

Aching Backs, Forgotten Voices: Reflections on Ergonomic Risk Among Rice Farmers

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Introduction

Rice farming remains the backbone of rural livelihoods across Southeast Asia, particularly in the Philippines, where agriculture continues to support both national food security and the socioeconomic fabric of countryside communities. Despite its critical role in sustaining life and livelihood, the occupational hazards faced by rice farmers are often underrepresented in both policy discourse and academic literature. One of the most pervasive yet overlooked issues is the ergonomic burden carried by the farmers themselves.

Filipino rice farmers are predominantly older adults who engage in labor-intensive farming activities without the aid of advanced machinery or ergonomic tools. Daily tasks such as bending during transplanting, lifting heavy sacks of fertilizer or harvest, and walking long distances across muddy fields take a cumulative toll on their musculoskeletal systems. The result is a silent but widespread experience of pain, fatigue, and physical degradation that compromises not only individual well-being but also long-term agricultural productivity.

This paper seeks to reflect on the state of ergonomic risk exposure in rice farming, grounded in the Philippine context. Drawing on current regional literature, anecdotal insights, and cross-country comparisons, it explores the intersection of health, labor, and rural development. As we uncover the structural and physical barriers confronting farmers, this discussion also highlights pathways for change, emphasizing the importance of empathy-driven, culturally relevant, and economically feasible interventions.

Epidemiology of Ergonomic Risk

In recent years, a growing body of literature from Southeast Asia has spotlighted the high prevalence of musculoskeletal disorders (MSDs) among agricultural workers, particularly those in rice farming. Studies report that MSDs affect over 78% of rice farmers in Thailand, while similar trends have been noted in Vietnam, India, Indonesia and Malaysia (Jaikla K, Tadee A, Baubhom T (2026); Rahdiana, et.al (2022)). These conditions are primarily associated with physically demanding tasks such as repeated bending during planting, lifting heavy tools or loads, and maintaining awkward or static postures for prolonged periods.

Research has consistently shown that the most commonly affected body regions among rice farmers are the lower back, shoulders, knees, and neck (Rekha & Bajpai, 2016; Kuta et al., 2015). The lower back, in particular, bears the brunt of strain due to continuous stooping motions, often without adequate rest breaks or ergonomic support. In a study conducted in Indonesia, nearly all respondents (93%) reported lower back pain as a chronic condition particularly on waist pain, with many also experiencing discomfort in the wrists and ankles due to repetitive handling of tools and materials.

In addition to physical postures, age, workload, and years of experience have been identified as significant factors contributing to the severity and frequency of pain. Older farmers—many of whom have been working in the fields for decades—are especially vulnerable. Unlike formal industrial workers, farmers rarely undergo regular health monitoring, which means injuries go untreated and worsen over time, leading to potential disability or withdrawal from farming altogether.

Furthermore, there is an emerging understanding of the psychosocial dimensions of ergonomic risk. Stress from financial instability, unpredictability of harvests, and lack of support can exacerbate physical pain, suggesting a complex interplay between the mental and physical aspects of agricultural labor.

Local Context in the Philippines

While Southeast Asian neighbors have begun to map and quantify ergonomic risks in rice farming, the Philippines lags behind in producing localized, data-driven assessments. The few studies available are typically small-scale, region-specific, and often unpublished theses or government reports. Yet, they provide critical insights into the lived experiences of Filipino farmers.

According to data from the Philippine Statistics Authority and the Department of Agriculture, the average age of a Filipino farmer is 57 years old, signaling an aging labor force with diminishing physical capacity for heavy manual work. Despite government calls for modernization, most smallholder rice farmers continue to rely on traditional tools and labor-intensive methods, often passed down through generations. Basic implements such as wooden plows, sickles, and hand tools remain common in areas where access to mechanization is limited by cost, terrain, or lack of training. These traditional ways of farming are not EASNE (Effective, Safe, Healthy, Comfortable, and Efficient). The most dominant causes are the factors of work tools, methods, and humans/farmers themselves (Rahdiana et al., 2021).

Socioeconomic constraints also play a pivotal role in perpetuating ergonomic risks. Many farmers operate on marginal lands with limited access to credit, water systems, or infrastructure. These limitations restrict their ability to invest in ergonomic improvements such as mechanized seeders or wheeled carts. Moreover, poverty pushes farmers to work longer hours than advisable, sometimes well into old age, without sufficient rest or recovery.

Programs aiming to distribute mechanized equipment are often inaccessible due to bureaucratic hurdles or mismatched priorities. This leads to a situation where manual labor remains the default, not by choice, but by necessity. The physical cost of this labor is borne by farmers' bodies, and yet their voices remain largely unheard in policy circles.

Neglected Voices and Structural Barriers

Conversations with farmers, rural community leaders, and agricultural extension workers reveal deep frustrations over the disconnect between top-down interventions and grassroots realities. Farmers often report that while some assistance is promised—such as mechanization loans, training, or ergonomic tools—many programs are inconsistently delivered or insufficiently tailored to local needs.

A recurring theme is the lack of inclusion in decision-making. Farmers are rarely consulted during the design or implementation of government initiatives, resulting in interventions that are poorly adopted or outright rejected. For instance, some mechanized seeders introduced in lowland farms were incompatible with local field conditions or required fuel and maintenance costs beyond farmers' means. As a result, many tools lay unused, stored in barangay centers or warehouses.

This reflects a broader systemic neglect in how agricultural work is perceived and supported. Unlike factory or office workers, rice farmers are often excluded from formal labor protections and ergonomic standards. There is no routine occupational health surveillance in the agricultural sector, nor are there safety guidelines specific to rice farming tasks. This invisibility reinforces the notion that pain is simply part of the job, rather than a preventable occupational hazard.

However, participatory design and co-creation offer an alternative. In other countries, involving farmers directly in designing tools and work processes has resulted in higher acceptance and more effective ergonomic outcomes (Thongchoomsin et. al, 2025, Kee, D. ,2022). Unfortunately, such approaches remain underutilized in the Philippine agricultural landscape.

Empathy and Action in Ergonomics

There is growing evidence to suggest that participatory ergonomic interventions—those developed in collaboration with farmers themselves—can significantly reduce postural strain and improve both health and productivity. In Thailand, for example, community-driven ergonomic programs led to a substantial drop in RULA (Rapid Upper Limb Assessment) scores and an increase in subjective well-being among older farmers (Thongchoomsin et. al, 2025; Kee, D. ,2022). Simple changes such as modifying handle heights, introducing lightweight tools, or adjusting work-rest cycles produced measurable health benefits.

In the Philippine context, such strategies must be culturally adaptive and cost-effective. Solutions need not be high-tech or expensive. Even simple adjustments, like knee pads for transplanting or mobile carts for fertilizer transport, can reduce cumulative physical strain. Importantly, these interventions must come from dialogue with farmers, not merely imported from foreign contexts.

Training also plays a critical role. Integrating ergonomic awareness into agricultural extension services can help farmers identify unsafe practices and adjust their behaviors. Educational materials, visual aids, and peer-led demonstrations have all proven effective in increasing ergonomics knowledge and changing work habits in low-resource settings.

Ultimately, action on ergonomic risk must combine technical design with social empathy. The goal is not just to make farming easier, but to affirm the dignity of farmers and ensure they are not physically broken by the work that feeds the nation.

Conclusion

The physical toll carried by rice farmers in the Philippines is not merely a health concern—it is a development challenge, a food security issue, and a matter of social justice. As this paper has illustrated, ergonomic risks are deeply embedded in the structures of rural labor, shaped by both material conditions and policy gaps.

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