

The first part of Figure 4 shows a list of 21 chronically food-insecure countries—nations facing chronic food crises and requiring external assistance to overcome them. The second part of Figure 4 measures 15 countries suffering from transitory food insecurity—states facing seasonal food crises for the last three years or having an increasing trend of food shortages over the last two years.

Countries facing chronic food insecurity are likely to have the worst governance indicators. Countries with transitory food insecurity do not have the worst governance indicators, though they are on the borderline.

The Case of Pakistan

Data for governance indicators is not available at the district level, but issues related to the rule of law, government effectiveness, and political stability may be found from media reports on regional or provincial levels. In 2003, the Sustainable Development Policy Institute (SDPI) and United Nations World Food Program (WFP) published a research report on food insecurity in rural Pakistan. The report does a thorough analysis of food insecurity at the district level. Out of 120 districts in the country,

Figure 4: Food-Insecure Countries and Governance Indicators

	Governance Indicators (2007) Percentile Rank (0-100)					
	Voice & Accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
Countries with Chronic Food Insecurity (June-05 to July-08)						
Afghanistan	13.9	1.4	8.1	2.9	0.5	1
Burundi	25.5	9.1	6.6	10.7	9.5	8.7
Central African Republic	21.6	6.7	4.7	9.7	2.9	17.9
Chad	9.1	6.3	4.3	12.1	5.3	5.3
Congo, Democratic Republic of	8.7	2.4	1.4	8.3	1.4	3.9
Congo, Republic of	15.4	19.7	7.1	11.2	8.1	10.6
Côte d'Ivoire	11.1	3.4	5.2	18	2.4	7.2
Eritrea	1	17.3	8.5	2.4	11.9	34.8
Ethiopia	13.5	7.2	37.4	18.9	38.1	27.5
Guinea	12.5	5.3	3.8	13.1	3.8	2.9
Iraq	9.6	0.5	1.9	7.3	1	1.9
Korea, Dem. People's Rep. of	0	56.7	0.5	0.5	15.2	0.5
Liberia	37.5	14.4	10.4	9.2	14.3	45.9
Mauritania	26.4	31.7	27	39.8	33.3	38.2
Sierra Leone	38	33.2	11.8	16	11	11.6
Somalia	3.4	0	0	0	0	0
Sri Lanka	35.6	5.8	47.4	51.5	55.7	57.5
Sudan	5.3	1.9	10.9	8.7	4.3	4.8
Swaziland	16.3	47.6	25.6	26.2	25.7	41.5
Uganda	33.2	13.9	42.7	48.5	37.6	24.6
Zimbabwe	7.7	11.5	2.8	1	1.9	4.3
Countries with Transitory Food Insecurity (June-05 to July-08)						
Bangladesh	28.8	8.7	22.3	20.9	24.8	9.7
Bolivia	49.5	18.3	19.9	11.7	17.6	38.6
Dominican Republic	55.3	49	37	50	37.1	31.9
Ghana	62	53.4	55	53.9	52.4	56
Guinea-Bissau	32.7	29.8	10	14.1	6.2	6.8
Haiti	26	10.6	7.6	20.4	4.8	3.4
Indonesia (Aceh Province 2)	42.8	14.9	41.7	43.7	27.1	27.1
Kenya	46.2	15.9	30.3	47.1	15.7	15.5
Lesotho	52.4	44.7	39.8	24.8	47.1	54.6
Moldova	36.5	36.1	19.4	42.7	29.5	29.5
Nepal	22.6	2.9	21.8	26.7	31	30.4
Nicaragua	44.7	35.6	15.2	36.9	22.4	23.2
Pakistan	18.8	1	28.4	28.6	19.5	21.3
Russian Federation (Chechnya)	20.2	23.1	42.2	35	16.7	16.4
Timor-Leste	44.2	16.3	15.6	4.4	7.6	16.9

Sources: World Bank Worldwide Governance Indicators[19] and FAO.[20]

38 districts are identified as extremely food-insecure. More than half of these food-insecure districts lack government effectiveness, the rule of law, and political stability.

Figure 5: Food Insecurity in Rural Pakistan

FOOD INSECURITY IN RURAL PAKISTAN

EXTREMELY INSECURE

Provincial Code	District	National Ranking	Provincial Ranking	Provincial Code	District	National Ranking	Provincial Ranking	Provincial Code	District	National Ranking	Provincial Ranking
S	Tharparkar	1	1	F	Kurram	14	4	B	Jhal Magsi	27	10
B	Dera Bugti	2	1	NA	Skardu	15	2	B	Barkhan	28	11
F	N.Waziristan	3	1	F	Mohmand	16	5	N	Bannu	29	7
B	Musa Khel	4	2	NA	Ghanche	17	3	NA	Ghizer	30	4
B	Kharan	5	3	N	Battagram	18	5	P	Rajanpur	31	1
N	Shangla	6	1	B	Kohlu	19	5	N	Tank	32	8
N	Kohistan	7	2	F	Orakzai	20	6	N	Chitral	33	9
F	S.Waziristan	8	2	B	Zhob	21	6	N	Buner	34	10
NA	Diamer	9	1	B	Khuzdar	22	7	B	Killa Saifullah	35	12
N	Hangu	10	3	F	Bajour	23	7	N	Lower Dir	36	11
B	Bolan	11	4	B	Awaran	24	8	P	Muzaffargarh	37	2
N	Upper Dir	12	4	N	Swat	25	6	B	Kalat	38	13
F	Khyber	13	3	B	Killa Abdullah	26	9				

Note: S=Sindh; B=Baluchistan; P=Punjab; N=Northwest Frontier Province (NWFP); F=Federally Administered Tribal Area (FATA); and NA=Northern Areas.
Source: SDPI/World Food Program.[21]

All seven districts of the Federally Administered Tribal Areas (FATA) are identified as extremely food-insecure. There has hardly been any government control, rule of law, or political stability in this region. Before the military launched operations in this region during the first half of 2009, Taliban militants controlled most of these districts. Extremist-sponsored violence has been prevalent in this area and in other parts of the country.

Eleven districts of Northwest Frontier Province (NWFP) are identified as extremely food-insecure, and all are ridden with conflict. Three of these extremely food-insecure districts, including Swat, were completely controlled by Taliban militants before army operations began in 2009. Five of them have a strong Taliban presence, and the remaining three are facing the outfalls of violence of neighboring districts.

In Baluchistan, according to the report, 13 out of 26 districts are extremely food-insecure. Four districts among the extremely food-insecure are also facing violence, and one district is hosting refugees from these conflicts.

PROPOSITION 3

Countries experiencing extreme governance stress tend to face significant food shortages.

The Global Context

Foreign Policy magazine annually publishes a Failed States Index, identifying the states that have weak governing structures, poor law and order, violations of human rights, demographic pressures, refugees, and displaced persons. In 2008, 60 countries were identified as failed states. Significant numbers of them are also food-insecure. Figure 6 shows the

Figure 6: Correlations between Food Insecurity and Failed States

	Transitory Food Insecurity	Chronic Food Insecurity	
Top 30 Failed States	Haiti (14) Nepal (23) Timor Leste (25) Pakistan (9) Bangladesh (12) Kenya (26)	**Afghanistan (7)** **Burundi (24)** **Central African Republic (10)** **Chad (4)** **Congo, Democratic Republic of (6)** **Congo, Republic of (26)** **Côte d'Ivoire (8)** **Ethiopia (16)** **Guinea (11)** **Iraq (5)** **Korea, Dem. People's Rep. of (15)** **Somalia (1)** **Sudan (2)** **Uganda (16)** **Zimbabwe (3)** **Sri Lanka (20)**	Top 30 Failed States
Bottom 30 Failed States	Guinea Bissau (32) Bolivia (55) Indonesia (60) Moldova (49)	**Eritrea (44)** **Mauritania (47)** **Sierra Leone (31)** **Liberia (34)**	Bottom 30 Failed States
	Transitory Food Insecurity	Chronic Food Insecurity	

Note: Parentheses denote failed state ranking.
Sources: Foreign Policy *Failed States Index (2008) and FAO.*

countries that are both labeled by FAO as food-insecure and identified in *Foreign Policy*'s Failed States Index.

Thirty of the FAO's designated 36 food-insecure countries are included in the Failed States Index. In other words, half of *Foreign Policy*'s failed states have been facing food insecurity. Among the top 30 failed states, 16 are facing chronic food insecurity, while all the chronically food-insecure states are in the Failed States Index with the exception of Swaziland. Ten out of the 15 countries facing transitory food insecurity over the last three years are included in the Failed States Index—and Pakistan is one of them.

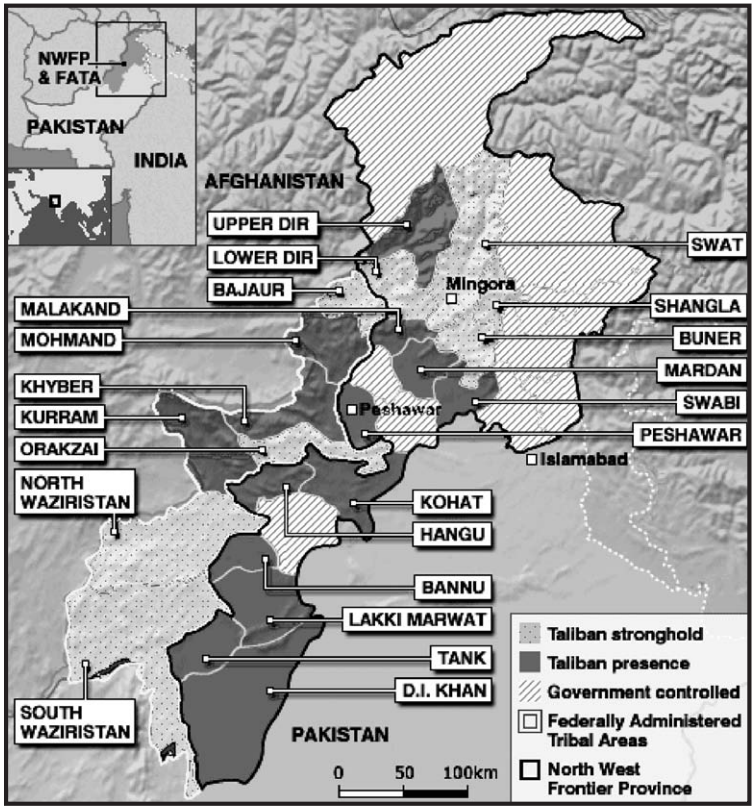
Figure 6 also shows that countries facing challenging law and order situations, violence, conflicts, and melting governance structures are more likely to have food crises. Somalia, which tops the Failed States Index rankings, has long suffered from civil strife and food shortages due to adverse weather conditions. Yet humanitarian agencies struggle to provide food and relief services to poor and malnourished population groups in areas of conflict. Recently, three people were killed when humanitarian workers were distributing food in a Somali refugee camp. Additionally, the WFP now needs escorts for its food supply vessels because of the threat of pirate-led hijackings.[22]

The Case of Pakistan

Pakistan is currently suffering through the toughest period of its history, with violence, suicide bombings, and kidnappings prevalent in society. From 2003 through 2009, there were more than 19,000 deaths in Pakistan—civilians, security personnel, and militants—from terrorist violence, and one-third of these fatalities were innocent civilians.[23] In 2009, BBC Urdu Service conducted research in the restive areas of the NWFP and FATA, and published a conflict map of the region as shown in Figure 7.

In Figure 7, "Taliban stronghold" represents the districts and tribal agencies where the Pakistani government has completely lost its writ, where the local law and order administration has ceased to exist, and where the Taliban has established *sharia* courts and its commanders exercise complete authority. "Taliban presence" refers to those districts

Figure 7: Conflict Map of Pakistan



Note: This map was produced in June 2009. The situation on the ground has since changed in a number of the areas depicted in this graphic.
Source: BBC Urdu Service, http://news.bbc.co.uk/2/hi/south_asia/8046577.stm.

and agencies where Taliban militants have a permanent presence in certain pockets, which are no-go areas for the local administration. In such areas, extremists attack schools, music shops, and government buildings. The government does not have full control over these areas. "Government controlled" denotes areas where government machinery is functioning, but does not mean that the Taliban does not have the capacity to challenge the law and order situation of the area by kidnapping local people.

Out of the 24 NWFP districts and seven tribal agencies, only nine have government control. Figure 8 shows that "Taliban stronghold" areas are also extremely food-insecure. Out of 22 conflict districts and agencies (that is, those either classified as "Taliban stronghold" or "Taliban presence"), 15 are extremely food-insecure. Out of nine "government controlled" districts, only two are extremely food-insecure. This reveals that countries facing governance stress are likely to face food insecurity.

Figure 8: Relationship Between Taliban Stronghold and Food Insecurity in Pakistan

	Taliban Stronghold	Taliban Presence	Government Controlled
Extremely Food-Insecure	North Waziristan (3)* Shangla (6)* South Waziristan (8)* Orakzai (20)* Bajaur (23)* Swat (25)* Buner (34)* Lower Dir (36)*	Hangu (10)* Upper Dir (12)* Khyber (13)* Kurram (14)* Mohmand (16)* Bannu (29)* Tank (32)*	Kohistan (7)* Battagram (18)*
Very Food-Insecure		Lakki Marwat (51)*	Chitral (33)* Karak (44)* Mansehra (47)* Nowshera (49)*
Less Food-Insecure		Mardan (57)* Kohat (59)* D. I. Khan (60)* Swabi (61)* Malakand (68)*	Charsada (63)*
Moderately Food-Secure		Peshawar (83)*	Haripur (95)*
Reasonably Food-Secure			Abbotabad (116)*

*Note: * = Food Insecurity Ranking.*
Sources: BBC Urdu Service and SDPI/World Food Program.

PROPOSITION 4

Food-related social unrest is beginning to place new burdens on already-weak or borderline governance systems in many countries, and persistent food insecurity is likely to make the situation worse.

The Global Context

The recent hike in global food prices has triggered social unrest and food riots in many countries that had not previously been reported as transitory or chronically food-insecure. In 2008, the Earth Policy Institute published a list of 20 countries where food price-driven unrest was reported in one way or the other, as reflected in Figure 9.[24] Eleven out of these 20 countries are not on the list of transitory or chronically food-insecure nations mentioned earlier, in Figure 4.

Fourteen out of the 20 countries where food riots have been reported are included in the Failed States Index, and also have poor human development indices (for almost all 14 states, this measure exceeds 100). Additionally, one observes in Figure 9 that the countries with the worst governance indicators—such as Afghanistan and Côte d'Ivoire—also have chronic food insecurity.

Over a key period in 2007 and 2008, states such as Cameroon witnessed some of the worst food-driven instability, with 24 people killed and 1500 arrested due to the rise in fuel and food prices. Demonstrations and riots that killed more than 12 people were reported from Yemen. Six people died in Egypt after the price of bread doubled within a few months. Three people died in a stampede in China to grab cooking oil bottles at a discounted price. Three hundred people were arrested in Burkina Faso, 34 in Morocco, and several dozens in Senegal and Uzbekistan while demonstrating against the rising price of food. Thailand had to depute its army in rice fields after Thais started stealing rice once the commodity became so expensive on the market. Finally, robbers in Trinidad and Tobago looted two vans carrying food and dairy products.[25]

Haiti, which has repeatedly faced food crises, also has very poor governance indicators. More than five people, including a UN peacekeeper, were killed, and 200 injured, in food riots in 2008.[26] Continued conflict

Figure 9: Countries Facing Food Riots and Social Unrest

Countries	Failed State Ranking	Human Development Index (2007-08)	Governance Indicators (2007) Percentile Rank (0-100)					
		HDI Rank	Voice & accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
Afghanistan	7		13.9	1.4	8.1	2.9	0.5	1
Burkina Faso	36	176	38.5	46.2	19	40.8	41	46.9
Bangladesh	12	140	28.8	8.7	22.3	20.9	24.8	9.7
Cameroon	33	144	21.2	31.3	17.1	24.3	12.9	15.9
China		21	5.8	32.2	61.1	45.6	42.4	30.9
Côte d'Ivoire	8	166	11.1	3.4	5.2	18	2.4	7.2
Egypt	40	112	11.5	21.6	38.9	43.2	51.9	35.7
Ethiopia	16	169	13.5	7.2	37.4	18.9	38.1	27.5
Haiti	14	146	26	10.6	7.6	20.4	4.8	3.4
Indonesia	60	107	42.8	14.9	41.7	43.7	27.1	27.1
Morocco		126	29.3	27.4	54.5	51	51	52.7
Mauritania	47	137	26.4	31.7	27	39.8	33.3	38.2
Pakistan	9	136	18.8	1	28.4	28.6	19.5	21.3
Philippines	59	90	43.3	10.1	56.4	50.5	33.8	22.2
Senegal		156	48.1	37.5	45	40.3	45.2	37.7
Thailand		78	29.8	16.8	61.6	56.3	52.9	44
Trinidad and Tobago		59	65.9	44.2	66.4	71.4	49	55.1
United Arab Emirates		39	23.1	72.6	79.1	71.8	69.5	81.6
Uzbekistan	26	113	2.9	9.6	24.6	5.8	13.3	14.5
Yemen	21	153	17.3	17.3	13.3	23.8	18.1	33.3

Sources: Earth Policy Institute, Foreign Policy *Failed States Index (2008), UNDP Human Development Report 2007-2008, and World Bank Worldwide Governance Indicators.*

and violence have consequently produced a situation in which half the population subsists on less than $1 a day in income. The horrific earthquake in January 2010 has made an already-dire situation even worse.

Food price hikes have put immediate stress on the governance structure of these states, and governance indicators could deteriorate in these countries if they face recurrent food crises in the future.

The Case of Pakistan

Pakistan has also suffered during the global food crisis. There was a shortage of wheat during 2007-08, and people demonstrated against higher food prices; inflation in food items spiked to 30 percent in 2007. Poverty is a growing concern in the country, as the recent food crisis has brought millions of people into poverty and hunger. In September 2009, 14 women and children died in a stampede when free food was being distributed in Karachi before Eid.

Today, the country faces a severe shortage of sugar, and prices have almost doubled. The patience of the Pakistani people is disappearing very quickly, which may trigger full-scale food riots. It would be very hard for a country already at war against extremism to control both frontiers.

PROPOSITION 5

A number of the most vulnerable countries in the world are facing a triple threat: very low human development, very high food insecurity, and dangerously high malgovernance.

The Global Context

Low-ranking countries in the United Nations Development Program's *Human Development Report 2007-2008*[27] tend to be susceptible to food insecurity and eroding governance structures. Geographically, all these countries are from the Africa region, as shown in Figure 10. It should be noted, however, that Afghanistan, Iraq, and several other chronically food-insecure nations with high Failed States Index rankings have not had their Human Development Indicator (HDI) rankings reported. Figure 10 shows that countries having low HDI are vulnerable to food stresses; food riots have been reported in four countries appearing in the chart: Senegal, Côte d'Ivoire, Ethiopia, and Burkina Faso.

Interestingly, 16 out of the 22 countries in the low HDI cluster are failed states, with 10 of these among the top 30 failed states. One concludes that countries with low HDI are also susceptible to, and currently experiencing, stress on governance. Tanzania, Benin, Zambia, Mozambique, Mali, and Niger are nations whose government effective-

ness and rule of law indices are already on the borderline. Any stress on their food supplies, or a hike in prices, could very well worsen their governance structures, given that they already have very low HDI.

Figure 10: List of Low Human Development Countries and Correlations with Failed States and Food Insecurity

HDI Ranking	Low HD Countries	Failed States Index	Food Insecurity		Governance Indicators (2007) Percentile Rank (0-100)	
					Govt Effectiveness	Rule of Law
156	Senegal			Food Riots	45	45.2
157	Eritrea	44	Chronic		8.5	11.9
158	Nigeria	18			14.7	8.6
159	Tanzania, U. Rep. of				39.3	41.9
160	Guinea	11	Chronic		3.8	3.8
161	Rwanda	42			43.6	30.5
162	Angola	56			11.4	6.7
163	Benin				33.6	36.2
164	Malawi	29			30.8	44.8
165	Zambia				31.3	31.4
166	Côte d'Ivoire	8	Chronic	Food Riots	5.2	2.4
167	Burundi	24	Chronic		6.6	9.5
168	Congo. Dem. Rep.	6	Chronic		1.4	1.4
169	Ethiopia	16	Chronic	Food Riots	37.4	38.1
170	Chad	4	Chronic		4.3	5.3
171	Central African Republic	10	Chronic		4.7	2.9
172	Mozambique				40.3	29
173	Mali				34.6	45.7
174	Niger	22			17.5	20
175	Guinea-Bissau	32		Transitory	10	6.2
176	Burkina Faso	36		Food Riots	19	41
177	Sierra Leone	31	Chronic		11.8	11

Sources: UNDP Human Development Report 2007-2008, Foreign Policy *Failed States Index, FAO, World Bank Worldwide Governance Indicators.*

The Case of Pakistan

The UNDP's *Human Development Report 2009*[28] shows that Pakistan ranks 141st out of 158 countries. The human development indicators of Pakistan have improved since 1980, but its pace is very slow compared to the overall South Asia performance.

Figure 11: Low HDI Districts and Correlations with Food Insecurity and Conflict

Cities	HDI Ranking	HDI	FI Ranking	Conflict
Dera Bugti	91	0.285	2	Military Action
Shangla	90	0.332	6	Taliban Stronghold
Kohistan	89	0.332	7	Government Controlled
Tharparkar	88	0.343	1	
Jhalmagsi	87	0.345	27	Refugees
Kharan	86	0.346	5	Refugees
Kohlu	85	0.348	19	Military Action
Bolan	84	0.346	11	
Batgram	83	0.363	18	Borderline
Upper Dir	82	0.369	12	Taliban Presence
Awaran	81	0.381	24	Military Action
Tank	80	0.384	32	Taliban Presence
Killa Abdullah	79	0.387	26	
Gwadar	78	0.392	58	
Jacobabad	77	0.393	46	

Note: FI=Food Insecurity.
Sources: UNDP-Pakistan, SDPI/World Food Program, and BBC Urdu Service.

A 2003 report by UNDP-Pakistan,[29] which measures human development at district levels, shows that the districts with low HDI are also likely to be extremely food-insecure; six out of the 13 districts in Pakistan with the lowest HDI are either Taliban strongholds or under military siege to restore the government's writ.

THE WAY FORWARD

In summary, countries with chronic food insecurity are likely to have worse governance systems, to appear in the Failed States Index, and to suffer from low HDIs.

High food prices seem to be here for the long term. The magnitude of global food insecurity could become very serious if not handled immediately, and could turn into a political tipping point beyond the control of global leadership.

Pakistan is a classic case study. Historically, it has produced surplus wheat, yet millions of its people live without access to food. Unfortunately, food security has not often been reflected in the national policy discourse of Pakistan, and has never been given any attention in the policymaking process. To the extent that food security is considered as a policy issue, it is thought of in the context of the production process. The policymaking thrust is more on enhancing production to fulfill national demand; food security has rarely been seen as an access issue.

The social dimensions of food insecurity have been neglected by successive governments. This neglect has brought dire consequences for human development and the maintenance of law and order in Pakistan. There is a disconnect in the policymaking process, with an absence of links between food security and other social and political issues.

The government of Pakistan has an obligation to provide food security for its people. Article 38 of the Constitution of Pakistan explicitly says:

> *"The State shall: (d) provide basic necessities of life, such as food, clothing, housing, education and medical relief, for all such citizens, irrespective of sex, caste, creed or race…."*

A new social contract, based on constitutionally explicit guidelines, is required in order to devise a policy for food security bundled with education and healthcare—the pillars of human development. Pakistan is also a signatory of international covenants related to food security that may provide policy guidelines to attain food security at household and individual levels. To attain these targets, food security needs to be integrated into the policymaking process rather than dealt with in isolation. Collective efforts must be introduced on a war-like footing, and without the traditional platitudes and rhetoric. A coherent, coordinated, and comprehensive effort (with firm commitments from all stakeholders) is required to address this challenge on both a short-term and long-term basis.

Law enforcement agencies have made good progress in restoring peace in Pakistan's restive areas. Still, it is important to provide help and support to people who have been displaced during military operations in these areas. It will be hard to maintain this fragile peace unless social and development policies ensuring food security and human development on a long-term basis are put in place. Meanwhile, at the national level, the country's population is expected to double by 2050. Pakistan's government needs to have a food security vision for 2050 in order to cater to the food demands of its millions of people.

Ultimately, this is not a war against armies, ideologies, or nations; rather, it is a war against the challenges faced by our civilization. It is more about transforming this earth into a sustainable, peaceful, and resourceful place. As the author Pearl S. Buck has said, "A hungry man can't see right or wrong. He just sees food."

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The Social Dimensions of Food Insecurity in Pakistan

Abid Qaiyum Suleri

Pakistan is passing through one of the most difficult times of its history. It is facing five "F" crises—food, fuel, fiscal, functional democracy, and frontier (meaning the war on terrorism, which spills across the frontier dividing Pakistan and Afghanistan and into the Northwest Frontier Province [NWFP] and Baluchistan). The five "Fs" have a multiplier effect on each other, and it seems extremely difficult to find a solution to any single crisis without addressing the rest of them.

Take the fuel crisis, for instance. Pakistan is energy-deficient not because of production incapacity, but because of the lack of a fiscal cushion to procure fuel that would in turn run the thermal turbines. The lack of a fiscal cushion is partly a result of malgovernance, as well as wrong-headed spending priorities due to the lack of a functional democracy. Governance problems also affect social access to food, where certain groups are excluded from the food supply chain. Likewise, fiscal constraints affect economic access to food because of food price hikes, whereas the fuel crisis affects physical availability of food (production and transportation of food). The situation becomes further complicated with a war situation in Pakistan's NWFP; a quasi-war situation in another province, Baluchistan; and a deteriorating law and order situation in the remainder of Pakistan. All of the above challenges reinforce each other, posing severe threats to national security and sovereignty.

The government of Pakistan is trying to respond to these challenges. However, it has to prioritize among individual, national, regional, and global security. Pakistan has been ruled by military governments for half its life; many allege that barring some exceptions, much of the other half was ruled by military-backed civilian governments. The huge influence of the armed forces at the key decision-making levels has resulted

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in national security taking priority over all other security concerns. Achieving "defense-oriented" national security has been the ultimate guiding principle for successive governments of Pakistan, and in the "national security interest" they often have been willing to compromise on individual security. On top of this, the military has complete monopoly over what it defines as national security interests.

However, one needs to understand that like the "five F crises," the four levels of security mentioned above are not mutually exclusive; rather they are interconnected and cumulative. Their interconnectedness has made it extremely difficult to address national security when other levels of security are being compromised.

Groups of varying colorations (such as religious militias, ethnic groups, and nationalist groups) find it extremely easy to create parallel states within Pakistan when the "national" or formal state fails to take care of individual security and cannot provide basic services such as food, shelter, health, and education to everyone. The growing "Talibanization" in Pakistan can be understood in this context. Generally, "Talibans" are perceived to be Islamic hardliners, often linked to al-Qaeda, who want to implement a rigid version of Islam. However, many "Talibans" are those who are outraged by chronic hunger, endemic corruption, unfair courts, and the government's inability to supply basic education or other services. It is also pertinent to mention that in the Swat area of NWFP, some Talibans have redistributed land forcibly. Such classic "Robin Hood"-style strategies enable the Taliban to earn the sympathies of local communities in many instances.

Sociopolitical instability in Pakistan emerging from individual insecurity may affect regional as well as global security. The involvement of Pakistani militants in the November 2008 Mumbai mayhem, and the alleged links of the Pakistani Taliban to al-Qaeda, illustrate how sociopolitical instability in Pakistan is threatening regional and global security. This situation provides external actors an excuse for interference—such as the drone attacks by U.S. forces.

FOOD INSECURITY AND MILITANCY

Pakistan is a declared nuclear power. The Pakistan military is the world's seventh-largest armed force, and is quite capable of addressing all but the most serious threats. Strong defense might have helped in achieving

national security. However, security at the individual level remains quite questionable. According to recent reports from the UN World Food Program, almost 50 percent of the Pakistani population is food-insecure. Food inflation reached its peak in 2007–08 when it soared to 36 percent. Steady increases in the number of food-insecure individuals have led to class conflict and violence between "haves" and "have-nots," which result in social instability.

According to research carried out in 2003 by the Sustainable Development Policy Institute of Pakistan, in collaboration with the World Food Program, 52 percent of the total rural population in 80 out of Pakistan's 120 districts is food-insecure. The 13 most food-insecure districts include Tharparkar (Pakistan's largest desert), Dera Bugti (one of the most troubled districts in Baluchistan, where nationalist leader Akbar Bugti was assassinated during President Pervez Musharraf's regime), North Waziristan, Musa Khel, Kharan, Shangla, Kohistan, South Waziristan, Diamer, Hangu, Bolan, Upper Dir, and Khyber. The international community might not have heard of these districts in the context of food insecurity. However, many people would easily recall that these districts are perceived as the "axis of evil" within Pakistan. There is no empirical evidence to prove that food insecurity is the only cause of militancy in the above-mentioned districts. However, it is an established fact that food insecurity leads to violence and conflict.

Pakistani armed forces have already started a full-scale operation against militants in North Waziristan, Shangla, Kohistan, South Waziristan, Hangu, Upper Dir, and Khyber. Whether this operation will be helpful in eliminating the social factors that partly invoke militancy is anybody's guess.

Recognizing food insecurity as a major cause of militancy and violence, many analysts believe that in Pakistan, a "mullah-marxist nexus" is operating where religious forces are exploiting the (anti-elite) feelings of lower- and lower-middle-class food-insecure people, motivating unemployed youth to commit heinous crimes such as suicide attacks against innocent people. Here it is pertinent to mention that most suicide bombers have been young (between 15 and 24 years of age).

Compromised security at one level (individual security in Pakistan's case) compromises security at each of the other levels (national, regional, and global). Food scarcity heightens the potential for conflict, which

translates into a security threat. Individual cases of relative hunger, marginalization, and poverty can turn into collective deprivation. This collective deprivation can take on a gender, class, or national identity and lead to conflict and violence.

The Baluch national movement offers an example here. Dera Bugti in Baluchistan is the second-most food-insecure district in Pakistan. Since the worst district (Tharparker) is a desert, for all practical purposes Dera Bugti is the country's most food-insecure district. Natural gas was discovered in Dera Bugti back in the early 1950s, and since the 1960s has been supplied to the rest of Pakistan for domestic and industrial consumption. Yet only in 1984 was Quetta, the Baluchistan provincial capital, supplied with natural gas. Chronic food insecurity in Baluchistan and especially in its gas-producing districts aggravated the sense of marginalization and deprivation to an extent where many Baluchis started believing that Punjab and Sindh provinces were exploiting their resources. As a consequence, Baluchistan has seen the rise of many anti-federation movements. A widely publicized reaction to the perceived hegemony of the federal government was the 2009 kidnapping in Quetta of John Solecki, the regional head of the Office of the UN High Commissioner of Refugees, by a nationalist group calling itself the Baluchistan Liberation Union Front. He was subsequently released with a message from his kidnappers saying that they wanted to highlight the miseries of their people to the international community.

Here one must mention that while food insecurity seems to be directly linked to violence in most cases, all types of violence may not necessarily originate from food insecurity and poverty. Karachi is a special case in Pakistan where conflict is political and only recently ethno-political.

"EXTRAORDINARY BEHAVIORS"

The point that one needs to understand is that a high prevalence of food insecurity leads to intensified "extraordinary behavior" of individuals. These extraordinary behaviors include (but are not exclusive to) participating in anti-social activities, working as bonded labor, selling kidneys, selling children, and committing suicide. Half of the food-insecure population of Pakistan is behaving extraordinarily. In Pakistan, 22 percent of the elites own 85 percent of the farmland, while 78 percent of

the population owns only 15 percent of the land (or in most cases do not own any land, but serve as tenants). This situation results in large numbers of individuals who might do anything in their sheer desperation and frustration. Many of them commit suicide to end their misery. Others kill their dependents, to whom they cannot afford to provide a square meal.

For many desperate individuals, shrines and madrassas (religious schools) are the complete solution for the problems they face in their day-to-day lives. They go to shrines for spiritual healing when the public health system fails them. Most shrines, moreover, are places where one can get free meals that pilgrims and believers offer there. They send their children to cost-free boarding schools—madrassas—when the public education system cannot absorb them. Madrassas also become handy where public schools simply do not exist. Thus, the failure of the public education system has made madrassas very attractive for the common person. As a matter of fact, religious groups offer complete social safety nets that the governmental sector cannot, due either to fiscal constraints or to governance issues. Hence, people tend to have a very strong belief in these institutions due not only to religious reasons but also to economic reasons.

While most of the religious schools and shrines in Pakistan are symbols of peace, tolerance, and harmony, there are quite a few that are being run by religious hardliners who believe in a particular version of Islam and who feel obliged to challenge any "vice" through force. On many occasions, they have challenged the writ of the state, declaring state institutions as un-Islamic. They can easily get support from the poor and marginalized sections of society, people who are often let down by Pakistan's inadequate public service delivery system.

Chronically food-insecure people, who are often illiterate and marred by poverty, become easy prey and can be brainwashed by militant leaders, who offer complete economic security for these people's dependents, assure them a confirmed place in heaven, and turn them into suicide attackers to eliminate the perceived nexus of imperialist forces led by the United States. According to the interior minister of Pakistan, a suicide bomber is paid up to U.S. $12,000, an amount that would be sufficient for his dependents to live a decent life. These groups behaving extraordinarily not only create sociopolitical instability, jeopardize the country's

economic activities, and threaten all foreign direct investors, but also pose a direct challenge to regional and global security.

In the aftermath of the 9/11 attacks, the United States provided around $11 billion to Pakistan in the form of budgetary support, economic assistance from USAID, military assistance, and Coalition Support Funds from 2002 to 2008. This money, if spent judiciously and with political will, could have alleviated the suffering of millions facing extreme poverty and chronic hunger, thereby saving Pakistan from growing militancy. Alas, it was not.

Priorities in public spending matter. The composition of current account expenditures reveals that, on average, a quarter of these expenditures are made on defense, a second quarter on debt repayment, a third quarter on public sector administration, and the final quarter on public sector development. The defense budget cannot be reduced due to the volatile security situation. Debt repayment cannot be reduced as the country keeps on borrowing to meet its fiscal deficit and has to repay its lenders. The running cost of jumbo-sized cabinets, numerous ministries, and day-to-day administration cannot be reduced in the absence of functional democracy. Hence, public sector development expenditures always bear the brunt of fiscal constraints.

It is not surprising that in Pakistan, average public spending on health is less than 1 percent of GDP, and on education it is around 2.5 percent of GDP. On debt servicing, it is around 6 percent of GDP, and on military expenditures it is 4 to 5 percent of GDP. One can argue that the evil of militancy should have been nipped in the bud by focusing on social sector development in the areas that were chronically food-insecure and now are at the center of conflict in Pakistan.

The strategy of achieving national, regional, and global security at the cost of individual security, and the creation of strategic assets (such as religious warlords since the Afghan war in the late 1970s) at the cost of moderate society, have indirectly resulted in the internal displacement of almost three million people in NWFP. Almost 25 percent of these displaced people are living in internally displaced persons (IDP) camps. Food security for all of them is severely threatened. Major UN agencies such as the World Food Program and the UN Development Program have announced that they do not have enough resources to consistently support and feed the victims of the war on terrorism. The government

of Pakistan and international coalition forces are losing in the IDP camps what they are winning on the battlefield. Food insecurity, a lack of basic amenities, and harsh summer weather have led the displaced to think that they were safer and more secure under the rigid rule of the Taliban.

Unfortunately, hunger is perceived only as a humanitarian concern. The national government, support agencies, and donor countries have focused their efforts on providing short-term relief on compassionate grounds. However, fighting hunger is not merely charity work. The example of Pakistan clearly indicates that in many cases, groups of people deprived of their individual security can sabotage national, regional, and global security.

PARADIGM CHANGE

So what needs to be done differently? First, the situation requires a change in paradigm where individual hunger is perceived as a national security threat. Such a paradigm shift would result in greater resources being channeled to improve food security. It would also result in reprioritization of public spending, so that social development would be given priority over national defense, and the benefits of such spending would accrue to individuals and not only to the state.

Second, perceiving hunger as a national, regional, and global security threat, the "Friends of Pakistan"—countries that are helping Pakistan in the war on terrorism—should realign their strategy and try to turn the pain of hunger into an opportunity for social transformation, better awareness about human rights, women's empowerment, girls' education, adult education, and exposure to a secular face of the world. The international community should start investing in developing the social and human capital of the chronically food-insecure people of the Federally Administered Tribal Areas (FATA), as well as NWFP's internally displaced persons. This would not only directly aid those harmed because of their forced evacuation, but also go some way toward fostering a more stable environment.

The major actors combining relief with development should have been various USAID projects focusing on FATA and NWFP. Interestingly, none of them has been visible in any relief camp (perhaps due to security concerns). However, they should escalate their activities dramatically,

channeling part of their multi-million dollar budget toward social development efforts for individuals rather than for the state.

It is time for the government of Pakistan and its international partners to step up activities that improve the distribution of food to those in need, increase food absorption capacities in camps for the internally displaced, and expand the reach of humanitarian operations already under way. It is not the atomic bomb but the courage of the individual that is needed for social change.

There are three types of militants in Pakistan: Islamic hardliners; those who feel that successive governments failed them and as a consequence oppose the establishment; and anti-social elements who have joined the militant bandwagon. The last two groups can easily be turned into peaceful citizens by ensuring their food security. It is just a matter of choosing a "butter rather than guns" paradigm.

Gender Issues in Children's Nutrition Security in Pakistan

Gautam Hazarika

This essay seeks to acquaint lay readers with the salient issues of gender in young children's nutrition security in Pakistan. It will be useful at the outset to distinguish between food security and nutrition security. Food security, defined as access to sufficient food for an active and healthy life, is normally viewed in caloric terms. However, calorically sufficient food does not assure adequate nourishment since deficiencies in micronutrients such as iron, vitamin A, and iodine cause malnourishment even when diets are calorically adequate. For example, the higher incidence of iodine deficiency diseases like goiter and cretinism in many inland mountainous regions of the world, such as northern Pakistan, is due to the lack of seafood in diets and subsistence upon crops grown in iodine-poor soil rather than caloric insufficiency.

Food security is not tantamount to nutrition security for a second reason. Infection can reduce appetite, hinder the absorption of nutrients, lead to the expenditure of calories in fever and in the combating of illness, cause the discharge of nutrients in vomiting and diarrhea, and impair metabolism. The prevalence of infection from, for example, unsafe drinking water, deficient sanitation, and lack of health care can lead to malnutrition even when sufficient quantities of micronutrient-rich food are available. Infection and micronutrient deficiencies call for medical and public health interventions. Therefore, besides summarizing the important gender issues in children's access to food in Pakistan, this essay discusses the role of gender in access to medical care and the critical public health program of childhood immunization.

Pakistan, with an annual gross national income per capita of U.S. $870, has indisputably low levels of children's well-being.[1] Depending

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on the nutritional standard applied, 31 or 38 percent of Pakistani children ages zero to five are malnourished in terms of being underweight, and of every 1,000 newborns, 90 perish before reaching the age of five. These twin facts are related in that even though malnutrition must be unusually severe to be the direct cause of death, even moderate malnutrition can lead to death indirectly by making children more susceptible to infection. Indeed, 53 percent of under-five child mortality may be attributed to malnutrition, according to the World Health Organization.[2]

Low levels of children's well-being in Pakistan are certainly not an anomaly in the region. Neighboring India has an under-five malnutrition rate of 44 percent and an under-five mortality rate of 72 per 1,000. Comparable figures for Bangladesh are 39 percent and 61 per 1,000. Nepal has an under-five malnutrition rate of 39 percent and an under-five mortality rate of 55 per 1,000. In the United States, by contrast, only between 1 and 2 percent of zero- to five-year-olds are underweight, and only 8 of every 1,000 newborns perish before attaining the age of five. It is notable that nations like Senegal and Zambia in sub-Saharan Africa suffer distinctly less child malnutrition than Pakistan despite possessing lower annual gross national incomes per capita. Indeed, South Asia has the world's highest rates of child malnutrition even though it is not any less developed economically than sub-Saharan Africa. This puzzle has been termed "the South Asian enigma." It is now understood that issues of gender are central to the inordinately low level of children's nutrition security in South Asia, so some discussion of the South Asian enigma will be helpful.

THE SOUTH ASIAN ENIGMA

In South Asia, 41 percent of zero- to five-year-old children are malnourished in terms of being underweight.[3] In sub-Saharan Africa, the under-five malnutrition rate is considerably lower at 27 percent. It is notable that gross national income per capita in South Asia, at U.S. $880, is not much lower than sub-Saharan Africa's U.S. $951. In fact, measured in purchasing power parity terms (that is, when differences in costs of living between these regions are accounted for), gross national income per capita is lower in sub-Saharan Africa. Besides, income is more inequitably distributed in sub-Saharan Africa. Thus, South Asians do not seem poorer than sub-Saharan Africans, so the argument that more

acute poverty in South Asia explains its higher rate of child malnutrition is not a compelling one.

The under-five mortality rate in sub-Saharan Africa, at 146 per 1,000, is notably higher than South Asia's 78 per 1,000. Since 53 percent of under-five child mortality may be attributed to malnutrition, might it be that the lower incidence of malnutrition in sub-Saharan Africa is due to its smaller *surviving* number of malnourished children? Fifty-three percent of 146 is approximately 77, and this same percentage of 78 is about 41. In other words, roughly 77 of every 1,000 newborns in sub-Saharan Africa perish due to malnutrition before reaching the age of five, whereas the corresponding figure for South Asia is 41. If, of every 1,000 newborns, the same number (41) perished of malnutrition before attaining age five in sub-Saharan Africa as in South Asia, there would be 36 (77 less 41) more surviving malnourished children of these 1,000 in sub-Saharan Africa. By a rudimentary calculation, the addition of these children to the rolls of the surviving malnourished in sub-Saharan Africa would raise the under-five malnutrition rate there from 27 percent to only about 30 percent.[4] The under-five malnutrition rate in South Asia, at 41 percent, would continue to dominate.

Neither can South Asia's higher child malnutrition rate be attributed to its faring worse than sub-Saharan Africa in per capita food production. Sub-Saharan Africa's record in this regard is in fact worse than South Asia's, since the Green Revolution has been much less successful in Africa than in Asia. Another popular belief, that malnutrition in South Asia is related to widespread vegetarianism, is easily debunked. Animal sources of protein being dear, the poor in sub-Saharan Africa are perforce largely vegetarian. Besides, South Asia is not as vegetarian as is believed. In India, the supposed bastion of vegetarianism, fully 58 percent of households consume eggs, fish, or meat.[5] Indeed, per capita daily protein consumption in South Asia, at 58 grams, is higher than sub-Saharan Africa's 53 grams.

Low birth weight is a faithful predictor of child malnutrition in that it is closely associated with growth retardation in childhood. Twenty-eight percent of newborns are underweight in South Asia, as opposed to 14 percent in sub-Saharan Africa.[6] The markedly higher incidence of low birth weight in South Asia supplies a hint that a major factor in the South Asian enigma is the low status of South Asian women. Low

birth weight results from either preterm birth or restriction on the intrauterine growth of the fetus. Since preterm birth is uncommon, the high incidence of low birth weight in the developing world points to widespread malnutrition in the womb, caused by poor maternal health and nutrition. Indeed, poor maternal nutrition before conception, the short stature of mothers due mainly to malnutrition and illness in childhood, and poor nutrition during pregnancy are the main reasons for the high incidence of low birth weight in less developed countries. So women's well-being plays a critical role in children's nutrition security by way of its effect on prenatal nutrition.

It plays a pivotal role in children's nutrition postnatally as well by affecting the quality of child care. Child care comprises such aspects of care as breast feeding, introduction of solid foods, and child hygiene. There is evidence that South Asian mothers deliver a lower quality of child care than do mothers in sub-Saharan Africa. For example, growth retardation is relatively rare among zero- to six-month-old infants in sub-Saharan Africa, but is common enough at four months in South Asia. Perhaps the ability of South Asian mothers to breast feed successfully is compromised by their own deprivations. Indeed, it is difficult for poor, unhealthy, and oppressed women to provide a high quality of any form of child care, and so the care *of* mothers closely determines care *by* mothers. It appears mothers are better cared for in sub-Saharan Africa than in South Asia. For example, 31.6 percent of adult Pakistani women are underweight, whereas corresponding figures for Cameroon, Lesotho, Côte d'Ivoire, and Senegal, countries about as developed as Pakistan in terms of their gross national incomes per capita, are merely 6.7 percent, 6 percent, 8.2 percent, and 18.2 percent, respectively.

It is now widely held that the higher well-being of women in sub-Saharan Africa, from which their children derive greater nutrition security, stems from their wider freedom and opportunities, manifested in, for example, their higher rates of economic activity. As high as 63 percent of 15- to 64-year-old women participate in the labor force in sub-Saharan Africa, and 42 percent of the labor force is female, whereas the corresponding figures for South Asia are, respectively, 38 percent and 29 percent. The causal relation between women's freedom and opportunities and beneficent children's outcomes has been formalized in "collective models" of the household.

COLLECTIVE MODELS OF THE HOUSEHOLD

Gary Becker, winner of the 1992 Nobel Prize in economics, who pioneered economic studies of the family in the mid-1960s, considered the household a monolithic unit acting as if it were a single person. Becker assumed either that household members were of one mind, or that they were dissimilar but directed by a benevolent household head. This view of households has been termed the "unitary model." It has been challenged on grounds that households frequently consist of vastly unlike members, who make decisions collectively by a complex process. Thus, alternate "collective models" have arisen, in which household decisions, principally with regard to the internal distribution of resources, are arrived at by way of bargaining between household members. Those members with greater bargaining power appropriate larger shares of household resources. Such bargaining might occur between husband and wife, for example. It follows that a rise in wives' bargaining power would improve their well-being. Such better-off women would carry healthier fetuses. More control over the disbursement of household resources would enable them to provide a higher quality of child care, with the result that their children would be better-nourished postnatally as well. Collective models typically hold that a woman's bargaining power is positively related to her freedom and opportunities, factors that broaden her options outside her marriage (that is, her fall-back options), and so these models predict a negative relation between the extent of the subjugation of women and children's well-being.

There has been vigorous empirical testing of Becker's unitary model against collective models. The decisions of a household behaving as if it were a single person would not be influenced by the incomes of its individual members once their combined or pooled income is accounted for, so tests of whether households pool income have been a means of assessing the unitary model. The finding, for example, that spending on food is positively related to the share of household income contributed by women will indicate that men and women do not pool their incomes, and so supports rejection of the unitary model. It is likely women's incomes are a factor in their bargaining power, so tests of whether husbands and wives pool their incomes may be viewed as constituting a type

of test of whether measures of women's bargaining power are correlated with household purchases of, for example, food and health care, and, hence, correlated with the outcomes thereof such as child nutrition and health. These tests, conducted upon data from developed as well as developing countries, have overwhelmingly rejected the unitary model in favor of collective models.

For example, Thomas discovers that family health outcomes in Brazil, such as child survival probabilities, are much more improved by increases in mothers' than fathers' unearned income.[7] Viewing earned income as a measure of bargaining power, Hoddinott and Haddad find that an increase in the share of household income earned by women in Côte d'Ivoire raises the proportion of the household budget spent on food, while reducing the budget shares of alcohol and cigarettes.[8] And considering female household headship a measure of women's bargaining power, Handa discovers that female-headed households in Jamaica allocate a larger share of their budgets to child and family goods.[9]

Growing recognition of the important role of microfinance in economic development and the targeting of women by microfinance organizations have led some to measure women's bargaining power in terms of their access to microcredit. In a study of microcredit programs in Bangladesh, Pitt and Khandker determine that borrowing by women results in greater increases in household consumption than borrowing by men.[10] Pitt, Khandker, Choudhury, and Millimet find that whereas women's access to microcredit in rural Bangladesh significantly improves children's health outcomes, men's access to credit has no such effect.[11] Similarly, Hazarika and Guha-Khasnobis discover that women's access to microcredit in rural Malawi improves young girls' (though not boys') long-term nutrition, with men's access to credit having no such salubrious effect on girls or boys.[12] Using assets brought to marriage as a measure of bargaining power, Quisumbing and Maluccio reject the unitary model of the household in data from Bangladesh, Ethiopia, Indonesia, and South Africa.[13] In examining a late 1970s policy change in the United Kingdom that transferred a substantial child allowance to wives, Lundberg, Pollak, and Wales find that this led to greater spending on women's and children's clothing relative to men's clothing, and so conclude that income is not pooled in British households.[14] Evidence from Pakistan, discussed next, also supports rejection of Becker's unitary model.

WOMEN'S STATUS AND CHILD NUTRITION IN PAKISTAN

The noticeably low status of women in Pakistan, both in society and at home, suggests their bargaining power is weak. In a recent study, Hazarika and Guha-Khasnobis attempt to estimate the relation between certain plausible measures of Pakistani women's bargaining power and children's well-being.[15] The authors utilize as measures of women's bargaining power an indicator of work for cash income, age at first marriage, the age difference between spouses, the difference between spouses' years of schooling, and women's unearned income from remittances.

Work for cash income may raise a woman's bargaining power by demonstrating she has viable options outside her marriage. A woman may also become exposed to progressive norms of behavior upon working outside her home, and find opportunities to build extra-familial support networks and to turn more assertive as a result. A woman's age at first marriage may be indicative of her bargaining power as well, since early marriage often interrupts a woman's schooling and so diminishes her earning potential. Further, women in Pakistan often enter a highly cloistered world upon marriage, so a woman who marries young will have had fewer opportunities to build external support networks. The age difference between a woman and her spouse may also influence her bargaining power, since a woman much younger than her husband is more likely to defer to him. Similarly, a woman less educated than her husband is more likely to submit to his views, so differences in their educational attainments may measure her bargaining power as well. Finally, unearned income from remittances accruing to a household's women may relate to their bargaining power, since it is conceivable they will have more control over these sums' disbursement.

Hazarika and Guha-Khasnobis first estimate the relation between the above measures of women's bargaining power and young children's nutrition. They next estimate the relation between these measures and household expenditures with probable bearing on child nutrition. The authors gauge child nutrition by means of anthropometric Z-scores. There are three such standards in common use: height-for-age, weight-for-height, and weight-for-age Z-scores. These scores express the distance between a child's physical dimensions of height or weight and the median or aver-

age such physical dimension of comparable children in a healthy reference population. For example, a child is deemed malnourished by the standard of height-for-age if she is much shorter than the average healthy child of her age and gender. Height-for-age Z-scores measure "stunting," a consequence of long-term malnutrition, whereas weight-for-height is taken to measure "wasting," a result of short-term malnutrition. The authors discover that work-for-cash income by mothers raises their children's nutrition as measured by weight-for-height and weight-for-age. They also find that the smaller the differences between fathers' and mothers' years of schooling, the better nourished children are by the standards of height-for-age and weight-for-age. In sum, women's bargaining power in Pakistan appears positively related to children's nutrition security.

Hazarika and Guha-Khasnobis adopt an indirect approach toward examining the role of women's bargaining power in household spending pertinent to child nutrition. While expenditure on food is the particular household budgetary item most relevant to child nutrition, the expenditure data analyzed by these authors, which are aggregated at the level of households, are not informative of the actual food consumption of children. So they choose instead to scrutinize household spending on goods consumed by adults alone, such as tobacco, adult clothing, and adult footwear. This strategy hinges upon the logic that, all else remaining the same, decreases in household spending on goods consumed solely by adults imply increases in children's consumption. The authors find that households in which the age and educational differences between household heads and their wives are less pronounced devote smaller shares of their budgets to goods consumed by adults alone—that is, allocate more household resources to children's consumption by implication. This too suggests that Becker's unitary model is inapplicable to Pakistan and that raising women's status has the potential to improve Pakistani children's nutrition security.

THE FAVORING OF SONS

Besides women's status, a second highly pertinent gender issue in Pakistani children's nutrition security is the favoring by parents of sons. Some argue that Pakistan's skewed population sex-ratio of 94.4 females per 100 males is a consequence of this favoritism. On the other hand,

women enjoy a health advantage in relation to men in developed countries, so that there are some 105 females per 100 males in North America and Europe. If a population sex-ratio of 105 females per 100 males is considered the norm, Pakistan's sex-ratio of 94.4 and population of 175 million would point to about 9.5 million absent or "missing" females. The population sex-ratio in neighboring India, at 93.2 females per 100 males, is even more skewed. Indeed, the population sex-ratio in South Asia as a whole, at 93.9 females per 100 males, is highly unbalanced. There is consensus that this is caused in large part by parents' relative neglect of daughters, which results in their poorer health and higher mortality.

However, it appears this neglect does not comprise the underfeeding of young girls relative to young boys. For example, Hazarika finds no evidence of differences in young boys' and girls' nutrition in Pakistan as measured by anthropometric Z-scores.[16] Indeed, a summary of Demographic and Health Surveys (DHS) country reports indicates there are largely no gender differences in young children's nutrition, as measured by their bodily dimensions, in most less-developed regions of the world.[17]

On the other hand, there are indications that young Pakistani girls are less likely than boys to be immunized or receive medical care.[18] This selective neglect of young girls in the provision of health care is also observed in other South Asian nations. For example, a summary of data from the National Family Health Surveys (NFHS) of 14 Indian states[19] indicates boys are more likely to be immunized and receive health care at a medical facility. There are sobering implications of this manner of neglect of girls. Illness can quickly undo nutrition, so even though young boys and girls seem equally fed, girls, less likely to have been immunized, are more likely to contract infections and, having less access to medical care, to become malnourished as a result of these infections. In other words, their lower access to health care makes young Pakistani girls' nutrition less secure.

Children's consumption of food may be viewed as determining their *levels* of nutrition, and their access to health care as preserving nutrition against illness. Might the facts, then, that young boys and girls in Pakistan seem equally nourished whereas boys enjoy greater access to health care reveal Pakistani parents' motives in favoring their sons? Parents may favor their sons either because they are simply fonder of boys, or because sons in patrilocal Pakistan are the mainstay of aged

parents.[20] The first motive is one of pure preference. The second reflects an investment motive in that sons are a kind of asset to parents. If parents were simply fonder of sons, they might derive greater pleasure from their sons' consumption of food and so proceed to feed them better.[21] But this would have led to boys possessing higher levels of nutrition than girls. That they do not suggests parents are not simply fonder of their sons. On the other hand, Pakistani parents may place greater value upon their sons' than their daughters' future earning capacity, sons being their parents' principal support in old age. Realizing that this capacity is tied to nutrition in childhood, parents may be particularly keen to preserve their young sons' nutritional levels against illness by the means of health care. In sum, Pakistani parents' favoring of sons may have roots in the greater investment value of sons.

CONCLUSION AND POLICY PRESCRIPTIONS

This essay seeks, first, to emphasize that children's nutrition security is dependent not only on the caloric adequacy of diets, but also upon public health interventions and medical care. It next maintains that children's nutrition security is inextricably linked with the well-being of their mothers, and that the empowerment of women has the potential to improve child nutrition greatly. It briefly describes collective models of the household that make the case for a positive relation between women's bargaining power and children's welfare, and it reports evidence of a positive relation between certain measures of women's bargaining power in Pakistan and child nutrition. This essay finally addresses gender inequities in resource allocations to young children. It summarizes research findings indicative of the equal treatment of Pakistani boys and girls in the allocation of food but the favoring of boys in the provision of health care. It argues that this particular pattern of favoritism makes Pakistani girls both more susceptible to infections and likelier to suffer from them, with the result that they enjoy less nutrition security than boys. It also speculates that this manner of neglect of girls has roots in the greater investment value to parents of sons resulting from the social custom of patrilocality.

Hazarika and Guha-Khasnobis's finding that work-for-cash income by Pakistani women improves their children's nutrition suggests that

children's nutrition security in Pakistan would be strengthened by measures to broaden women's earning opportunities.[22] One such measure, very successful in Bangladesh, is the promotion of women's microenterprises by the means of microfinance. These authors' finding that the smaller the differences between fathers' and mothers' years of schooling, the better nourished children are, argues for particular governmental attention to girls' and women's education. Their finding that households in which age differences between household heads and their wives are less pronounced devote smaller shares of their budget to goods consumed solely by adults (that is, expend more resources upon children, by implication) argues for better enforcement of Pakistani law with regard to the minimum age of marriage. By law, girls younger than 16 may not marry. The government of Pakistan might even consider raising this minimum age, particularly since a disturbingly high proportion, 32 percent, of 20- to 24-year-old Pakistani women were married or in union before they were 18.[23] The government ought also to take steps to stamp out the custom of *vani*, whereby girls are forced by their families into marriage, often to much older men, in order to settle disputes between families.

Hazarika's finding that young girls in Pakistan receive less health care than young boys and so enjoy less nutrition security argues for concerted efforts on the part of Pakistan's government and NGOs toward redressing this very serious inequity.[24] When childhood immunization programs are school-based, girls might be less likely to be immunized because of their lower rates of school attendance. This is one more reason to promote girls' schooling. Note in this context that the simple lack of school toilets is often a grave obstacle to girls' school attendance in South Asia, where much store is set on female modesty. Further, if the main reason for the selective neglect of girls in the provision of health care is the higher investment value to parents of sons, effort ought to be directed toward either raising the investment value of daughters or lowering this value of sons. Steps to raise the investment value to parents of daughters might include affirmative action to boost daughters' economic prospects. The institution of public old-age pensions might lower the investment value of sons, since aged parents would not then be quite so financially dependent upon their sons.

In sum, there are two pressing gender issues in Pakistani children's nutrition security. First, the low status of adult women in Pakistan is

a prime factor in their children's nutrition insecurity. Second, girls in Pakistan are less nutritionally secure than boys on account of the distinct favoring of sons in allocating health care. Policy focus upon these issues must, then, be central to human development efforts in Pakistan.

NOTES

1 All figures cited without attribution are supplied by the World Bank or the UN Food and Agriculture Organization.

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The Structural Dimensions of Food Insecurity in Pakistan

Saadia Toor

In 2008, the World Bank put Pakistan on a list of 36 countries that faced a serious food shortage, warning that if the situation worsened, people might raid storage facilities for food. However, it must also be noted that Pakistan had a bumper wheat crop in that same year, and that wheat is the major food crop for the country. This crucial paradox will be discussed presently. However, first it is important to chart out some of the more salient facts and figures regarding food insecurity in Pakistan today. According to data from the World Food Program:

- About 50 percent of Pakistan's population consumes less than the minimum required for average human need.
- A total of 95 of the country's 121 districts face food insecurity problems, including hunger, malnutrition, undernutrition, disease, and poverty. In Pakistan's urban areas, 21 million out of 56 million people are now food-insecure.
- The highest food insecurity levels are in the Federally Administered Tribal Areas (FATA), Baluchistan, and Northwest Frontier Province (NWFP)—areas with some of the most skewed land distribution as well. Farming households in northern Punjab are the least food-insecure.

The problem of food insecurity will become far worse with the displacement of more than three million people from Swat who have lost their land and livelihoods, and whose homes and villages have been reduced to rubble by Pakistani army operations in the area.[1] This issue will be discussed later in this paper, when exploring what the (over)develop-

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ment of a "security state" implies for the food security of the majority of Pakistan's citizens.

The essay begins by talking about the most recent crisis and its causes; moves on to discuss the structural and historic reasons behind food insecurity in Pakistan; and finally considers why the issue is unlikely to go away—and in fact is going to get much worse—unless some structural changes are made, the most important of which is substantive land reform.

THE GLOBAL FOOD CRISIS AND ITS REPERCUSSIONS IN PAKISTAN

The most recent crisis of food insecurity in Pakistan was linked, unsurprisingly, to global processes and forces—in particular, the diversion of food to fuel and the volatility of the global market.

Over the last several years, the world has faced a food crisis of unprecedented proportions. Oxfam estimates that in conjunction with the global financial crisis, the global food crisis has wiped out 30 years of progress in reducing hunger across the world. According to the Food and Agriculture Organization (FAO), 1.02 billion people, or one-sixth of humanity, are going hungry every day, with 840 million people around the world *chronically* hungry.

The current global crisis manifested itself in a sharp rise in world grain prices; this is in part attributed to biofuels, which have been responsible for forcing global food prices up by more than 75 percent. There were three ways in which biofuels (mostly grain-derived) distorted food markets: by diverting grain away from food to fuel; by encouraging farmers to set aside land for biofuel (as opposed to food) production; and by sparking financial speculation in grains, which drove up prices exponentially.[2]

In Pakistan, this crisis manifested itself in a wheat shortage in 2008. However, as is the case globally, the problem was not a shortfall in wheat production; as noted earlier, Pakistan had had a bumper wheat crop in 2006-07.[3] The crucial piece of the puzzle here is the complex role played by the World Bank and the International Monetary Fund (IMF). Pakistan's grain reserves were low because Pervez Musharraf's government (under World Bank and IMF "advice") had reduced subsidies to

farmers for wheat, which resulted in a switch to other cash crops.[4] More importantly, however, grain reserves were low because these Bretton Woods institutions had pressured Pakistan's government to sell its wheat on the global market since world wheat prices were at a record high.[5] Consequently, the government exported half a million tons of wheat.

The result, predictably, was a domestic wheat shortage and a concomitant increase in the price of wheat, which went from Rs. 15 per kilogram (kg) in January 2007 to Rs. 25 per kg in early 2008. Since wheat is the staple food grain, this resulted in near-riots and the deployment of armed troops to supervise the distribution of wheat and flour.

The dramatic rise in food insecurity in Pakistan (as indeed across the world) is the result of both rising food prices *and* a simultaneous fall in purchasing power,[6] and both were adversely affected by the global rise in oil prices. The World Bank and IMF—and now the World Trade Organization (WTO) —have played a major role in exacerbating both, in Pakistan and elsewhere.[7]

THE POVERTY CONNECTION

There is an intimate connection between food insecurity and poverty. Not only does one of the standard definitions of absolute poverty involve measuring the level of food consumption (minimum caloric intake), but poor people are more likely to be food-insecure due to factors such as land ownership. The poor also spend a greater percentage of their income on food than do rich people, so anything that negatively affects their income has a serious impact on their food security. Given the imbalance in gender power within households, and the feminization of poverty within the economy at large, an increase in poverty will and does have differential effects on women and their food security.

The important thing to note about poverty in Pakistan is that it went down steadily during the 1970s and 1980s; by the mid-1990s, poverty in urban Pakistan had been virtually eliminated. In more recent years, however, poverty has been on the rise for reasons that make it clear that this is not just a short-term trend.[8] In fact, the 1990s were singular in Pakistan's history, characterized as they were by a substantial decline in growth, a substantial increase in poverty, *and* a worsening of income distribution—a triple whammy which had never before been observed.

The change in the "poverty trend" in the 1990s can be traced in large part to the initiation of a new, comprehensive, IMF-enforced structural adjustment package in 1987–88. Overall, this package of policies has resulted in a situation in Pakistan where "[g]rowth rates have fallen, poverty has increased, unemployment has grown and opportunities for labor have diminished."[9]

Structural adjustment packages are a bundle of policy measures designed to balance the budget. Universally, the first things to go are government expenditures in the social sectors, such as health and education, as well as in welfare provisions, such as subsidies for food. Not surprisingly, the results have been universally disastrous, with the most vulnerable sections of society being the most adversely impacted in direct and indirect ways. In Pakistan, development expenditure went from a high of 9.3 percent of GDP in 1980–81 to slightly more than 3 percent in 1997–98; by 2000–01, it had fallen to 2 percent. Public sector employment is understood, historically, as an anti-poverty measure. Since part of the IMF and World Bank structural adjustment package involved the privatization of key public enterprises such as utilities and transportation, structural adjustment in Pakistan has predictably resulted in an increase in unemployment—43.2 percent of workers previously employed in public enterprises had been laid off by their new employers by the early 1990s. By 2003, the government of Pakistan estimated that unemployment was at about 20 percent of the labor force and worsening.[10]

In addition, as Akbar Zaidi (citing data collected by A.R. Kemal) notes, "Subsidies that were critical to the consumption pattern[s] of the poor have been cut while the burden of indirect taxes on the poorest income group has increased." There was a 22.4 percent cut in food subsidies between 1991 and 1995; from 2 percent of GDP, subsidies went down to only 0.5 percent in 1996–97. The "rationalized" tax structure pushed by the IMF and World Bank also had detrimental effects on the poor, increasing their tax burden by 10.3 percent while reducing that of the rich by 4.3 percent. In fact, Zaidi also finds that "[e]very single indicator which has some poverty-reducing impact, such as economic growth, manufacturing, development expenditure, employment, public expenditure, remittances, and subsidies, has worsened over the last

decade."[11] In its latest agreement with the IMF and World Bank, the government of Pakistan has continued this commitment to structural adjustment measures.[12] It is hardly surprising, then, to see poverty on the rise in Pakistan.

POVERTY AND LAND OWNERSHIP IN PAKISTAN

This paper's discussion of the role of the IMF and World Bank in increasing poverty in Pakistan is mostly relevant to the urban sector, though poverty in Pakistan continues to have a predominantly rural bias. Two-thirds of Pakistan's population live in rural areas, and rural poverty is also on the rise. Here, the major culprit is unequal land ownership—rural poverty is highest among landless households, followed by non-agricultural households. Indeed, 40 percent of landless households are poor and altogether account for 70 percent of the rural poor. In effect, as Zaidi notes, poverty in rural Pakistan reflects "patterns of land ownership, land tenure, and access to land for cultivation."[13]

The importance of asset-building for people rising out of poverty is being increasingly recognized, especially in terms of assets that are resilient and show high economic returns.[14] Approximately 65 percent of Pakistan's total population lives in rural areas, where land is the biggest asset. The importance of access to land (and, in particular, land ownership) to the well-being of the majority of Pakistan's population is therefore incontrovertible. Even a report on poverty prepared by the Pakistani government's Federal Bureau of Statistics argues that the two main determinants of poverty are lack of education and land.[15]

The distribution of rural poverty in Pakistan closely reflects land distribution, which is highly unequal in Pakistan and has become more so since the 1980s. Considerably less than half of all rural households (37 percent) own any agricultural land, while the top 2.5 percent of households account for more than 40 percent of all land owned.[16] About 75 percent of households in Pakistan own no land, while a miniscule 0.05 percent of households hold more than two hectares of land in Punjab and Sindh. The Punjab region ranks the highest in terms of unequal land ownership, followed by Sindh and then Baluchistan. Around 57 percent of the rural poor are non-farm households, and a higher incidence of poverty exists among non-farm rural households. The majority

of Pakistan's rural poor are neither tenant farmers nor farm owners.[17] As Zaidi notes,

> In the rural areas, the poor are predominantly sharecroppers. They own the least land, are the smallest landlords, and have not shifted to modern forms of lease contracting. The lack of asset ownership is both a *cause* of poverty—since assets generate income—as well as a *consequence* of it—because ownership is the result of past investment. Rural poverty has a very strong link with unequal land ownership and the lack of access to land.[18]

Moreover, the effects of land concentration on impoverishment go beyond issues of control of and access to assets. For example, land distribution has repercussions in terms of the abuse and exploitation that the poor are subject to in rural Pakistan. Indeed, a poverty assessment report published by the Pakistani government's Planning Commission in 2003 found that the poor perceive land as an important source of power.

Research has shown that beyond its income effects, improved land access cheapens the relative price of food for families, and, controlling for income, results in better nutritional outcomes. The multiplier effect of access to land is huge when the links between nutrition and educational outcomes are taken into account. Data from China and India show that China's relatively more egalitarian land distribution pattern results in better-nourished households than in India. Land access also stabilizes income, which is especially important during economic shocks and downturns, and has a positive effect on investment in children's education.[19] Improved land access is thus linked to poverty alleviation in both the short and the long term, and women's access to land is of special importance.[20] Even the World Bank has recommended land reforms in Pakistan, arguing that, among other things, the redistribution of land will result in vastly improved environmental impacts.[21]

A broad-based land reform program is thus critical for reducing rural poverty in Pakistan, and a crucial prerequisite for improving food security. Of course, these land reforms must be substantive in nature—as opposed to the cosmetic ones of the past—and be accompanied by improved access to agricultural inputs as well as to the market.[22]

Demands for land reform in Pakistan, however, have consistently been met with opposition and resistance from landed classes. The most recent example was under Musharraf, whose proposed land reforms were vigorously opposed by landed families and rich farmers on the basis of property rights and arguments about the alleged productivity of large farms.[23] As a result, in 2002, Pakistan's prime minister declared the issue of land reforms resolved in Pakistan, arguing that current holdings were optimal for productivity.[24] Needless to say, this does not augur well for poverty alleviation and food security in Pakistan.

THE ROLE OF MULTINATIONAL CAPITAL

Although the issue of multinational agricorporations and the detrimental role played by them with regard to global food security and the environment has received much attention across the world, it has still not received the critical attention it deserves in the context of Pakistan. Farmer suicides across the border in India have made international headlines—as they should—but similar acts of desperation in Pakistan seldom even make it to the pages of the national dailies.[25] In fact, far from taking into account the substantive literature on the detrimental effects—on the environment as well as on the health and well-being of farm workers and consumers—of Green Revolution technologies[26] and, in particular, agrochemicals, conversations around food security in Pakistan continue to focus on the need for "another Green Revolution." There is also little concern over the power that multinational agricorporations such as Monsanto already exert in Pakistan, and how "another Green Revolution" will only increase that power.

There are various dimensions to the control that multinational agricompanies assert in Pakistan—with the full collusion of the state, of course. The most recent example is that of corporate farming. The 2001–02 budget provided incentives for the corporatization of agriculture—and the Corporate Farming Ordinance (CFO) passed in 2001 allows foreign firms to lease land in Pakistan for 50 years, extendable for another 49 years. The minimum amount of land they could lease was set at 1,500 acres.

This Ordinance was only the thin edge of the wedge, and part of a broader pattern of what is now being referred to as the "global land

grab," whereby rich countries lease or buy land in poor countries in order to secure their food supplies for the future.[27] In Pakistan, these countries have been mostly Gulf states. In May 2009, for example, the Ministry of Investment decided to offer one million hectares of farmland for long-term investment or sale to foreigners—specifically, the Emirates Investment Group.

In a 2009 interview given to the *Financial Times*, Pakistan's finance minister responded to a question on agricultural land:

> We have talked to various countries and frankly we'll be spending a lot of attention and money on up-gradation of our agriculture in terms of yields, storage, value addition in vegetables and fruits, water resources, all these things. The same principle which is that we have gone to our friends and said, *there are large tracts of land which is* [sic] *available and which can have access to water if you want food security, and also increase our export potential* [emphasis added].[28]

It is important to note the emphasis on exports and the food security of other countries at the expense of what effectively amounts to the food security of millions of Pakistanis. Here one can see how the corporate interests of the Pakistani ruling classes mesh perfectly with the interests of the Washington Consensus.

Unsurprisingly, this purchase or lease of farmland in developing countries is being pitched as a win-win situation: Such transactions address the food security of countries like those of the Gulf states, while helping with the transfer of technology and knowledge to the developing country in question. The government of Pakistan, for example, seems to think that there will be no backlash against this policy because the foreign "investors" are "Muslim."[29]

However, it is becoming increasingly clear that these deals are, in fact, very likely to increase food *insecurity* for the host country.[30] Keep in mind that during the food price hike in 2008, Pakistan was among those countries, along with India, Vietnam, and Argentina, that imposed export restrictions on farm goods as a matter of food security policy. Yet a recent report by the International Institute for Sustainable Development points out that the land transactions contain provisions that would allow the buying countries to export the farm goods produced.[31] Indeed, the

United Arab Emirates (UAE) sought an exemption on export restrictions for the goods produced on "its" lands, and the government of Pakistan eventually granted this request.[32]

The UN special rapporteur on the right to food argued at a 2009 conference that the legal instruments needed to address concerns of food security are already in place, while acknowledging that investment in agriculture should first serve the right to food for local populations.[33] The governments negotiating the land deals should keep a greater proportion of food grown on foreign holdings in their territories when prices go up, and national parliaments and courts should monitor the deals being cut. Similarly, in response to (or perhaps in anticipation of) protests at what amounts to a global land grab by rich countries, the World Bank is also urging investors to respect existing property rights. However, the deals are far from transparent, and respecting existing property rights does not help in places like Pakistan, where the problem includes highly skewed land ownership and high levels of landlessness.

There is also the very real fact and prospect of the abuse of power by large landowners and the state. For example, one of the direct fallouts of the Corporate Farming Ordinance (CFO)[34] of 2001 was the threat of eviction faced by thousands of peasants in Punjab, who had been working on so-called "military farms" comprising some 70,000 acres of land. This land is technically owned by the provincial government and nominally operated by multiple government agencies, including the military and various agricultural departments; these agencies had leased this land from the provincial government at some point but no longer had any legal claim to it. Under existing tenancy laws, the tillers on this land—who had been paying harvest shares to the agencies—could not be evicted as long as they were legally recognized as tillers. The military and agricultural departments wanted to change the tenure status of the tenants by making them sign limited-tenure contracts, under which eviction becomes a distinct possibility.

In a historic turn of events, tenant revolts erupted in Okara, Khanewal, Sargodha, Sahiwal, and at least six other districts of Punjab, and the Anjuman Mazareen-i Punjab (AMP, or the Society of Landless Peasants of Punjab) was born. Women were at the forefront of this movement, and made headline news as they faced off against the military with rolling pins. Tenant activists and members of the AMP were accused of

antistate activities and tried in antiterrorism courts, and the state tried its best to infiltrate and break the movement. However, the AMP has survived and continues to mobilize.[35]

THE "SECURITY STATE"

The issue of the AMP and its struggle for land highlights the crucial role of the military in issues of food security, and specifically in its relationship to land. This role has both direct and indirect aspects. The direct role is through land ownership; as Dr. Ayesha Siddiqa reveals in her book, *Military, Inc.,* the military is Pakistan's biggest landowner. Issues of skewed patterns of land ownership, therefore, pertain directly to the Pakistani military's parasitic relationship to the people. Moreover, the military is also directly connected to people's food security and well-being through the development and proliferation of a "security state."

It is worth noting, for example, that in every budget since independence, Pakistan's allocations and expenditure on defense have dwarfed those for development.[36] Not only does this bloated defense expenditure divert money away from investment in other sectors, which might directly and indirectly improve the conditions of the poor, but it has also contributed in large part to the crisis which allowed the IMF and World Bank to step in and impose structural adjustments on Pakistan.

A bloated military apparatus has resulted in the militarization of all aspects of Pakistani society, from politics to the economy. The military is now the single biggest capitalist and the single largest landowner in Pakistan. Any attempts to understand the political economy of Pakistan today, and specifically the issue of land reforms, must take this into account.[37] One must also focus on the more direct role of the Pakistani military in creating and maintaining conditions of extreme food insecurity today through military operations in FATA, NWFP, and Baluchistan. It is worth noting that Dera Bugti—the ancestral village of Nawab Akbar Khan Bugti, a major Baluch nationalist leader assassinated by the Pakistani army in 2006—is the district with the lowest food security in all of Pakistan. And this essay has already discussed the case of the three million displaced Swatis who were forced to leave standing harvests as they fled the military's indiscriminate bombing of the Swat Valley.

The facts and figures on food security across Pakistan also highlight the discrepancy between provinces and regions, resulting from the skewed balance of power between the different provinces. Although Pakistan is technically a federation, in practice Punjab and Sindh have disproportionate power at the center, which affects, among other things, resource-sharing between provinces. This discrepancy (and the military's heinous response to the justifiable demands of the Bengali people) was the reason for the ultimate secession of Bangladesh. Furthermore, Baluchi anger at being continually shortchanged by the state has resulted in militancy and brutal repression from the 1970s onward.

A move toward a genuine federation, with equal rights for all provincial units, is crucial if the basic needs of all of Pakistan's people are to be met. The Pakistani state needs to address the needs of the citizens of FATA and Baluchistan, because having these needs met represents their basic rights as citizens of the state. There is a disturbing trend—even among well-meaning Pakistani liberals—to argue for greater resources to be invested in these areas and their people out of the fear that not doing so will result in them turning to militancy. While there may or may not be a relationship between deprivation and militancy, an argument such as this further demonizes and dehumanizes the tribal peoples of Pakistan. By the same token, there must be an immediate and concerted effort to rehabilitate the Swatis who remain displaced—not because the camps in which they are being forced to live under squalid conditions would otherwise become "breeding grounds" for terrorists, but because this is the very least that the state can do after destroying these citizens' homes and livelihoods. In an ideal world, they would be offered reparations for their losses.

Since political instability is positively correlated with food insecurity, it is obvious that the development of a genuine federation, defined by a just power- and resource-sharing agreement, is crucial in Pakistan—both for its people and for its own viability.

CONCLUSION

A radical program of land redistribution is required in Pakistan to address issues of food (in)security in particular and of poverty in general. Experts argue that land redistribution along the lines of greater equity

will also take care of many of the problems that the agricultural sector is facing, including a fall in productivity, waterlogging and salinity, and wastage of water. The current highly skewed system of land ownership is both the cause and the effect of power. The existing system gives large landowners the ability to exploit smaller landowners and deny them their due share of resources, especially water. Not only are large landholdings less productive than smaller ones, but large landowners in Pakistan also engage in rent-seeking rather than productive activity.[38]

Pakistan's history has shown that a more equitable distribution of land—the most important asset for the poor—will not result from the state's goodwill. The corporate interests of the ruling classes will simply not allow this, especially since the military is also the biggest landowner in Pakistan. However, Pakistan has no alternative if it desires a positive change in ordinary people's well-being—even simply in terms of their food security. The only hope lies in building a groundswell of popular pressure from below, in the form of mass movements of small farmers and the millions of landless peasants who are currently living on the edge of survival. Movements such as those represented by the AMP are crucial test cases for Pakistan, and must be supported by anyone who professes an interest in the welfare of Pakistan's people.

The problem of food insecurity in the contemporary period is not episodic or short-term—it is chronic and structural, and must be addressed in those terms. There can be no doubt that food insecurity in Pakistan, as many people highlight, is at some level the result of waste through inadequate storage, inefficient transportation, deteriorating irrigation systems, and inadequate attention to agriculture. These must, of course, be addressed. However, addressing these issues alone will not be enough to resolve the issue of food insecurity in Pakistan. The underlying structural causes must be addressed, and these causes have both domestic and international dimensions.

Domestically, the main issue is the highly skewed distribution of land ownership, with all of its attendant problems. On the international level, the policies of the Washington Consensus have made food insecurity worse; in particular, the structural adjustment programs of the IMF and World Bank and the WTO's Agreement on Agriculture have loaded the dice in favor of rich countries. The global land grab currently underway has also exacerbated the problems in Pakistan.

Yet there is another aspect of the structural causes of food insecurity not addressed in detail here—namely, the entire paradigm of industrial agriculture and its export orientation that has failed on ecological and human development fronts. Green Revolution technologies and strategies—linked to industrialized monoagriculture—have depleted and poisoned the soil, and must not be looked to for an answer to the problem of food insecurity in Pakistan.

Therefore, the current crisis is—both globally and in Pakistan—also an opportunity to think beyond and against this paradigm of the laissez-faire global market. This crisis highlights yet again that this global market, under the unfair trade rules of the Washington Consensus, consistently works against the food security of Southern nations and of vulnerable populations within those nations. The response to this crisis in poor countries has been minimal, and it is clear that rich countries, from the United States to the Gulf states, are interested only in ensuring their own food security at the expense of the world's poor.

Activists in the South have argued that the concept of "food security" is both inadequate and problematic, insofar as it enables people to focus on the issue of food in a technocratic way, abstracted from the very real politics—local, national, and international—that heavily determine its production and distribution. It is crucial that we move from thinking in terms of food security to thinking in terms of food sovereignty—the sovereignty of ordinary people, not nations.

NOTES

1 See, for example, Z. F. Abbasi, "From Emergency to Opportunity," Institute for Development Initiatives, May 31, 2009, http://zubairabbasi.blogspot.com/2009/05/from-emergency-to-opportunity.html.

2 See, for example, Ben Collins, "Hot Commodities, Stuffed Markets, and Empty Bellies: What's Behind the Higher Food Prices?" *Dollars and Sense*, July/August 2008, http://www.dollarsandsense.org/archives/2008/0708collins.html; and "Secret Report: Biofuels Caused Food Crisis," *Guardian*, July 3, 2008, http://www.guardian.co.uk/environment/2008/jul/03/biofuels.renewableenergy.

3 The roots of this latest crisis are ultimately found in the relationship between laissez-faire global capitalism and agriculture (specifically food), and also in the Green Revolution industrial model of agriculture that has been the domi-

nant model across the world for the last half-century or more. For more on this, see Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics* (London: Third World Network with Zed Books, 1992); and Vandana Shiva, *Stolen Harvest: The Hijacking of the Global Food Supply* (Cambridge, MA: South End Press, 2000). For a broader historical analysis of the relationship between global capitalism and food, see Philip McMichael, "Tensions between National and International Control of the World Food Order: Contours of a New Food Regime," *Sociological Perspectives* 35, no. 2 (Summer 1992): 343–365. For an analysis of this relationship and its connection to famine in colonial India, see Sugata Bose, "Starvation amidst Plenty: The Making of the Famine in Bengal, Honan and Tonkin, 1942–45," *Modern Asian Studies* 24, no. 4 (1990): 699–727; and Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (New York: Verso, 2002).

4 This advice is in line with the World Bank and IMF conditionalities that come with structural adjustment packages—because the priority is debt servicing, exports are emphasized since they generate foreign exchange. The negative implications of this export orientation in agriculture for the food security of the majority population have been well-documented. See, for example, Vandana Shiva, "Export at Any Cost: Oxfam's Free Trade Recipe for the Third World," http://www.maketradefair.com/en/index.php?file=31052002130237.htm.

5 See Abida Mukhtar, "Pakistan's Food Crisis," Changing Up Pakistan blog, April 23, 2008, http://changinguppakistan.wordpress.com/2008/04/23/contribution-pakistans-food-crisis-by-abida-mukhtar/.

6 See Babar Hussain, Muhammad Ashfaq, and Irfan Ahmad Baig, "Food Security Perspectives in Pakistan," *The Nation* (Pakistan), June 16, 2008, http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/Business/16-Jun-2008/Food-security-perspectives-in-Pakistan; and Syed Mohammad Ali, "Development: Pakistan's Food Insecurity," *Daily Times*, January 20, 2009, http://www.dailytimes.com.pk/default.asp?page=2009%5C01%5C20%5Cstory_20-1-2009_pg3_3.

7 The role of the Washington Consensus and these Bretton Woods institutions in exacerbating food insecurity across the world has been extensively explored and documented, but it needs greater acknowledgment and documentation with regard to Pakistan.

8 See S. Akbar Zaidi, *Issues in Pakistan's Economy*, second edition (Karachi: Oxford University Press, 2005), 443.

9 See S. Akbar Zaidi, "Globalisation and Its Impact on Labour in South Asia," proceedings of the seminar organised by South Asian Alliance against Poverty Eradication (SAAPE), Asian Social Forum, Hyderabad, India, January 3, 2003, http://www.saape.org.np/resources/documents/hwm.doc.

10 Zaidi, *Issues in Pakistan's Economy*, 444.

11 Ibid. Zaidi cites the work of A.R. Kemal, particularly "Structural Adjustment, Employment, Income Distribution and Poverty," *Pakistan Development*

Review 33, no. 4 (1994): 901-911. See also A. Sayeed and A.F.A. Ghaus, "Has Poverty Returned to Pakistan?" Social Policy and Development Center, mimeo, Karachi, 1996.

12 See also Shahrukh Rafi Khan, *Pakistan under Musharraf (1999-2002): Economic Reform and Political Change* (New York: Vanguard Books, 2004), 129–159.

13 S. Akbar Zaidi, "Land Reforms," *Dawn*, May 3, 2008.

14 Caroline Moser, "Asset-Based Approaches to Poverty Reduction in a Globalized Context," Global Economy and Development Working Paper no. 1, University of Manchester, The Brookings Institution, and Overseas Development Institute, November 2006.

15 As cited in Shahrukh Rafi Khan, *Pakistan under Musharraf (1999–2002)*, 5.

16 Zaidi, "Land Reforms." Rashida Haq shows that the differential is even higher if we look at ownership of irrigated land. See Rashida Haq, "Land Inequality by Mode of Irrigation in Pakistan: 1990–2000," *The Pakistan Development Review* 46, no. 4, part II (2007): 1011–1022.

17 See Zaidi, "Land Reforms," and Talat Anwar, Sarfraz K. Qureshi, and Hammad Ali, "Landlessness and Rural Poverty in Pakistan," *The Pakistan Development Review* 43, no. 4 (2004): 855–874.

18 Zaidi, *Issues in Pakistan's Economy*, 438.

19 M. R. Carter, "Designing Land and Property Rights Reform for Poverty Alleviation and Food Security," paper presented at the 29th session of the Committee on World Food Security, Rome, May 12–16, 2003, http://www.fao.org/docrep/006/J0415T/j0415t06.htm. 5/31/2009.

20 See Bina Agarwal, *A Field of One's Own: Gender and Land Rights in South Asia* (Cambridge, UK: Cambridge University Press, 1995).

21 Muhammad Ilyas, "IBRD Proposes Land Reforms," *Dawn*, September 12, 1996.

22 See Shahrukh Rafi Khan, *Pakistan under Musharraf (1999–2002)*, in particular the first chapter, "Land and Agrarian Reforms."

23 This argument holds no water. It has conclusively been shown that, beyond a certain minimum size, smaller farms are far more productive than larger ones. See, for example, Zaidi, *Issues in Pakistan's Economy*, 77.

24 The military is also the biggest landowner in Pakistan, so any serious reform will require divestment of its landholdings. For details about the military's assets, see Ayesha Siddiqa, *Military, Inc.: Inside Pakistan's Military Economy* (Ann Arbor, MI: Pluto Press, 2007).

25 Journalists such as Najma Sadeque and scholars such as Dr. Azra Talat Saeed are part of a small but dedicated group of activists working to document and expose the detrimental effects of Green Revolution technologies and processes on the environment (particularly land and water) and on the people who work on the land, and the increasing influence and power of agricultural multinational corporations such as Monsanto in Pakistan. Again, these issues have received well-deserved attention in India, but they also need to be brought to the mainstream

of national discourse and discussion in Pakistan and of the general discourse on Pakistan.

26 See, for example, the World Bank report cited by Zaidi in *Issues in Pakistan's Economy*, 79.

27 See, for example, "Buying Farmland Abroad: Outsourcing's Third Wave," *Economist*, May 21, 2009, http://www.economist.com/world/international/displaystory.cfm?story_id=13692889; "Land Deals in Africa and Asia: Cornering Foreign Fields," *Economist*, May 21, 2009, http://www.economist.com/opinion/displaystory.cfm?story_id=13697274; and "Food Security Fuels Land Grab, Says Report," *Financial Times*, May 24, 2009, http://farmlandgrab.org/3043.

28 "Transcript: FT interview with Pakistan's top finance official," *Financial Times*, May 21, 2009, http://www.ft.com/cms/s/0/25c675f0-4524-11de-b6c8-00144feabdc0.html.

29 Ibid. For an argument from the point of view of the Gulf investors as to why countries like Pakistan are perfect for this sort of "investment," see Rafiuddin Shikoh and Shuriah Niazi, "Global Food Crisis: A Bowl of Opportunities for Muslim World," Dinar Standard, November 3, 2008, http://www.dinarstandard.com/current/GlobalFoodChallenges100108.htm.

30 Joachim von Braun and Ruth Meinzen-Dick, "'Land Grabbing' by Foreign Investors in Developing Countries: Risks and Opportunities," IFPRI Policy Brief 13, April 2009, http://www.ifpri.org/sites/default/files/publications/bp013all.pdf. See also Lorenzo Cotula, Sonja Vermeulen, Rebecca Leonard, and James Keeley, *Land Grab or Development Opportunity? Agricultural Investments and International Land Deals in Africa* (London and Rome: IIED, FAO, and IFAD, 2009), ftp://ftp.fao.org/docrep/fao/011/ak241e/ak241e.pdf; and "NGOs Cry Foul over Rich-Country 'Land Grab' in Developing Countries," Bridges Weekly Trade News Digest, International Centre for Trade and Development, May 20, 2009, http://ictsd.org/i/news/bridgesweekly/46972/. The following websites are also good sources of information on the issue of the "global land grab" and food security: http://farmlandgrab.org/ and http://www.grain.org/landgrab/.

31 Carin Smaller and Howard Mann, *A Thirst for Distant Lands: Foreign Investment in Agricultural Land and Water* (Winnipeg, Canada: International Institute for Sustainable Development, 2009), http://www.iisd.org/pdf/2009/thirst_for_distant_lands.pdf.

32 "NGOs Cry Foul Over Rich-Country 'Land Grab' in Developing Countries."

33 Statement by Mr. Olivier De Schutter, special rapporteur on the right to food, "Interactive Thematic Dialogue of the U.N. General Assembly on the Global Food Crisis and the Right to Food," Trusteeship Council Chamber, New York, April 6, 2009, http://www2.ohchr.org/english/issues/food/docs/SRRTFstatementpanelRtF6April2009.pdf.

34 The CFO, passed by General Musharraf in 2001, not only allows foreign corporations to purchase or lease land, as noted earlier. It also removes all ceilings

on the amount of land that can be so bought or leased, allows landlords to become corporations, and stipulates that banks may lend corporations money if needed.

35 See Aasim Sajjad Akhtar, "Struggling with a Colonial Past," *Dawn*, September 20, 2002. See also the AMP's website: http://www.anjumanmuzareen.org.pk/?new.

36 The differential is not minor. See Zaidi, *Issues in Pakistan's Economy*, 442.

37 It must be noted that it was Justice Iftikhar Chaudhry's decision to take *suo moto* notice of the way in which the privatization of the Pakistan Steel Mills was proceeding (along with his notice of the disappearances that had taken place under the military's new cooperation agreement with the United States in its global war on terror) that resulted in his dismissal.

38 Zaidi, *Issues in Pakistan's Economy*, 77.

Hunger Vulnerability and Food Assistance in Pakistan: The World Food Program Experience

Kaiser Bengali and Allan Jury

Vulnerability to food insecurity emerged as an active subject of public debate in Pakistan in the aftermath of the sharp rise in food prices in 2007–08, with food inflation touching nearly 30 percent. Within the subject of food security, attention has begun to move from traditional supply issues to include aspects that determine the ability to access and the ability of markets to absorb food. Furthermore, greater interest is now being focused on hunger and malnutrition in particular. The World Food Program (WFP) has taken a lead in this debate, both in terms of food vulnerability analysis and operational food programs.

The evidence is clear on the regionally differentiated nature of the food security problem within Pakistan, with a higher degree of food insecurity, including hunger and malnutrition, in the western and southeastern parts of the country (see Figure 1). There also appears to be a link between food security and the overall national security situation. That the parts of the country that rank high on economic and social underdevelopment and food insecurity are also some of the areas that face varying forms of insurgency is not a mere coincidence.

The new government that assumed office following the February 2008 elections recognized the seriousness of the problem by taking several important steps. First, it moved to meet the shortage of wheat in early 2008 by importing up to three million tons of the crop. Next, it instituted a large cash transfer program to help up to 3.5 million low-income families access food. It also acted to forestall shortage in the coming year by raising the minimum price of wheat by 86 percent from Rs. 510 per 40 kilograms to Rs. 950 per 40 kilograms. On a policy level,

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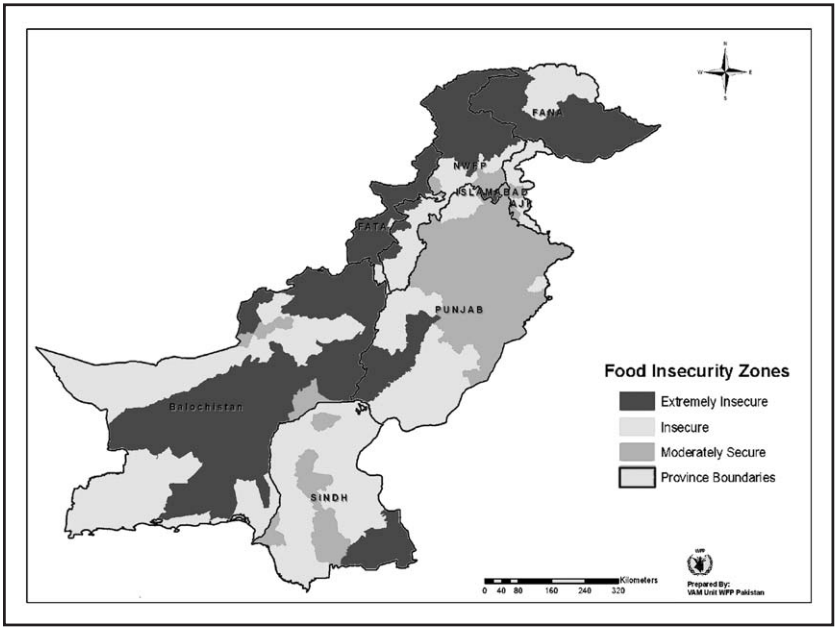
Figure 1: Food Insecurity Zones of Rural Pakistan



Source: Sustainable Development Policy Institute and World Food Program.

it constituted a high-powered Task Force on Food Security to propose a strategy for food security.[1]

International agencies have also initiated support measures, largely in terms of financing of food procurement, measures to improve output, support to safety-net programs, and the direct provision of food. The World Food Program has been particularly active in the direct provision of food in support of Millennium Development Goals, e.g., improvement in school enrollment and in maternal health.

Lately, WFP has embarked on a process to initiate a public debate at various levels—from federal- and provincial-level policy to local-level implementation and access issues—with a view to elevating the subject of food and nutrition security in national policy deliberations. In WFP's view, this approach is more likely to ensure sustained national interest in and support for issues of food security in general and hunger and malnourishment in particular.

HUNGER VULNERABILITY

The economy of Pakistan is basically agricultural, with sufficient natural endowments. It is traversed by about 1,500 kilometers (km) of the Indus river system and complemented by an irrigation system comprising 56,000 km of canals and 1.6 million km of water courses and field channels.[2] The total cultivated area of Pakistan is more than 22 million hectares (ha), with about 13 million ha under food grains.[3]

Total food grain production in 2008 was 31 million tons, or 180 kilograms (kg) per capita per annum. The output of the main staple, wheat, was 22 million tons. The balance sheet of wheat supply and demand shows that, sans informal export to Afghanistan, Pakistan would

Table 1: Wheat Supply/Demand Balance (Thousands of Tons)

	May 2008–April 2009	May 2009–April 2010
Domestic Availability	21,900	24,000
Production	21,800	24,000
Stocks draw-down	100	Unknown
Utilization	24,650	23,949
Food use	20,070	20,450
Feed use	400	448
Seed use	765	819
Losses	1,415	1,558
Exports (formal and informal)	2,000	500
Surplus/(Deficit)	**(2,750)**	**270**

Source: Figures for 2008–2009 taken from "High Food Prices in Pakistan: Impact Assessment and the Way Forward," UN Inter-Agency Assessment Mission (FAO/UNDP/UNESO/UNICEF/WFP/WHO), Islamabad, July 2008, wfp.org/food-security/reports. Figures for 2009–2010 are WFP estimates.

have faced a small shortage of 750,000 tons. Given the "export" to Afghanistan of 2 million tons, the country faced a shortage of 2.75 million tons, which had to be covered through imports of 3 million tons. In 2009, the country was projected to experience a small surplus (see Table 1).

As such, food deficits or shortages that occur are not on account of the country's inability to produce food grains due to an absence of natural endowments, but on account of policy and management factors. These relate to

- Choice of crop mix, with about 40 percent of cultivated areas devoted to growing relatively more lucrative non-food crops.
- Low crop yields.
- Leakage into Afghanistan.
- Deficient transport and marketing networks in parts of the country.
- Internal trade barriers.

Despite the reasonably positive supply situation, however, food and nutrition security has worsened over the years. The number of undernourished people stood at 26 million, or one-quarter of the population, in the early 1990s, when the Millennium Development Goals (MDGs) were adopted.[4] Pakistan is committed under the UN Millennium Development Goals to cut the number of hungry and undernourished people by half, i.e., to 13 million, by 2015.

Initially, the country made good progress in meeting the MDGs and reduced the number of undernourished people to one-fifth of the population by 1997. Thereafter, the situation began to deteriorate. The number of malnourished people increased from 24 million in 1997 to 31 million in 2002, to 37 million in 2006, and is currently estimated to be 45 million, or 28 percent of the population.[5] About half of these 45 million face conditions of hunger. Substantive measures will be needed to meet the MDG target of halving the number of malnourished people from the base year number of 26 million to 13 million in the next five to six years (see Figures 2 and 3).

Figure 2: Undernourished Population Target, Actual and Required Paths (percentage of population)

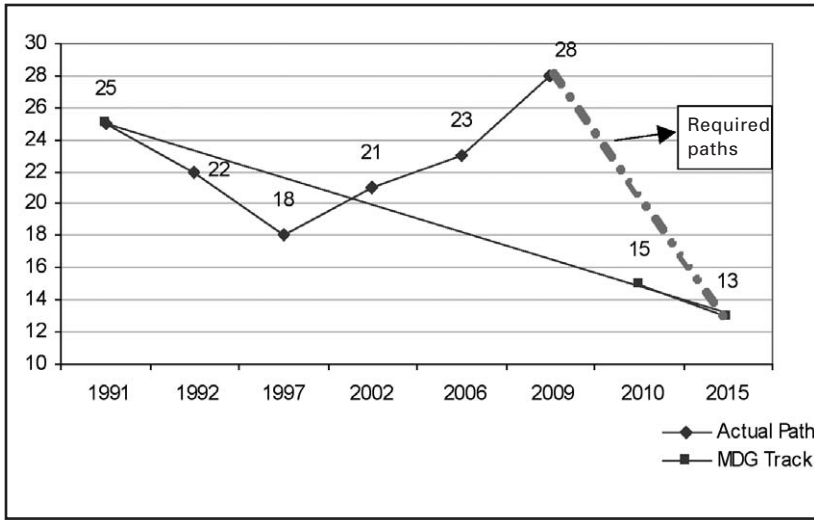
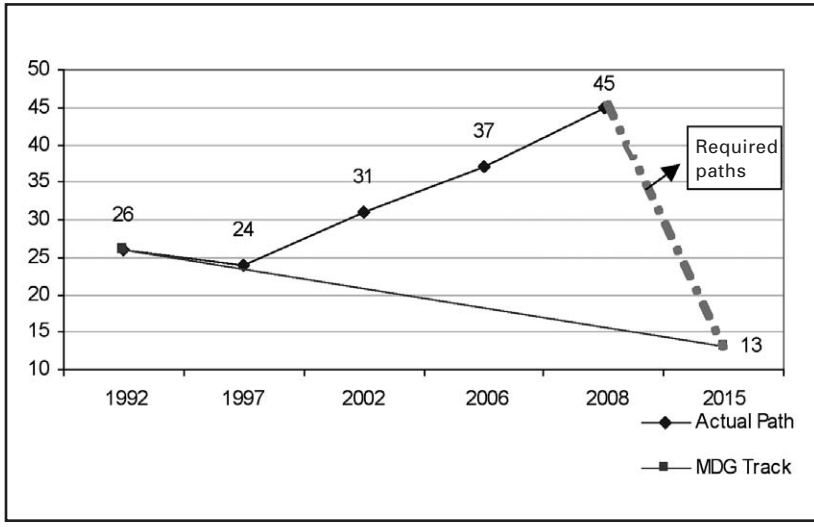


Figure 3: Undernourished Population Target, Actual and Required Paths (population in millions)



Source for Figures 2 and 3: UN Inter-Agency Assessment Mission, "High Food Prices in Pakistan: Impact Assessment and the Way Forward," July 2008.

CAUSES OF FOOD AND NUTRITION INSECURITY

Food security is determined by three factors: availability, access, and utilization (absorption). While availability of food is necessary, access and absorption are also important in attaining sufficient food security. Availability, access, and utilization can be adversely affected by shocks from economic factors, natural disasters, or conflict.

All three conditions have impacted the household economy adversely in the last decade through destruction or damage to the economic infrastructure and household assets, decline in purchasing power, and, most recently, internal population displacement. In all cases, current as well as future income flows have been compromised. Households have been pushed into chronic poverty on two counts. One, destruction or damage of economic infrastructure and/or household assets on account of drought from 1997 to 2003, a cyclone in 1999, an earthquake in 2005, and floods in 2007 have all depleted income-generating sources. And two, economic shocks over the past two years have caused declines in purchasing power and sales of assets in times of distress to meet current needs.

Availability

Availability of staple foods has been affected by informal exports to Afghanistan and India due to adverse price differentials. Global food shortages in 2008 led to sharp increases in world food prices, including in neighboring countries. While the official minimum ex-farm wheat purchase price in Pakistan in early 2008 was Rs. 510 per 40 kg, it was equivalent to Rs. 840 per 40 kg in India and Rs. 1360 per 40 kg in Afghanistan. The large price differential triggered an outflow of wheat from Pakistan.

Access

Despite the availability of food, food insecurity, including hunger, can arise because of the inability to access food. This situation is primarily on account of poverty, such as the lack of sufficient purchasing power to obtain the necessary quantity and/or quality of food.

The food price escalation and accompanying inflation and stagnant incomes have eroded purchasing power and further compromised access to food for a growing section of the population. The decline in manufacturing output and exports due to the world economic downturn has caused significant job losses and, for many families, reduced income to near zero. The impact on the poor has been devastating.

Poorer households suffer more from high food inflation, given that the share of food comprises 50–70 percent of total household expenditures.[6] Within the food category, the largest share of expenditure is on wheat. For the bottom quintile families, wheat accounts for a quarter of expenditures on food, and is even higher for the bottom decile families.

The impact on nutrition is greater. For the bottom quintile families, the share of food expenditure on meat is 4 percent, and can be expected to be even lower for the lowest decile families. The share of expenditure on fruits is less than 2 percent for the lowest quintile, and can be expected to be negligible for the poorest decile families.

The share of expenditure on tea and sugar among lower quintile families is relatively higher and is explained by anecdotal evidence. Field investigators report that some of the poorest households consume tea as a means of curbing hunger; spending Rs. 2 on tea saves Rs. 20 on a meal.

Utilization

The second sufficiency condition for nourishment is utilization or biological absorption of food, which is a function of human development indicators such as education, health, safe drinking water, sanitation, and gender equality. Pakistan ranks low on almost all counts.

Availability and access to cereals alone cannot ensure adequate nourishment. Biological absorption of food requires combinations of energy and essential nutrients. This requires some knowledge of basic principles of nutrition, proper child care, and illness management. Clearly, literacy and education are significant factors in this respect, particularly female literacy and awareness, given that it is, by and large, the woman who is the homemaker.

With public expenditures on education commanding just 2.2 percent of GDP, the adult literacy rate is over half, and the rural female literacy rate is just over 40 percent.[7] Literacy, particularly female literacy, is an

important determinant of nutrition intake, as a lack of knowledge or awareness of nutrition, or of the importance of balanced diets, can lead to conditions of malnutrition, despite availability of and access to food. This can happen because of misinformation, misconceptions, or unfounded myths emanating from sociocultural norms. For example, many pregnant women believe they should eat less food during pregnancy, thus contributing to their own poor health conditions and to low-birth weight babies, many of whom die during the first year of birth.[8]

Not surprisingly, infant and child mortality rates are 70 and 99 per 1,000 live births. The maternal mortality rate is 276 per 100,000 live births.[9] One cause of the relatively high maternal mortality is the low level of antenatal care, indicated by the fact that only about 60 percent of expectant mothers are reported to be vaccinated against tetanus toxide.[10]

Poor health status also constrains effective absorption of food. Poor personal, household, and neighborhood hygiene, particularly unsafe water and poor wastewater disposal, is a major determinant of recurrent illnesses such as stomach worms, diarrhea, and malaria. These are debilitating illnesses and undermine food absorption during and after the illness.

With public expenditure on health commanding just 0.7 percent of GDP,[11] the deficient availability of adequate and quality health care facilities across the country is a major factor in the poor health status of the population, including women and children.

Shocks

As stated earlier, Pakistan has received several shocks during the last decade. The country suffered a severe drought over a seven-year period from 1997 to 2003, during which agricultural output declined and poverty increased substantially. In Baluchistan, livestock is the single largest sector and contributes more than 10 percent of provincial GDP. Minor crops, particularly fruit, comprise 5 percent of the provincial economy.[12] The long drought killed thousands of cattle and ruined hundreds of hectares of orchards, and pushed the labor force—and their families—into chronic poverty, with implications for food security.

In May 1999, a high-intensity cyclone hit parts of the coastal districts of Badin and Thatta in the southeast part of the country, causing considerable destruction to an already poverty-stricken area. Hundreds of hectares of farmland were destroyed by tidal waves and thousands of cattle were washed away. The area has yet to recover from the devastation.

The earthquake in October 2005 in Kashmir and parts of the Northwest Frontier Province (NWFP) killed more than 80,000 people and injured more than 70,000; destroyed or damaged 400,000 houses; and rendered three million people homeless.[13] The earthquake also swept away farmland, destroyed or damaged irrigation facilities and water courses, and killed thousands of cattle. The loss of assets pushed many hundreds of families below the poverty line, which has implications for food security.

In 2008, the sharp rise in fuel and food prices destabilized household budgets, pushing even basic foods out of reach for the poor. The ensuing world economic downturn has impacted exports, with resulting job losses in the export sector. Unemployment and the consequential income loss have serious implications for food security.

The conflict in northwest Pakistan has disrupted economic activity in the area and is causing damage and destruction to public infrastructure and private property. There has been a large-scale dislocation of the population from the area, with almost the entire population of the Swat district being turned into internally displaced persons (IDPs). Many fear a long-term impact on economic stability in the region and on food security.

THE REGIONAL DIMENSION

Availability

Despite the positive aggregate situation with respect to food availability, food insecurity on account of supply factors is a serious problem in the remote western and southeastern parts of the country. Distribution is an important factor in ensuring availability. Available food stocks in silos are of little use if they cannot be transported to markets across the country. Distribution thus requires efficient transportation and market-

ing networks. It is here that the availability situation in remoter areas of Pakistan changes significantly.

The western and southeastern regions are largely arid, deficient in agricultural endowments and, consequently, in food production capacity as well. They are also plagued by deficient transport and marketing networks, trade barriers, and greater poverty than elsewhere in the country, and rank relatively lower on key human development indicators.

The incidence of hunger, defined as consumption below 1,700 calories and the extreme manifestation of food insecurity, is greater in these parts of the country. Reports show that 39 percent of the population in Baluchistan, 36 percent in Sindh, 23 percent in Punjab, and 20 percent in NWFP consume fewer than 1,700 calories per capita per day.[14] Conditions in NWFP have, however, deteriorated during the last year on account of conflict and the large-scale movement of between two and three million IDPs.

An overview of food insecurity shows that all seven districts in the Federally Administered Tribal Areas (FATA), 11 out of 24 districts in NWFP, and 13 out of 26 districts in Baluchistan rank as extremely food-insecure in terms of availability, access, and utilization of food. By comparison, 2 out of 34 districts in Punjab and 1 of 17 districts in Sindh rank as extremely food-insecure.[15]

Table 2: The Distribution of Agricultural Productive Capacity by Province (percent)

Agricultural endowment	Punjab	Sindh	NWFP	Baluchistan
Cultivated area	58.6	23.1	9.0	9.3
Irrigated area	76.4	12.3	4.7	6.6
Food grain production	71.5	13.8	10.8	3.9

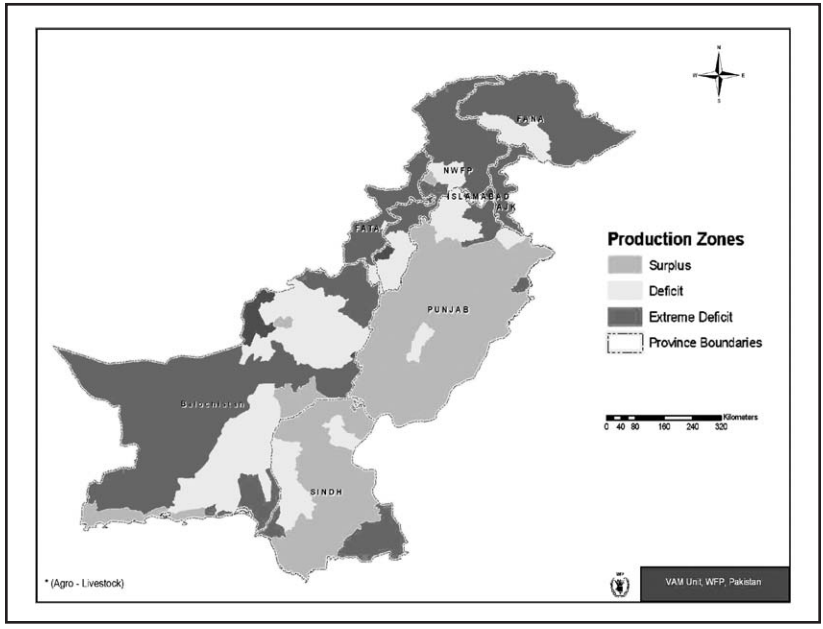
Source: Government of Pakistan, Federal Bureau of Statistics, Agriculture Statistics of Pakistan, Islamabad, 2008.

Unequal Regional Development

The interprovincial differential in agricultural endowments is indicated in Table 2, which shows the wide variation in the distribution of cultivated area, irrigated area, and food grain production.

Clearly, the bulk of agricultural productive capacity rests in Punjab, followed by Sindh. NWFP and Baluchistan are food-deficit provinces, possessing less than one-fifth of cultivated areas and about one-tenth of irrigated areas, and producing less than one-sixth of food grains. Punjab accounts for 80 percent of the country's wheat output, while NWFP and Baluchistan rely on imports from Punjab for their staple food needs (see Figure 4). The availability problem is compounded by distribution constraints because of the wide variability in road availability. Average national road density is 0.32 in

Figure 4: Pakistan's Rural Food Production



Punjab, 0.19 in FATA, 0.15 in NWFP, 0.09 in Baluchistan, and 0.08 in Sindh.[16]

As such, while food availability may not appear to be a serious problem for the country as a whole, there are parts of the country where the necessary condition for food security—availability—is tenuous. Food availability in these areas is generally problematic, resulting in higher prices. Average wheat prices in 2008 rose 28 percent in Punjab, 40 percent in Sindh, 55 percent in NWFP, and 60 percent in Baluchistan. During calendar year 2008, wheat prices were about 27 percent higher in NWFP's Peshawar and Baluchistan's Quetta than in Punjab's Lahore and Multan.[17]

Access and absorption aspects are also weak, given the relatively higher poverty and human underdevelopment indicators in the two western provinces and in southeast Sindh.

Access

Access to food is a function of purchasing power, and low purchasing power, in part, defines poverty. Poverty is a function of livelihoods, which is itself a function of employment, including self-employment. The economy of Pakistan is primarily agricultural, with about 45 percent of jobs concentrated in the agricultural sector. About 35 percent of jobs are in the tertiary sector, mostly in trade and transport (with much of it in the informal sector), and about 20 percent are in the manufacturing sector.[18]

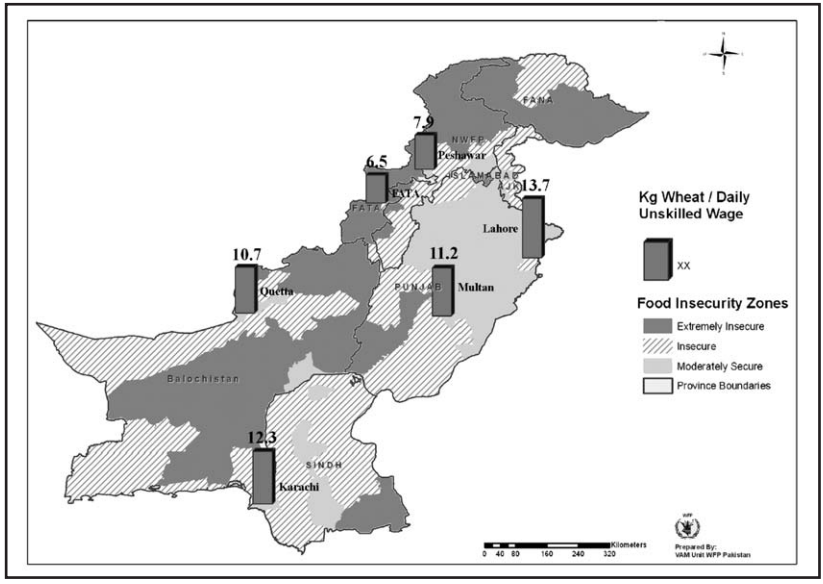
There are significant interprovincial differences, however. The share of employment in agriculture is lower in Sindh at 37 percent because about half of the provincial population is located in the urban center of Karachi. It is higher in Baluchistan, at nearly 60 percent. Given that Baluchistan accounts for 40 percent of the country's territory and less than 10 percent of its cultivated area, the high concentration of employment in agriculture is indicative of a high degree of underemployment. The share of employment in manufacturing is about 15 percent each in Punjab and Sindh, but just 8 percent in NWFP, and less than 2 percent in Baluchistan.[19] Clearly, the overall employment potential in NWFP and Baluchistan is low.

Table 3: Distribution of Population by Wealth Quintiles (percent)

Province	Lowest	Second	Middle	Fourth	Highest
Punjab	16.5	17.6	23.0	21.5	21.4
Sindh	29.0	15.6	12.3	19.7	23.3
NWFP	14.7	35.7	19.7	17.7	12.2
Baluchistan	33.5	25.0	23.4	9.8	8.4

Source: Government of Pakistan, Pakistan Demographic and Health Survey, Islamabad, 2006–07.

Figure 5: Purchasing Power in Pakistan



Source: Sustainable Development Policy Institute and World Food Program.

Access problems tend to become aggravated in areas with higher poverty, as shown in Table 3. Poverty is relatively high in Baluchistan, rural Sindh, urban NWFP, and in all small cities and towns across the country. The distribution of poverty tends to correlate with the distribution of food-deficit areas. Baluchistan and Sindh have the highest share of their population in the lowest wealth quintile, while NWFP has the highest share of its population in the second quintile. Punjab has the highest share of its population in the middle quintile.

Terms of Trade

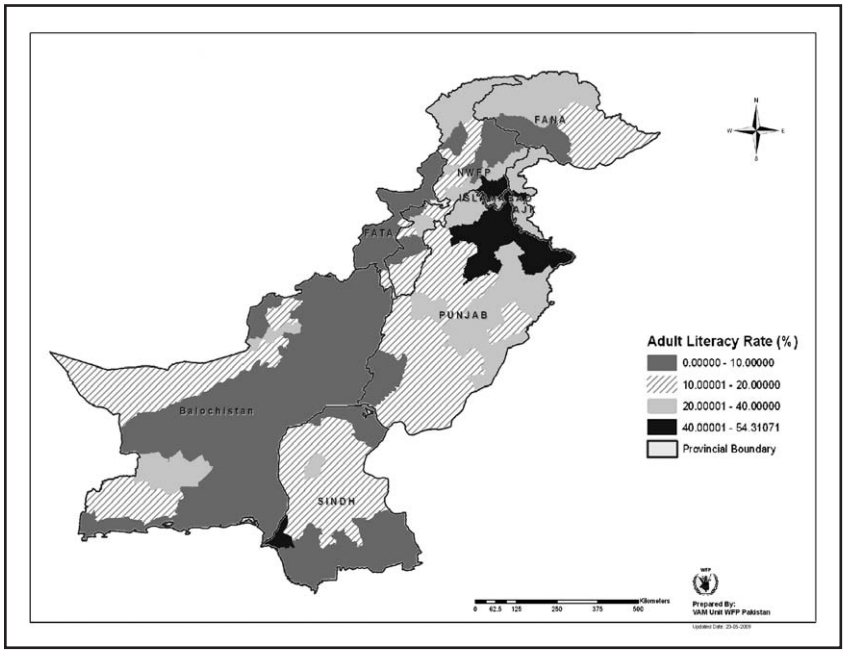
Purchasing power, or terms of trade, measured as the quantity of wheat that can be purchased with one day's unskilled wage, is half the national average in FATA and two-thirds the national average in NWFP (see Figure 5).[20]

Rising prices reduce purchasing power if incomes remain constant or do not rise at least by the same proportion. While prices, especially food prices, have risen substantially in the last year, wages are reported to have increased less than proportionately. Additionally, job losses are being reported, and unemployment reduces wage income to zero. The consequential effect on food security has been severe.

The impact of rising food prices has been different in different parts of the country. A perusal of the terms of trade between wages and the amount of wheat, based on nine months' data from July 2008 to March 2009 at six points in the country, shows the following:

- The average for Pakistan is 12.2 kg of wheat purchased with one day's unskilled wage.
- Purchasing power in Lahore is the highest at 12 percent above the national average, followed by Karachi at the same as the national average.
- Purchasing power in Quetta is 12 percent less than the national average.
- Peshawar and FATA are worse off, with purchasing power being two-thirds (65 percent) and one-half (53 percent) the national average.[21]

Figure 6: Female Literacy in Rural Pakistan



Source: Sustainable Development Policy Institute and World Food Program.

Utilization

An indication of the dire human development conditions in the underdeveloped regions of the country can be discerned from the fact that a mere 15 percent of rural women in Baluchistan are reported to be literate (see Figure 6). Based on this fact alone, the impact on utilization or absorption of food can be easily visualized.

WORLD FOOD PROGRAM SUPPORT

The World Food Program (WFP) is assisting over eight million people in Pakistan through a number of programs. WFP Vulnerability Analysis and Mapping (VAM) work has been used as a reference tool by the government, international organizations, and research institutes

to better understand the district-level distribution of food insecurity throughout Pakistan and to guide policy and programmatic responses to hunger.

WFP responded in early 2008 with food assistance programs to address the hardships caused by high food prices, which had begun to have a severe impact on household budgets. In NWFP, for example, the severely food-insecure population in rural areas, consuming less than 1,700 calories per day, increased by 56 percent, and the total number of persons falling in this category was estimated to be around seven million.

Without intervention, Pakistan faced a high risk of missing the MDG target and, more seriously, of a deterioration in child malnutrition, child mortality, and school dropouts. WFP launched a U.S. $71 million project to provide 86,295 tons of food over 2008–09 in the 20 most food-insecure districts in NWFP, Baluchistan, and Sindh. The WFP assistance package, distributed through schools and health centers, was designed to achieve:

- Inflation-proof relief assistance to households in areas most affected by food price shock.
- Retention of primary school students at a time of high risk of dropping out.
- Employment opportunities and asset creation through food-for-work programs.
- Improvement of the nutritional status of malnourished children under 24 months and pregnant and lactating women by providing them with fortified blended food.

Looking forward, there is a strong focus on school food programs and "take-home" rations as a major element in the WFP response to high food prices. The direct recipients of WFP's assistance will be 450,000 girls and boys in 5,400 primary schools. This reflects the multiple benefits associated with using schools as a platform for food support. These benefits include support to basic education; a strong gender focus with incentives for girls' school attendance; and the use of existing capacity (schools) as a basis for broader community safety-net support through "take home" rations.

The series of crises facing the country has been compounded by the explosion of internally displaced persons from Swat. Apart from government resources, the UN has also launched an appeal for U.S. $543 million for the Humanitarian Response Plan. WFP appealed initially for U.S. $170 million to meet the food needs of an estimated 1.5 million internally displaced persons. But as the number of IDPs soared to more than two million, revised WFP requirements as of mid-2009 climbed to U.S. $280 million.

OUTLOOK FOR FOOD SECURITY

Despite considerable international support, the outlook for food security in Pakistan is likely to remain uncertain as long as the conflict in the northwest part of the country continues. Foreign and domestic investment will probably remain inadequate as long as stable conditions are not restored, with the result that growth in employment and incomes is likely to remain constrained—with implications for food security.

Prior to the outbreak of the conflict, NWFP fared better relative to Baluchistan and rural Sindh with respect to food security. In recent years, however, the situation has changed. In fact, almost the entire population of the Swat district is now at risk of hunger and malnutrition. A massive assistance operation by the government, the UN High Commissioner for Refugees, WFP, and international and local non-governmental organizations is underway, but the costs of dislocation remain high for the IDPs as well as for the government and supporting international agencies.

Military action against insurgents and the imperative of supporting internally displaced persons have placed additional fiscal burdens on the economy, which are being addressed by drawing down allocations for development projects. This has negative medium- and long-term implications for economic growth and employment—and for income, purchasing power, and food security.

Urgent attention must be accorded to the need for substantial investments in the physical and social infrastructure in the currently underde-

veloped regions of the country as a means to ensure food security and, given the insurgency in much of the area, to improve overall security.

There is also a larger question of policy content and direction. Government cash transfer programs such as the Benazir Income Support Program, or international efforts such as WFP's food assistance for people affected by high food prices, are essential to ease the immediate pressures of the most vulnerable. But long-term development programs and macroeconomic policy that promotes employment and wage-income-oriented growth in the most food-insecure regions of the country are essential to achieve long-term food security.

In conclusion, food support needs to be incorporated into the overall policy structure that addresses comprehensively three key elements required to reduce hunger and improve food security in Pakistan:

- Support cash and food assistance programs to address immediate needs.
- Resolve conflict and governance challenges in the most food-insecure regions.
- Invest in long-term rural income and agricultural productivity activities in underserved regions.

Unless Pakistan adopts meaningful strategies and measures to address these three needs, food insecurity is likely to remain a serious obstacle to Pakistan's social stability and development.

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Landscapes of Diversity: Development and Vulnerability to Food Insecurity in Subsistence Agroecosystems of Northern Pakistan

Kenneth Iain Macdonald

The ultimate locus of food insecurity is the individual, but the security of any individual is defined, in part, by the social and ecological relations in which that individual exists. This includes the social relations of production that shape the ways in which people are made more or less vulnerable to food insecurity. This essay's concern is with the subsistence production systems in Pakistan's Northern Areas, specifically the Baltistan region; the capacity of these systems to mediate risk and provide security for community members; and the potential of development practices to compromise inadvertently the risk-mediating characteristics of those agroecosystems, resulting in an increase in vulnerability to food insecurity.

In the course of more than two decades of fieldwork in northern Pakistan, my research has revealed that historically, subsistence production systems have provided a remarkably high degree of food security for community members. In the face of a physically dynamic environment that is prone to regular and high-magnitude geomorphological events such as floods, and a high degree of meteorological variability (Hewitt 1992), the production systems that have developed rely on both the integration of ecological knowledge and the establishment of agricultural and social practices to produce consistent yields.

This is not to say that people do not face significant challenges to their health. For example, adequate crop yields do not necessarily translate into nutritional sufficiency across the region, and poor access to health care facilities, particularly for women, lead to high child and maternal mortality. As a function of these challenges, the population has re-

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mained relatively stable since the late 19th century (MacDonald 1996a). But high maternal and infant mortality has not been caused by food shortage so much as by the absence of access to adequate health care.

Traditional agroecosystems in northern Pakistan have retained features that contribute to food security, self-sufficiency, and sustainability in communities where they persist (MacDonald 1998). More importantly, they do so with minimal reliance on external outputs, demonstrating an ability to adapt to dynamic ecological conditions and to survive under conditions of economic uncertainty. Despite these qualities, these agroecosystems are under threat from a process of development that characterizes the region as environmentally poor, and farmers, pejoratively, as "traditional" (World Bank 1996). Due in part to a failure to understand the rationality of these systems, and a lack of ecological guidance in the development of programs, development programs have often sought to replace diverse cropping practices with new varieties reliant on monocultural planting and agrochemical packages, with an aim of increasing yields, labor efficiency, and farm incomes. However, in their failure to investigate and appreciate the role of diversity in traditional agroecosystems, development agencies promote a uniformity of production that, if adopted, could result in significant crop loss and have serious environmental and social impacts, including ecological degradation, poverty, hunger, and even famine (see Altieri 2004). Often farmers are seen as resistant to development interventions that promote such uniformity, and development agents explain their resistance away as characteristic of tradition, by which they mean an innate resistance to change. In doing so, they are deploying a concept of tradition that is common among rural development practitioners. But this is a concept that has very specific roots in the intellectual history that gave rise to contemporary modernization theory.

This essay uses the case of development intervention in agroecosystems in a region of northern Pakistan known as Baltistan to reveal that, far from resistance to change, "tradition" can be understood as an institutionalized process responsible for evaluating the potential impacts of change and guiding innovation so that it is in accordance with the integrated ecological and social features of the agroecosystems that underpin community self-sufficiency. By failing to appreciate not only the ecological rationale of existing agroecosystems but also the social processes

that facilitate change, development agencies risk promoting interventions that dramatically increase the vulnerability of communities to food insecurity. Conversely, by understanding and appreciating the complex integration of ecological and social practices that have provided food security for communities over generations, development agencies could develop principles to guide their own practices while also developing more sustainable systems and practical strategies for natural resource management well-adapted to local circumstances.

DEVELOPMENT IN NORTHERN PAKISTAN

The context of food security in Baltistan is defined, in part, by relations between communities and the state, which have historically left the region politically marginalized and lacking access to services available in the lowlands. Since Partition, every Pakistani administration, civilian or military, has treated this region as a part of Pakistan, but has refused to extend constitutional protection or the full benefits of citizenship. As part of the disputed state of Jammu and Kashmir, Baltistan is a primary component of Pakistan's Federally Administered Northern Areas (FANA), which have fought for but been denied status under Pakistan's constitution. The people of the region cannot vote for national representatives, and they do not have any right of appeal to the Supreme Court of Pakistan. Despite this lack of representation, the government of Pakistan claims residents of the Northern Areas as Pakistanis and requires them to carry national identification cards.

Until 1994, the people of the Northern Areas had no elected assembly, or even a municipal council, and no representation in the federal assembly. Authority for the Northern Areas Legislative Council was granted in 1999, but this council has minimal legislative authority, as every bill passed in council must receive the assent of the chief executive before it can be passed into law. In effect, this reduces the council to an advisory body, while legal authority over the Northern Areas remains vested in the Ministry of Kashmir and Northern Areas Affairs (MacDonald 2006).[1]

This failure to grant constitutional status to residents of FANA has resulted in the political marginalization of the population and the consequent lack of services that would result from a strong political voice,[2] including inadequate health care and education facilities and, most impor-

tantly in the context of food security, a fragile transportation network. While there is an airfield in the main market town of Skardu, it is only serviced by one airline. Flights, which are supposed to operate on a daily schedule, are routinely cancelled and do not carry bulk cargo. Skardu is also connected to down-country markets by the Karakoram Highway (KKH), which runs alongside the steep walls of the Indus Valley as it cuts through the Karakoram Mountains. But the KKH—a highway in name only—is frequently blocked for long periods by landslides, leaving the Skardu markets regularly cut off from down-country suppliers and vulnerable to the hoarding and inflation that market scarcity promotes.

Many villages are still reached only by foot, and lack electricity or a sanitary piped-water supply. And while adventure tourism to the region's high peaks has provided some supplemental income, the presence of wealthy tourists has driven up the price of food supplies in regional markets. In the face of these constraints, there is little reliance on markets to supply food, particularly in upper-elevation villages. People do use the market for dietary supplements like tea, sugar, salt, and spices, but in most villages, households are remarkably self-sufficient, producing their own staple crops, keeping kitchen gardens, and rearing livestock. This self-reliance has led to the development of communities with integrated and complex agroecosystems that continue to represent the collective experience and knowledge that has come from centuries of habitation. Over time, these farmers have used these collective skills to develop agroecosystems that generate long-term, sustained yields to meet their subsistence needs.

RISK MEDIATION AND THE CONTEXTUAL RATIONALITY OF AN AGROECOSYSTEM

The ability of agroecosystems to produce sustained yields is dependent upon the security of tenure which, unlike in much of Pakistan, is reasonably strong in Baltistan. Arable land is held privately within the extended family and passed down within the household. Land is considered to be a primary source of social security and its sale is frowned upon. Except in the cases of the main market towns and a merchant class that has migrated into the area, landlessness is virtually absent in Baltistan. Pastureland, conversely, is considered common property, delimited on

the basis of villages, with equal access granted to all village households. Production, distribution, and consumption occur largely within the extended family group and there is little exchange of produce with the regional market economy. This security of tenure means that villages have a great deal of collective control over production decisions, including the processes through which new innovations are adopted. Unlike many farmers in Pakistan, they hold title to land, and production decisions have not been subject to the whims of landlords or the pressure of markets (MacDonald 1994).

While there are variations across space, villages in Baltistan are typically located on terrace fans composed of reworked glacial deposits. Cultivation in the steep mountain valleys is oriented around nucleated settlements with fields of varying quality extending away from the village toward the margins of cultivation. While production systems and cropping patterns vary from valley to valley, a typical agroecosystem includes a crop base of wheat, buckwheat, peas, turnips, forage grasses, and, on a smaller scale, garden vegetables. Wheat, the mainstay crop, is grown in a two-to-one–year rotation with buckwheat or peas. Crop production is supplemented by livestock, primarily chickens, sheep, goats, cattle, yak, and *dzo* (a yak-cattle hybrid). These are used mainly for produce (dairy, wool, and manure), and meat is consumed only on special occasions.

Fields are commonly terraced and bordered by either a dry stone wall or a bank of nitrogen-fixing legumes that not only enhance soil nutrient quality, but provide fodder for livestock, and act as a barrier against the spread of pests and disease. In local taxonomic terms, land (*tsa*) is divided into three basic categories: *maljing*, *barsud*, and *das*. Each represents different qualities and requires different management practices.[3] This classification recognizes the transitory nature of the quality of soil derived from a uniform parent material and developed *in situ*. Under relatively uniform conditions, soil and land classification are a function of both the spatial pattern of settlement and the temporal and spatial development of agricultural production. Typically, fields closer to the settlement are of better quality because of a longer history of organic inputs. The development of soil profiles suitable for agriculture has followed the progressive cultivation of fields outward from the village center. Fields near the village, for example, usually have the longest history of cultivation and, as a result, are situated on better-developed soils. Fields on the margins of cultivation

have been built more recently, are further from the village, and require more labor. Farmers compensate for this by adopting practices of intercropping cereal crops with legumes in order to provide stable supplies of nitrogen and to reduce the amount of labor required for fertilization.

Conventional agroecological practices in Baltistan are characterized by a diversity that minimizes risk from natural hazards. For example, the strategy of planting multiple varieties of wheat has the specific advantage of creating a heterogeneous surface of production so that the risk of damage from pest and disease infestation is reduced. An additional advantage is that some varieties are early-maturing (maturation times vary by as much as 30 days), which means that in the event of an early-fall frost or a late-season drought, at least some of the grain is ready for harvest before the crop is damaged. Similarly, fast-maturing varieties can be held back for late planting in the event of a late-spring frost. These risk-minimizing practices are not unique to Baltistan but are characteristic of what has been called a "mixed mountain farming system" (e.g., Rhoades 1986), within which much of the operative agroecosystem can be interpreted in terms of intentional and unintentional means of mediating acceptable levels of environmental risk. Over time, this has resulted in the development of specific agroecosystems that are integrated with local ecological dynamics and designed to secure a consistently adequate food supply within the context of a historical knowledge of variability in that environment (see box on next page).

Within both the crop and livestock spheres of production, polycultures are maintained that are based upon a diversity of species. Indeed, polyculture is often seen as a traditional strategy that promotes dietary diversity, yield stability, reduced insect and disease incidence, the efficient use of labor, the intensification of production with limited resources, and the maximization of returns under low levels of technology (see Altieri 1987, Liebmann 1987). These features of agroecosystems in Baltistan are hardly unique. Indeed, they share many functional similarities with traditional agroecosystems in other parts of the world (Vandermeer 1989). These systems are characterized by a high structural diversity in time and space, and, as we find in Baltistan, include practices that exploit the full range of local microenvironments; maintain closed cycles of materials and waste through effective recycling practices; contain complex biological interdependencies resulting in a high degree of natural pest

and disease suppression; and are highly dependant on local resources and human and animal energy, thereby using low levels of input technology and resulting in positive energy efficiency ratios (see Gliessman 1998).

It is important to note that the risk-reducing characteristics of the subsistence agroecosystems in Baltistan are integrated with social institu-

Characteristic Risk-Minimizing Practices of Single-Cropping Zone Agroecosystems in Baltistan

CROP PRODUCTION
• Household landholding dispersed across space (distributes risk of damage to fields and crops across the productive landscape) • Agropastoralism with mixed cropping (maintains diverse sources of food and nutrition) • Heterogeneous cropping landscape (reduces risk of damage from crop disease and pest infestation) • Intercropping (provides synergetic benefits such as organic fixing of nitrogen or ability to extract deeply leached nutrients; reduces cost and energy associated with the acquisition and import of synthetic inputs) • Polyvarietal planting of staple crop including an early variety (reduces degree of damage in event of early fall/late spring frosts; reduces damage from pest and disease infestation) • Delayed planting of short-duration secondary crop (provides caloric security in event of late spring frost) • Crop rotation (maintains soil quality, reduces probability of pest and disease occurrence) • Erosion reduction (maintenance of key production input) o terracing of slope o division of fields into irrigation beds o planting of vegetation in gullies o construction of step terraces in gullies o field reclamation techniques • Coordinated experimentation with new innovations and planting material (inclusion of new cultivars and agricultural practices to assess their capacity to improve production)
LIVESTOCK PRODUCTION
• Species diversity (procures a variety of livestock products with differing nutritional value; limits the risk of the total loss of a significant economic asset due to illness or disease; is a convertible asset during periods of crisis or low food supply) • Spatial dispersal of pastures (distributes the effects of grazing; protects ecologically vulnerable areas; secures a regenerative food supply) • Communal tenure of pastures (distributes the costs associated with private ownership; frees up labor for crop production; allows for pooling and more efficient use of assets) • Coordinated movement of collective village herds and flocks (ensures adherences to the agricultural production schedule; ensures that planting and harvest will not be compromised) • Collective labor arrangements (overcome the limits and constraints placed on their ability to respond to hazard by a lack of labor; maintain shared physical infrastructure like irrigation channels) o voluntary work groups o communal work groups o stock associateships o threshing partnerships

tions at the village level. Villages rely on these institutions for effective coordination, and many of the inherent benefits of these systems are only realized through the practices and decisions undertaken through these institutions. The two most important institutions are the household head (*khang-go*) and the village councillor (*yul hltumpa*). The household head is a long-term position effectively held by the oldest productive member of the household. The *yul hltumpa*, on the other hand, is appointed according to a rotating schedule governed by the normative practice of *res* (turn-taking). These men—the office is only held by men—are responsible for maintaining the production schedule and ensuring that no one household infringes upon the well-being and collective needs of the village. They not only enforce normative rules, such as making sure that households maintain fences to prevent the escape of livestock that might graze on fields belonging to fellow villagers, but they ensure that households contribute the labor necessary to maintain irrigation canals; decide when animals will go to, and return from, pasture; monitor the progress of harvest to ensure that crops are off the fields and threshed before the onset of fall snow; and decide when threshing can begin. The number of *yul hltumpa* varies depending on the size of the village, but officeholders are appointed for a one-year term from the roster of village households.[4] One cycle of the schedule will see the *khang-go* of every household appointed to a term as *yul hltumpa*. The heads of households are ultimately responsible for the security of household members, and they fulfill that duty partially by ensuring that labor is allocated in accordance with both the physical limits and the social schedule of production. The need to coordinate household activities with the collective needs of the village means that the decisions of the *khang-go* need to be integrated with the decisions and decrees of the *yul hltumpa*, who have the authority to impose sanctions on delinquent households. Similarly, villagers can, at the end of a term of office and by consensus, levy significant fines against the *yul hltumpa* if they feel that the officeholders have compromised the well-being of the community.[5]

The subsistence system outlined here is, like many in the Himalayas, oriented around the minimization of risk (Mishra et al. 2003, Aase and Vetaas 2007). Part of this risk mediation is expressed in practices that can be seen as flexible adjustments to specific, known, and identifiable risks. But these practices do not exist separately from a set of social institutions

that structure their application. At the levels of both the household and the village, they are responsible for the security of individuals and, ultimately, the reproduction of the community.

This subsistence system is time-tested. Despite significant constraints on the supply of water and land, and despite the pronouncements of interventionist agencies such as the World Bank and the Aga Khan Rural Support Program (AKRSP) that the area is marginal for agriculture, farmers in Baltistan have consistently attained high yields, and agronomists have noted the high production potential of the area (Whiteman 1985, 1988), including phenomenally high yields of wheat that have led some to describe the region as "one of the best areas in the world for high yields of temperate crops, given adequate manuring and irrigation" (Whiteman 1988, 72). Farmer estimates of annual wheat yields in the upper Braldu valley of Baltistan, for example, average 2.23 tons per hectare (t/ha), and compare favorably with average yields for wheat in North America (2.4 t/ha) and the former USSR (1.5 t/ha) (MacDonald 1998). In some villages, these yields allow households to carry over 20 percent of their annual production in storage, which provides a buffer against potential reductions in future yield.

In essence, the diversity of crops and livestock, agroecological practices attuned to prevalent forms of environmental risk, the dispersal of land, and the legitimacy of regulatory social institutions all act to spread or distribute risk and leave something in reserve in the event of a calamity. In the end, the goals of production, and, hence, the agroecosystem, are ultimately concerned with how people survive and how social reproduction is ensured within fundamental environmental conditions. Netting (1981, 57) views these goals as simple and direct: "[H]ow people get enough to eat, clothing and shelter to protect them from the elements,… and sufficient stored goods to see them through a bad year or two."

In some ways, the development of a reliable food production system in Baltistan is not terribly surprising. While the settlement history of much of Baltistan has not been adequately documented, oral tradition and remnants of prior belief systems suggest that many villages have existed in their current locations for at least two thousand years (MacDonald 1994). This long period of occupancy has allowed not only for the development of agricultural practices suited to dominant ecological conditions, but also for the development of social processes through which

knowledge about the integral relations between ecology and production and the effective management of these relations has been passed from generation to generation. Over those two thousand years, remarkable changes have occurred in the region. Four different major belief systems have held sway; ruling groups and systems of governance have come and gone; and orientations of trade and exchange have shifted with them.

Through these years production systems have also changed. Some of these changes have certainly been grounded in political context (e.g., shifts in amounts and type of taxation taken by ruling administrations). Other changes have occurred in relation to shifts in social status and belief. Barley and millet production has declined as they came to be seen as "poor man's" crops; this change in status is likely tied to a shift from Buddhist to Islamic belief systems, and the central role played by both barley and millet in Buddhist rituals. Other crops, however, have been introduced over the years, including potatoes (in kitchen gardens), buckwheat (Onishi 1994), and poplar trees (used in construction and likely carried over mountain passes centuries ago by migrant laborers from Yarkand, in what is now Xinjiang).

The agroecosystem, then, is clearly flexible and adjusts to political and ecological dynamics as well as to opportunities such as the introduction of new cultivars. However, in the case of introducing new cultivars, that adjustment occurs within the bounds of social norms and institutions that guide change and systems of experimentation and evaluation that provide the information used in deciding whether or not to implement change. An example of this process of change is useful in helping to understand the relations between development agents and farmers and the potential of "development" to enhance vulnerability to food insecurity in Baltistan.

TRIAL AND ERROR: THE DYNAMICS OF AGROECOSYSTEMS

Through the late 1980s and early 1990s, the Aga Khan Rural Support Program (AKRSP) set about introducing a new, allegedly high-yielding variety of wheat into Baltistan, which it had sourced from Xinjiang. This variety, which came to be known locally as *Chin Tro* (China Wheat) was field-tested on small plots in the main market town; high yields were confirmed, and a distribution program was established. Like many

Green Revolution innovations, however, these plots were not indicative of the actual production conditions of most of the villages where the cultivar would be introduced. At the time, I was conducting ethnographic research in a village that was at the end of a high valley, off the road, and three days' travel from the main market town. This village was not on the list of initial villages that received the seed, and it would be two years before the agency officially commenced operations in the village. Regardless, village men acquired some seed through informal exchange networks, and their actions provided some important insights into the process of change in regional agroecosystems. In effect, they set up a field trial that was much more extensive and locale-specific than those of the agency introducing the seed.

In these field trials, which extended over a period of five years, the new variety was planted across all traditionally defined land types and microclimatic zones in the village. This meant that in the trial as a whole, villagers could observe how the crop performed over time on different soil textures, on different slope aspects with distinct diurnal temperature fluctuations, and under different amounts of sunlight, irrigation water, and manure. The trial also had an important social component: The new variety was only planted by those households that could afford to sacrifice the production of small plots of land for the field trial and absorb the potential crop loss from an untested variety. However, while only land-rich households conducted the field trials, the results were open for anyone to see. People walking through the fields could observe how the new variety was performing at any point in the production cycle, and that performance came up regularly in the informal daily gatherings held in the village.

Just as the variety was tested under variable growing conditions, there were distinct criteria through which people assessed its suitability for adoption. Some of these concerned how the variety performed through the agricultural season and included assessments of stalk strength; size of head; yield of grain; yield of fodder straw; and time to maturation. These criteria are all grounded in predominant ecological and social requirements. For example, stalk strength is important; in high mountain valleys, strong downslope winds in the fall mean that lodging[6] is a consistent concern when evaluating the suitability of crops. New varieties must be able to withstand the force of these strong winds. Similarly,

the potential for early-fall frosts creates a preference for short-maturing crops to increase the likelihood of a successful harvest.

Yield also factors into evaluations, as farmers need enough grain to satisfy household demands and to provide a surplus to meet social and ritual obligations. This need to accommodate physical and social requirements means that an optimal variety must, at a minimum, contain a balance between head size and stalk strength, while matching or surpassing the yield of the cultivars they are already using. Maturation time is also extremely important, not only for reasons of seasonality, but also for its complementarity with other elements of the agroecosystem which are governed by specific institutional rules. For example, all crops must be mature and harvested before the *yul hltumpa* allow livestock to return from high pastures. As these livestock (particularly *dzo*) are required for draft power, an early maturation date is needed so that enough time is available for threshing and winnowing before the onset of winter snows. Any new cultivars that do not fit within this production schedule not only pose the threat of crop loss but also represent a significant challenge to the authority of the *yul hltumpa* and raise the possibility of substantial social conflict.

Other criteria for determining the acceptability of the new cultivar revolved around issues of preparation and consumption, including dry stone grinding (another traditional practice), its malleability as dough, and its taste. In a diet that relies heavily on cereal grains, these extremely important criteria mean that its acceptability is bounded by social norms of style and taste, and its commensurability with other traditional practices (e.g., specific techniques of milling and food preparation).

In many ways, the process at work here is a form of experimentation that provides villagers with "longitudinal data" with which they may judge the response of a new innovation to a range of seasonal growing conditions, its ability to fit into existing production systems, and how well it satisfies specific social requirements. In the case of *Chin Tro*, most farmers were reluctant to adopt it. Their observations suggested that while the variety did have a higher potential yield than existing varieties, this had been accomplished by compromising stalk strength. Additionally, much of the potential yield increase would be lost to lodging as the heavy head caused stem collapse during periods of strong winds. They also noted that the crop pushed the boundary of the grow-

ing season, leaving it susceptible to frost damage in the fall and with insufficient time to dry. Without adequate drying time it would not mill properly. Finally, they did not like the taste when it was baked.

There were also suggestions that even if the cultivar were to be adopted, it would not achieve the yield increases envisioned by the development agency. Farmers said that if they were to adopt the new cultivar, it would be "mixed" with the other varieties and not grown as a pure stand. Contrary to development agency plans, the farmers preferred to maintain a strategy of polyvarietal planting. This preference is not unusual among small-scale farmers and reflects a concern with providing as many options as possible in the face of potential environmental "fluctuations" (Richard 1985, 1986). Indeed, this concern highlights the purpose and central goal of the field trials I have described here—to determine whether the new variety can productively be incorporated into the agroecosystem with minimal disruption, and to evaluate the relative advantages of doing so. Whereas the development agency viewed the new variety as a monovarietal replacement for the polyvarietal system that currently exists, villagers saw it as a potential addition to that system. If it were to be accepted, it had to be suited to, and improve upon, existing production practices and the seasonality of the local economy, which hinge not only on the main wheat crop but also on the entire agropastoral transhumant cycle.

Unfortunately, experimentation on the part of farmers seems to go unnoticed or at least unappreciated by the local nongovernmental and governmental development agencies. But, in this case, it was through the experimentation process that farmers in some off-road villages evaluated and decided upon the role of the new crop variety in their agroecosystem before it was officially introduced by the development agency. This unfamiliarity with small-scale farmers' propensity for experimentation led to communication breakdowns, serious misunderstandings, and conflicts when the AKRSP attempted to introduce the new variety officially. In my conversations with AKRSP staff and agronomists, this reluctance to adopt the new variety was explained as a function of resistance on the part of more "traditional" villages that were not as modernized as those closer to the market town. AKRSP personnel also conveyed a lack of appreciation for the assessment criteria that were used to evaluate the crops' performance. When I was describing farmers'

concerns about the taste, one agronomist dismissively replied that "they won't care what it tastes like when they're starving." While seemingly trivial, this comment is revealing, as it belittles the qualities of crops that farmers think are important and demonstrates an emphasis on the qualities such as yield maximization that are priorities from the perspective of the development agency. It also demonstrates a lack of knowledge of food security in villages, and an assumption that villagers lack the capacity to satisfy their own food requirements. Notably, while famine was not uncommon in other areas of Kashmir during the 19th and early 20th centuries, largely due to a lack of entitlement, it has not historically been an issue in Baltistan.

Chambers (1983, 92), in his appraisal of the preconceptions dominating rural development, assigns part of the reason for this ignorance to a "top-down" approach to development. He states that the readiness of farmers to experiment and innovate on their own has been obscured by the preoccupation in the social sciences with agricultural research, extension, and communication, which are carried out through official organizations. Yet, innovations that farmers can manage and find to be sufficient spread very rapidly through a kind of unofficial network of research and extension programs that operate independently of government and development agencies. Farmers share new seed stock, technologies, and the results of experiments not only within villages but also between villages. Given the differing objectives of agencies and small-scale farmers, this unofficial network is typically more oriented in practice toward farmer goals and "real" field conditions rather than the "resource-rich" situation of agency test plots (Hecht 1987, Richards 1996). As noted, however, this unofficial research network is commonly "overlooked by all except the small farmers themselves" (Chambers 1983, 92).

The AKRSP, for example, maintains small test plots at its district office in the town of Skardu, and occasionally monitors farm results at low elevations. Yet the organization has been totally unaware of the village-level experiments occurring in high-elevation villages such as Askole. As a result, they miss an excellent opportunity to monitor and evaluate farmer-conducted field trials in high-elevation, single-cropping zones where the results of low-elevation test plots are largely inapplicable. This missed opportunity would appear to be the result of a bureaucratic emphasis on the "top-down" transfer of information, knowledge, and

technology; an unfamiliarity with such transfers as they occur outside of "official" channels; and, as mentioned, an ignorance of "unofficial," or informal, research networks among small farmers and the means of spreading results that do not depend on literacy. This neglect also results in a missed opportunity to learn and, consequently, to engage in improved program design that contributes to enhanced food security in communities rather than in programs that potentially make communities more vulnerable to crop failure.

TRADITION IN DEVELOPMENT

Notably, the responses of development agency personnel to the village-based field trials reflect an ignorance of the rationale for farming practices. This is not surprising. The AKRSP began operations in northern Pakistan on the basis of existing development models and assumptions about their applicability in the region. Its programming was not grounded in any ethnographic or agroecological research in the region. This lack of research is, unfortunately, characteristic of development agencies that are constrained by the demands of donors, staff not well-trained in research, and the reluctance of staff to engage in long-term fieldwork. But more importantly, development agency responses reveal the ease with which development actors can rely upon the rhetorical devices of modernization theory to support their views. What was clear in my discussions with AKRSP personnel was that they attributed villagers' reluctance to adopt new varieties to being a function of the villagers' "traditional" beliefs and practices. In using the word "traditional," AKRSP was invoking a view of development grounded in a European intellectual history of modernity that constructs tradition as not simply a condition of stasis, but as resistance to change, and the transmitters and receivers of tradition as unwitting participants in the enterprise, passing on and passively receiving beliefs that have no rational content or empirical validity.

Critics of conventional modernization theory have effectively pointed out that this concept of tradition is a value construct that emerged during the European Enlightenment and situated the progressive results of scientific knowledge and rationalism in dialectical opposition to the dogmatism of an old order. Within this ideological frame, tradition was

conceptually opposed to empirical rationalism and characterized as a condition of ignorance (Shils 1981, Cowen and Shenton 1995). This is in essence the same argument laid out by some agents of rural development—for whom tradition is a condition that keeps people locked in a state of ignorance or intellectual imprisonment and, hence, constrains the implementation and acceptance of improvements, or what these agents represent as progress. Often, and despite claims of an appreciation for "traditional knowledge," this opposition sets the practical goal of rural development.

Yet all of the qualities of the agroecosystem that I described above—a set of dynamic, integrated social and agroecological practices that provides substantial food security—are grounded in "tradition." Tradition in this context, however, is distinct from the defining qualities of stasis and obstruction that are often assigned by development agencies. Rather, the dynamic qualities of this agroecosystem, and particularly the codified process for assessing innovation and change, reveal that tradition can be seen as a process—one with temporal and social dimensions that allows innovation-based change to occur within standards defined from within the community affected by that change. These standards, beliefs, and rules—the stuff of tradition—form the basis for conducting and evaluating the village-based field trials and guide the ways in which change happens.

This treatment of tradition, one that characterizes it as a dynamic process of invention and transmission—of "passing on," and not as a barrier to change per se—is markedly different from the role of tradition in the sort of conventional modernization theory dominated by the likes of Rostow's Stages of Growth. These works not only fail to admit to the hubris of universally applying a European concept of tradition across distinct intellectual and linguistic contexts, but they also do an injustice to the concept of tradition within its own intellectual history. Indeed, one effective way of grasping the dynamic character of tradition is simply to consider the Latin root of the word, which distinguishes between two basic elements:

1. *traditum*, the stuff of tradition or that which is passed on (e.g., beliefs, practices, patterns of conduct, and so on); and

2. *traditio*, the process of tradition; essentially the way in which traditum are passed on.

In its simplest form, tradition describes a process in which the substance of tradition (*traditum*) is transmitted (*traditio*) from one generation to the next (Shils 1981). This happens through repeated cycles of presentation and reception between generations. In the context of an agroecosystem, this occurs through complex structural processes that differentiate between people on the basis of characteristics such as gender and social status. As children grow up in these defined positions, the knowledge and skills required to reproduce that system are gradually provided to them. However, no practice, belief, or rule remains unchanged through successive generations of transmission. Rather, these are transformed in a number of different ways by each generation of recipients: new interpretations are made by successive generations as beliefs and practices are received and enacted; and they also change through self-reflection or the introduction of new ideas that lead to innovations or the modification of a traditional practice, belief, or rule.

It is important to stress when talking about processes of change that there are always altered situations of action between generations. From generation to generation, even where there is a desire to follow the practices of preceding generations and to re-achieve specific goals (e.g., the production of certain yields), new ways of acting are required simply because the social relations in which individuals and communities are embedded are constantly changing—natural conditions fluctuate; rulers are deposed; political systems change; populations increase or decrease; and new economic opportunities arise. This simply recognizes the fact that no production or belief system is closed or immune from the effect of extraneous elements. To achieve certain ends or objectives in line with new situations, actors—for instance, villagers—pursue certain activities that they think will meet those ends. This occurs either through innovation (i.e., the adoption of a completely new practice) or, more typically, through the modification of previous knowledge or practices.

However, modification and innovation do not occur independently of a social context that provides the moral basis for the community. It is this social context, including the underlying norms and shared values, which form a kind of social border that guides the process of change.

And it is this "border" of norms and values, themselves dynamic, that works to ensure that any new practice is not simply an improvement on what has gone before, but at the same time does not result in change so sudden or dramatic that it would disrupt the stability of the system and the mutual benefits that it provides to all. These are the devices and principles that have proven their ability to order the experience of communities and consequently define and control their activities. Any change is subject to the "approval" of these devices and principles—they act as boundaries against change, and seek to ensure that any change does not compromise the sustainability of the community.[7]

It is instructive to apply this construct of tradition to the example of experimentation presented above. Food security in many Balti villages is dependant upon a complex interrelationship between a detailed knowledge of ecology, a historical knowledge of environmental dynamics, and well-developed agroecological practices attuned to that knowledge. Introducing changes to this interdependent system poses a substantial risk to the productive capacity of the entire system. Accordingly, intentional change, when it occurs, happens incrementally, and is based not only on a detailed knowledge of how that system functions to meet social objectives, but also upon an evaluation of the degree to which an innovation affects the existing interrelationships of production and the degree to which it places the system at risk of failure. The process that facilitates this evaluation is a normative one that is grounded in the responsibility of social institutions and the shared values for collective well- being that underpin these institutions and provide them with their legitimacy. So, if farmers adopt a practice handed down from a previous generation because it "made some sense," this does not mean that they do not introduce their own modifications to it, nor that farmers in each generation do not undertake their own innovative modifications of prior practices. They do, but it is the purpose of tradition in both senses of the word to ensure that new modifications allow for improvement while maintaining those elements of the system that contribute to food security and the social reproduction of the community. Interpreting tradition as a process allows us to understand how the real achievements of the past act as a guide to acceptable developments of the future.[8] It also emphasizes the continuous and functional relationship between tradition and innovation—an interdependence between tradition and change,

whereby tradition legitimizes change by attempting to ensure that it occurs in an incremental form within or according to community norms and standards (Tabboni 1988). This, in turn, means that a modified traditional practice will only become tradition itself if it, at a minimum, re-achieves previous goals and meets the stringent requirements of traditional rules and institutions (both of which are also subject to review and modification through a similar process).

Contrary to the rigid methodologies of many development programs and projects, sitting with, listening to, and learning from small farmers leaves one with the impression of a contextually progressive agroecosystem, which is far from "backward" or "resistant to change" and contains many important lessons. Indeed, the experimentation discussed above is evidence that this system has a strong, locally specific ecological and social rationale, and that the elements of it that help farmers cope with environmental and economic risks are not random or ad hoc but have their foundation in a detailed process of "prudent curiosity" and judicious testing, both of which have "survival value" (Chambers 1983, 91). Paraphrasing Hewitt (1992), human agency is not an ignorant or helpless accomplice in mountain environments, and, in the ways discussed above, villagers demonstrate the capacity to effectively adapt to their setting and to define what forms of development constitute "improvement." Uninformed and "top-down" tampering with this system has the potential to impair this capacity and result in significant social and material damage to the peoples concerned.

CONCLUSION

This essay has made a number of main points:

- Agroecosystems in many parts of northern Pakistan have developed over centuries in accordance with a detailed knowledge of dominant ecological conditions and in relation to the social objectives of communities;
- These systems, which provide high degrees of food security, are dynamic and have changed over time in relation to ecological dynamics and opportunities to improve both yields and nutritional status;

- Changes to these systems are grounded in processes of experimentation that ensure that change is incremental, can be evaluated in relation to production objectives, and do not compromise the well-being of the community; and
- Both the agroecosystems and the process of change can be described as traditional, when tradition is understood to be a dynamic process of invention and transmission.

A failure on the part of development agencies to recognize the dynamic characteristics of agroecosystems has the very real potential to threaten these systems' capacities to retain their risk-reducing features and to continue to provide food security. There are a number of reasons for this, but the most striking has been the tendency of governmental and nongovernmental agencies to intervene in agroecosystems without sufficient knowledge of the likely effects of their interventions. To a remarkable extent, they have, despite being active in the region for more than 20 years, failed to undertake significant ethnographic and agroecological research into the region's farming systems. In most cases, innovations are introduced with little or no understanding of existing systems of production—why people do what they do and the social, economic, and political factors that shape their actions. They are also being introduced with little knowledge of the integration between agricultural production and the social vitality of communities.

Most importantly, interventions are occurring with little knowledge of benchmark conditions against which to measure their effects. This is markedly clear in the example I have provided in this essay. The agroecosystems in the concerned communities clearly prioritize minimizing risk over maximizing yield. Given the degree of ongoing environmental risk that they confront, there are good reasons for this. Yet the practices—such as polyvarietal planting and intercropping—that express these production objectives have been viewed, by governmental and nongovernmental development agencies operating in the region, as inhibiting change. Indeed, almost from the outset of development programming in the Northern Areas, the AKRSP has faulted traditional practices as partially responsible for the low levels of adoption encountered in their attempts to introduce improved high-yielding varieties into the area, noting that

> [T]here is circumstantial evidence that the improved varieties have lost their yield advantage over time, as their seed quality has deteriorated due to mixing with other varieties. Most fields had significantly mixed stand[s] (Hussain 1987, 20).

This is not to say that food production cannot or should not be increased in the region, but that interventions aimed at increasing production have typically had significant costs in the form of reduced crop diversity. The potential reduction or elimination of this diversity is itself not without consequences, primarily in the form of an associated increased risk of food loss as new hybrids often require production inputs not available to most small-scale farmers and are frequently ill-suited to local growing conditions or storage requirements. This reduction in crop diversity and disruption of traditional practices effectively remove food security from local control, increase the dependence of producers on broader market conditions, and expose them to new forms of vulnerability associated with the market. This is not a new observation by any means, which makes it even more surprising that the inherent warnings against reducing the diversity of production have been ignored by agencies like the AKRSP, which ironically garner praise for being among the most sensitive to the needs of rural peoples.

Part of the explanation for this neglect is rooted in the continuing definition of tradition as an obstacle to development rather than as a process through which intervention is evaluated and guided. This would seem to explain the apparent unwillingness on the part of development agents to accept that a community has the capacity to evaluate an innovation on its own terms and to choose to reject it. This essay has emphasized the concept of tradition because it is, to a large extent, the grounds on which a struggle over food security is fought in parts of northern Pakistan. It is the persistence of tradition and its capacity to evaluate the potential outcomes of innovation that have allowed the risk-reducing qualities of agroecosystems to persist in the face of external interventions that have, through their failure to understand the rationale of longstanding practices, carried a very real risk of significantly increasing peoples' risk of food insecurity.

These interventions have not only sought to replace cultivars and alter traditional practices (as in the example described here), but have also threatened the legitimacy of the social institutions that regulate and coordinate the production cycle. In doing so, they challenge the features of production that have historically contributed to food security in these high mountain valleys, including a longstanding security of land tenure; access to multiple microenvironments; collective control over production decisions and goals; internal legitimation of social institutions; the limited ability of the state to extract resources; and the integration of social and agroecological practices.

Of course there are other factors that act to compromise food security. The penetration of nationalist party politics has magnified factionalism in villages, as did the rapid growth in adventure tourism during the 1990s. The growth in mountaineering and trekking has emphasized the exchange value of food and labor, demanded that men work as porters, and placed an increased labor burden on women and the elderly as they have assumed greater responsibility for food production. There are indications that these political and economic shifts have diminished the resilience of social institutions in villages.

Given that the marginal political and economic position of Baltistan within Pakistan is unlikely to change in the immediate future, devolving even partial responsibility for primary food supply to the market could have potentially catastrophic consequences for many people. The lack of political voice, the historical lack of state institutional support, and the fragile supply infrastructure leave the market with a poor capacity to meet regional food needs in the event of a crisis. The market also holds the additional potential of an entitlement crisis, which could leave some villages with little capacity to draw on market supplies in times of need. This makes it all the more important that development agencies and workers step outside of the frame of modernization theory that has guided so much development work in northern Pakistan, adopt a learning perspective, and work with communities to both understand and strengthen traditional systems of food production. The combined effects of both planned and unplanned development place an even greater onus on development agencies to overcome the systemic ideological and material constraints that inhibit their capacity and willingness to develop a detailed understanding of the contextual rationality of existing agroeco-

logical practices; to accurately identify the impact of their interventions on community food security; and to avoid compromising the existing capacity of communities to meet their food needs.

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NOTES

1 Zulfiqar Ali Bhutto took steps toward altering this status, but these were blocked following his execution by Zia ul-Haq. Bhutto, however, did repeal the land tax in FANA, largely following the argument that because there were no services being provided, there was no basis for taxation.

2 The extent to which this voice is marginalized is reflected in the historical absence of FANA from maps of the country published in official state gazetteers and school textbooks.

3 There are substantive variations within each of these categories.

4 For example, in a village of 40 households with four *yul hltumpa*, the head of a household would serve once every 10 years.

5 Such fines are almost always collected as foodstuffs, which are subsequently used during village ceremonies.

6 Lodging occurs when a plant is beaten flat, usually induced by a stem or shallow root system toppled by the force of gravity or wind. It is more common in grain as the head ripens.

7 Community sustainability is defined as social vitality, economic viability, political validity, and ecological integrity.

8 This is not to ascribe any moral quality to tradition, which is framed within the power relations of any given community. Tradition can operate to oppress some while simultaneously providing degrees of freedom for others.

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