Scholedge International Journal of *Management & Development*
ISSN 2394-3378 Vol. 13, Issue 01 (2026)
DOI: https://dx.doi.org/10.19085/sijmd130101

Agricultural Modernization and Rural Income Diversification in the Global South

Nabila Rahmawati
Lambung Mangkurat University, Banjarmasin, South Kalimantan, 70123, Indonesia

ABSTRACT

Agricultural modernization has been a defining force in reshaping rural economies across the Global South over the past half-century. Yet the pathways through which modernization connects to rural income diversification remain poorly understood in development policy circles. This paper examines how technological adoption, commercialization of smallholder farming, and structural shifts in rural labor markets interact to shape income diversification outcomes among rural households in developing countries. Drawing on existing empirical evidence from Sub-Saharan Africa, South Asia, and Southeast Asia, the paper argues that agricultural modernization does not automatically translate into broad-based income diversification. Rather, the nature, pace, and distributional outcomes of modernization determine who benefits and who gets bypassed. Households with better access to credit, infrastructure, and markets are better positioned to diversify, while those with fewer assets often face a narrowing rather than widening of livelihood options. The paper also discusses how the rural nonfarm economy acts as a buffer and as a ladder, depending on local conditions. Policy recommendations focus on complementary investments in education, rural infrastructure, and institutional support as conditions that allow agricultural modernization to meaningfully stimulate diversified and resilient rural livelihoods.

Keywords: Agricultural modernization, rural income diversification, Global South, smallholder farming, rural nonfarm economy, livelihoods

INTRODUCTION

For most of the twentieth century, agricultural development in the Global South was understood largely through the lens of productivity growth. The Green Revolution of the 1960s and 1970s, which brought high-yielding varieties, irrigation expansion, and chemical inputs to parts of Asia and Latin America, was celebrated as a breakthrough in the fight against food insecurity (Pingali, 2012). But the story of what happens after productivity grows, what rural households actually do with additional resources, how labor is reallocated, and whether income sources multiply or narrow, received far less attention in mainstream development thinking.

This gap matters enormously. Rural poverty in the Global South is not simply a problem of low farm yields. It is a problem of inadequate and precarious incomes, and of households whose ability to weather economic shocks is limited because they depend on a single activity. The past three decades of research on rural livelihoods have made it clear that most rural households, even in predominantly agricultural regions, draw income from multiple sources (Ellis, 2000; Reardon, 1997). The question that follows is a practical one: does agricultural modernization make it easier or harder for rural households to diversify their incomes?

The answer is not straightforward. Modernization can free up labor from subsistence farming, enabling household members to engage in off-farm work. It can generate local demand for goods and services, stimulating a rural nonfarm economy. But it can also displace smallholders who lack the capital

to adopt new technologies, deepen dependence on commodity markets, and concentrate benefits among better-endowed households. The net effect on income diversification depends on a complex interplay between the type of agricultural change, the asset position of rural households, and the policy environment in which modernization takes place.

This paper takes stock of what researchers and policymakers have learned about this relationship. It draws on empirical studies from Sub-Saharan Africa, South Asia, and Southeast Asia, three regions where agricultural transformation is either actively underway or urgently needed, and where rural poverty remains a pressing concern. The paper proceeds as follows: it first reviews the theoretical foundations underpinning both agricultural modernization and income diversification; it then examines patterns of modernization across the Global South; it discusses how these patterns connect to diversification outcomes; it explores regional evidence; and it closes with a discussion of policy implications.

LITERATURE REVIEW

Agricultural Modernization: Definitions and Dimensions

Agricultural modernization is a broad concept that encompasses technological change, structural transformation of production systems, integration of smallholders into commercial supply chains, and institutional change in how land, water, and capital are governed. Timmer (1988) identified four stages of the agricultural transformation: a period in which agriculture is the foundation of the whole economy; a period in which agriculture contributes to broader growth through labor, capital, and market linkages; a period in which industry and services gradually overtake agriculture; and a final stage in which agriculture becomes integrated into an industrial economy. Most countries in the Global South are navigating the middle stages of this process, though the pace and character of that navigation vary widely.

Hayami and Ruttan (1985) introduced the concept of induced innovation to explain how modernization unfolds in practice. Their core argument was that technological change in agriculture is not random but responds to relative factor scarcities. Countries with abundant land but scarce labor tend to adopt mechanical technologies, while those with scarce land but abundant labor tend to adopt biological and chemical innovations. This framework helps explain why the Green Revolution took root differently in land-scarce South Asia than in parts of Sub-Saharan Africa where land constraints were historically less binding.

More recent scholarship has drawn attention to the institutional dimensions of modernization. Deininger and Byerlee (2011) documented the global expansion of large-scale commercial farming, driven partly by foreign direct investment in agricultural land across Africa and Asia. This phenomenon, sometimes called the global land rush, has raised serious questions about whether modernization in its current form is likely to benefit smallholders or displace them. At the same time, contract farming, farmer cooperatives, and the integration of smallholders into value chains represent alternative pathways through which modernization can occur without necessarily concentrating land ownership.

Rural Income Diversification: Concepts and Evidence

The economics of rural households departed from the simple model of the farm household in the 1990s as researchers began documenting the extent to which off-farm income, remittances, and nonfarm enterprises contributed to household budgets across a range of developing country settings. Ellis (2000) provided what remains one of the most comprehensive treatments of rural livelihood diversity, arguing that diversification is both a risk management strategy and a response to seasonal income constraints, and that it can take multiple forms: diversification within agriculture across crops and livestock, diversification into nonfarm employment, and diversification through migration and remittances.

Reardon (1997) analyzed survey data from rural Africa and found that nonfarm income typically accounts for 40 to 45 percent of household income, with the share rising in regions closer to urban centers and falling in more isolated rural areas. This finding has been replicated across settings. Barrett et al. (2001) found similar patterns in Sub-Saharan Africa and noted that the composition of nonfarm income matters: better-off households tend to access high-return nonfarm activities such as skilled wage employment and trade, while poorer households are often confined to low-return casual labor and petty activities. This distinction between diversification as a poverty trap and diversification as an accumulation strategy is one of the most important insights in the literature.

de Janvry and Sadoulet (2010) emphasized that the relationship between agricultural growth and poverty reduction is mediated by the rural nonfarm economy. When agricultural productivity rises, it generates demand for local goods and services, which in turn creates nonfarm employment. This multiplier effect is larger in regions with better infrastructure and more developed local markets. Their work helped establish a strong empirical case for the view that agricultural modernization, when it reaches smallholders, can stimulate broader rural income growth rather than simply shifting income from farm to nonfarm sources.

Theoretical Frameworks Connecting Modernization and Diversification

Two main theoretical traditions have shaped how researchers think about the relationship between agricultural modernization and income diversification. The first draws on the structural transformation literature, represented most influentially by Lewis (1954) and later by Mellor (1976). In this view, agricultural productivity growth releases surplus labor that can be absorbed by industry and services. Diversification is thus a natural outcome of a successful agricultural transformation. The second tradition, more skeptical of this optimistic account, draws on the political economy literature to highlight how the distribution of assets, the power of entrenched interests, and the design of agricultural policies can produce very different outcomes for different groups of rural households.

The sustainable livelihoods framework, developed by Chambers and Conway (1992) and later operationalized by the UK Department for International Development, offers a more household-centered perspective. It emphasizes that the ability of a household to diversify depends on the asset base available to it, including physical, financial, human, natural, and social capital, and on the vulnerability context in which the household operates. This framework has been widely used in applied research and policy design because it draws attention to the heterogeneity of rural households and the conditions that allow some to benefit from agricultural change while others are left behind.

AGRICULTURAL MODERNIZATION IN THE GLOBAL SOUTH: PATTERNS AND TRENDS

Technology Adoption and Smallholder Constraints

The record of agricultural modernization across the Global South is uneven. The Green Revolution transformed food production in parts of South and Southeast Asia, reducing hunger and releasing millions from subsistence farming. But it largely bypassed Sub-Saharan Africa, where infrastructure deficits, poorly developed input markets, and limited public investment in agricultural research constrained technology adoption (Evenson & Gollin, 2003). The contrast between these experiences is instructive: the same technological packages did not produce the same outcomes across different institutional and geographic contexts.

Smallholder access to improved technologies remains constrained by several well-documented factors. Credit markets in rural areas of the Global South are typically thin and costly, making it difficult for small farmers to invest in improved inputs. Extension services have been progressively weakened in many countries following structural adjustment reforms of the 1980s and 1990s, which emphasized

reducing public spending in agriculture. And market failures in fertilizer, seed, and output markets mean that even when improved technologies are available, smallholders often cannot use them profitably (World Bank, 2008).

Mobile technology and digital platforms have emerged in recent years as potential solutions to some of these constraints. Mobile money services have expanded financial inclusion in East Africa, and digital market information systems have helped farmers in parts of South Asia and West Africa access better price information. But the evidence on whether these innovations are reaching the poorest and most remote smallholders, or primarily benefiting those who already have better market access, remains mixed (Aker, 2011).

Commercialization and Value Chain Integration

A second major dimension of agricultural modernization in the Global South has been the commercialization of smallholder production and the integration of small farmers into regional and global value chains. Supermarket chains, agribusiness companies, and export-oriented processors have extended supply chains into rural areas of Latin America, East Africa, and Southeast Asia, creating new market opportunities for some smallholders while bypassing others (Reardon et al., 2003).

The consequences of commercialization for income diversification are complex. On one hand, stable contracts with processors or supermarket chains can provide smallholders with more predictable income, reducing the pressure to diversify as a pure risk management strategy. On the other hand, the compliance requirements of modern supply chains, in terms of quality standards, timing, and volume, can lock farmers into intensive specialization that crowds out other activities. Whether commercialization supports or undermines diversification depends partly on whether farmers retain control of their production decisions and partly on whether the local nonfarm economy develops in tandem with agricultural commercialization.

Structural Transformation and Labor Reallocation

The broader structural transformation of economies in the Global South has reshaped rural labor markets in ways that both facilitate and complicate income diversification. As agriculture becomes more capital-intensive, labor demand in farming often falls in absolute terms even as agricultural output rises. This creates pressure on rural households to find alternative income sources. In countries where manufacturing and service sectors are growing rapidly, as in Vietnam, Bangladesh, and parts of India, this labor reallocation has proceeded with relatively little disruption. In countries where the nonfarm economy is less developed, the situation is more precarious.

Bryceson (2002) documented what she called the deagrarianization of rural Africa: the process by which African rural households are disengaging from farming as a primary livelihood activity, not because of successful agricultural development, but because of declining farm viability in a context of poor infrastructure, weak institutions, and limited state support. This is a very different kind of income diversification from the one implied by the structural transformation model, and it raises important questions about whether diversification under these conditions improves or worsens household welfare.

RURAL INCOME DIVERSIFICATION: DRIVERS AND OUTCOMES

Push and Pull Factors

The literature distinguishes between push factors and pull factors in rural income diversification. Push factors are conditions that force households to seek off-farm income because farm income alone is insufficient to meet basic needs. These include low and variable farm yields, high input costs, land fragmentation, and asset poverty. Pull factors are conditions that attract households to nonfarm activities

because those activities offer higher returns than farming. These include rising wages in rural nonfarm enterprises, expanding local markets, and better human capital among younger household members.

Barrett et al. (2001) argued that this distinction has important welfare implications. Households that diversify out of necessity, pushed by inadequate farm incomes, tend to access low-return activities and remain stuck in poverty. Households that diversify by choice, pulled by attractive nonfarm opportunities, tend to access higher-return activities and accumulate assets over time. Agricultural modernization, by raising farm productivity, can theoretically shift households from push-driven to pull-driven diversification, but only if the gains from productivity growth are broadly distributed and if complementary investments in education and infrastructure are in place.

The Rural Nonfarm Economy as a Pathway

The rural nonfarm economy, comprising local enterprises, rural services, construction, small-scale manufacturing, and wage employment in non-agricultural activities, has grown substantially across the Global South over the past three decades. Estimates suggest that nonfarm income accounts for between 30 and 50 percent of total rural household income in most developing regions, with significant variation across countries and agroecological zones (Lanjouw & Lanjouw, 2001).

The rural nonfarm economy is closely linked to agricultural performance through forward and backward linkages. When farm incomes rise, rural households spend more on locally produced goods and services, generating demand for nonfarm enterprises. Agricultural inputs, processing, and marketing also create nonfarm employment. This is the mechanism through which agricultural modernization can stimulate income diversification beyond the farm. But these linkages are stronger in regions with better infrastructure and more developed markets. In isolated rural areas with poor roads and limited electrification, the multiplier effects of agricultural productivity growth on the local nonfarm economy tend to be weaker.

Migration and Remittances

Rural-to-urban migration and international remittances represent a third pathway of income diversification. Across South Asia, Southeast Asia, and parts of Africa, migration has become an increasingly important strategy for rural households seeking income from outside agriculture. Remittances from migrants provide cash income that allows remaining household members to invest in farm improvements, education, or small businesses.

The relationship between agricultural modernization and migration is bidirectional. Modernization may reduce the need for migration by improving farm incomes at home. But it may also enable migration by raising household income enough to cover the initial costs of relocating. Taylor et al. (1996) found that remittance income in rural Mexico was partly invested in agricultural modernization, creating a feedback loop between migration and farm improvement. Similar dynamics have been documented in parts of South Asia and Sub-Saharan Africa, though the local conditions that allow remittances to be productively invested in agriculture vary considerably.

LINKAGES BETWEEN AGRICULTURAL MODERNIZATION AND INCOME DIVERSIFICATION

Evidence on Productivity-Diversification Connections

Does rising agricultural productivity actually lead to more diversified rural incomes? The empirical record is mixed. Several studies have found that households with higher farm productivity are more likely to engage in nonfarm activities, consistent with the view that productivity growth frees up resources and time for diversification. Reardon et al. (2000) found across a range of African settings that households with more productive farms also tended to have more diversified income portfolios, particularly in areas with better

market access. This relationship held even after controlling for household wealth, suggesting it is not simply a proxy for asset endowments.

However, other studies have found little evidence of a positive productivity-diversification link, particularly in contexts where productivity gains were concentrated among a small group of better-endowed farmers. When modernization benefits are narrowly distributed, the demand linkages that might otherwise stimulate local nonfarm enterprises are too weak to generate significant off-farm employment for the majority of rural households.

The Role of Household Assets and Human Capital

One of the most consistent findings in the literature is that household assets, particularly education and land, shape how agricultural modernization affects income diversification. Better-educated household members are more likely to access skilled nonfarm employment when agricultural change creates opportunities for labor reallocation. Households with more land are better positioned to adopt modern inputs profitably and retain enough farm income to invest in nonfarm activities.

Reardon (1997) noted that the returns to nonfarm diversification are highly stratified by education. In rural Africa, educated household members earned substantially more in nonfarm activities than those without formal schooling, and the gap was widening over time as formal-sector nonfarm jobs became more skills-intensive. This suggests that agricultural modernization policies need to be accompanied by investments in rural education if diversification benefits are to extend to poorer households.

Infrastructure as a Mediating Condition

Rural infrastructure, particularly roads, electricity, and telecommunications, functions as a powerful mediator of the relationship between agricultural modernization and income diversification. Well-connected rural areas are more likely to develop active nonfarm economies, because traders can reach markets, small enterprises can sell their output over a wider area, and households can access wage employment outside the village. Fan et al. (2000) estimated that public investment in rural roads in India generated significant returns in terms of both agricultural productivity growth and poverty reduction, partly through the income diversification opportunities that better connectivity creates.

The quality and coverage of rural infrastructure across the Global South remains highly uneven. In much of Sub-Saharan Africa, rural road density is among the lowest in the world, limiting both market integration and the development of the rural nonfarm economy. In contrast, parts of East and Southeast Asia that invested heavily in rural infrastructure during the 1970s and 1980s, including South Korea, Taiwan, and later Vietnam, saw agricultural modernization translate relatively quickly into broad-based rural income growth and diversification.

REGIONAL EVIDENCE

Sub-Saharan Africa

Sub-Saharan Africa presents the starkest gap between the potential of agricultural modernization and its actual outcomes. Fertilizer use in the region remains among the lowest in the world, at roughly 13 kilograms per hectare compared to a global average exceeding 100 kilograms per hectare (World Bank, 2008). Investment in agricultural research, extension services, and rural infrastructure has been inadequate for decades. The result is that productivity growth in African agriculture has been slow, uneven, and largely confined to a few well-connected farming systems.

Income diversification in rural Africa is widespread but, as Bryceson (2002) documented, often reflects distress rather than opportunity. Households engage in casual labor, petty trade, and artisanal activities not because these activities offer good returns, but because farm incomes are inadequate. The rural nonfarm

economy in much of Africa is small, poorly linked to dynamic urban sectors, and concentrated in low-productivity activities. Under these conditions, agricultural modernization programs that succeeded in reaching smallholders, such as Ethiopia's agricultural extension and fertilizer subsidy programs in the 2000s, showed some potential to shift the character of diversification from distress-driven to opportunity-driven, but the evidence on sustained impact remains limited.

South Asia

South Asia's experience with agricultural modernization and income diversification is shaped by the legacy of the Green Revolution and by the rapid economic growth of the past three decades. India's rural economy has undergone significant structural change since the 1990s, with the share of agricultural income in total rural household income declining markedly as nonfarm employment expanded. Studies using National Sample Survey data have documented that rural nonfarm income now accounts for a substantial portion of rural household budgets across most Indian states, with particularly high shares in states closer to major urban centers (Lanjouw & Murgai, 2009).

The connection between agricultural modernization and diversification in South Asia appears to be mediated strongly by rural infrastructure and education. The Green Revolution states of Punjab and Haryana, which had among the best agricultural infrastructure in India, also saw the earliest and most rapid development of rural nonfarm economies. By contrast, in the eastern states of Bihar and Odisha, where infrastructure remained weak, the productivity gains from modern agriculture were more limited and the rural nonfarm economy developed more slowly.

Southeast Asia

Southeast Asia, particularly Vietnam and Indonesia, offers some of the most encouraging evidence on the connection between agricultural modernization and rural income diversification. Vietnam's doi moi reforms of the late 1980s, which de-collectivized agriculture and gave households long-term land use rights, triggered a rapid expansion of smallholder rice production. Productivity growth created a surplus that rural households could invest in nonfarm activities. Benjamin and Brandt (2004) documented that Vietnamese rural households moved rapidly into diverse livelihood portfolios through the 1990s, combining farm income with local nonfarm enterprise, wage employment, and remittances.

Indonesia's experience illustrates both the promise and the limits of this pathway. Agricultural modernization, particularly in rice and palm oil, did contribute to broad-based rural income growth in Java and Sumatra during the New Order period. But in more remote islands and regions with weaker infrastructure, the benefits were more limited and diversification remained narrower. The lesson from Southeast Asia seems to be that agricultural modernization can support income diversification effectively when it occurs alongside sustained public investment in connectivity and human capital, and when land rights are secure enough for smallholders to invest in farm improvement.

DISCUSSION

The evidence reviewed in this paper supports several broad conclusions. First, agricultural modernization does not automatically produce income diversification. The quality and distribution of modernization, as well as the local context in which it takes place, determine whether rural households are able to translate agricultural change into diversified and resilient livelihoods. Second, household assets, particularly education and access to credit, are powerful determinants of who benefits from agricultural modernization and who is left behind. Policies that ignore this heterogeneity risk deepening inequality even as they raise average farm productivity.

Third, the rural nonfarm economy functions as a key intermediary between agricultural modernization and income diversification, but its development depends on public investment in infrastructure and an enabling policy environment for small enterprise. Agricultural-led growth strategies that focus narrowly on productivity without attending to the nonfarm economy are likely to produce more limited diversification outcomes.

Fourth, the distinction between push-driven and pull-driven diversification is crucial for welfare assessment. Policy interventions that improve farm productivity and raise agricultural incomes are more likely to support pull-driven diversification into higher-return activities. Interventions that address the immediate constraints facing poor rural households, through social protection, credit access, and skills training, can help poorer households escape the low-return diversification trap that Barrett et al. (2001) identified.

These conclusions have direct implications for how development agencies and national governments design agricultural transformation programs. The tendency to treat agricultural productivity growth as an end in itself, without attending to the downstream effects on labor markets, local economies, and household livelihood strategies, has produced programs that delivered impressive yield gains in some settings without translating those gains into lasting improvements in rural welfare. A more integrated approach, one that combines agricultural investment with complementary interventions in education, infrastructure, and institutional development, is more likely to produce the kind of broad-based rural income diversification that development goals demand.

CONCLUSION

Agricultural modernization and rural income diversification are linked processes, but the nature of that linkage depends on conditions that vary widely across the Global South. This paper has argued that modernization contributes to diversification most effectively when it reaches smallholders, when the benefits are broadly distributed, when complementary investments in rural infrastructure and education are in place, and when the rural nonfarm economy has the market access and institutional support it needs to grow.

For researchers, this means that future work needs to pay greater attention to the heterogeneity of rural households and to the local conditions that shape how agricultural change translates into livelihood outcomes. Single-minded focus on average productivity gains misses the distributional dynamics that determine whether modernization supports or undermines diversification for the most vulnerable rural households.

For policymakers, the message is that agricultural transformation programs work best when they are embedded in a broader rural development strategy. Fertilizer subsidies, improved seed varieties, and extension services are important. But they are insufficient on their own. Complementary investments in rural roads, electricity, schooling, and rural financial services are what allow households to convert agricultural productivity gains into diversified and resilient income portfolios. Without these complementary investments, modernization risks producing growth without broadly shared welfare improvement.

The countries of the Global South face enormous pressure to reduce rural poverty rapidly while adapting to the challenges posed by climate change and shifting commodity markets. Getting agricultural modernization right, which means ensuring it supports rather than undermines income diversification, is one of the most consequential policy challenges of the coming decades.

REFERENCES

Aker, J. C. (2011). Dial "A" for agriculture: A review of information and communication technologies for agricultural extension in developing countries. Agricultural Economics, 42(6), 631–647. https://doi.org/10.1111/j.1574-0862.2011.00545.x

Barrett, C. B., Reardon, T., & Webb, P. (2001). Nonfarm income diversification and household livelihood strategies in rural Africa: Concepts, dynamics, and policy implications. Food Policy, 26(4), 315–331. https://doi.org/10.1016/S0306-9192(01)00014-8

Benjamin, D., & Brandt, L. (2004). Agriculture and income distribution in rural Vietnam under economic reforms. In P. Glewwe, N. Agrawal, & D. Dollar (Eds.), Economic growth, poverty, and household welfare in Vietnam (pp. 133–186). World Bank.

Bryceson, D. F. (2002). The scramble in Africa: Reorienting rural livelihoods. World Development, 30(5), 725–739. https://doi.org/10.1016/S0305-750X(01)00005-1

Chambers, R., & Conway, G. (1992). Sustainable rural livelihoods: Practical concepts for the 21st century (IDS Discussion Paper No. 296). Institute of Development Studies.

de Janvry, A., & Sadoulet, E. (2010). Agricultural growth and poverty reduction: Additional evidence. The World Bank Research Observer, 25(1), 1–20. https://doi.org/10.1093/wbro/lkp015

Deininger, K., & Byerlee, D. (2011). Rising global interest in farmland: Can it yield sustainable and equitable benefits? World Bank. https://doi.org/10.1596/978-0-8213-8591-3

Ellis, F. (2000). Rural livelihoods and diversity in developing countries. Oxford University Press.

Evenson, R. E., & Gollin, D. (2003). Assessing the impact of the Green Revolution, 1960 to 2000. Science, 300(5620), 758–762. https://doi.org/10.1126/science.1078710

Fan, S., Hazell, P., & Thorat, S. (2000). Government spending, growth, and poverty in rural India. American Journal of Agricultural Economics, 82(4), 1038–1051. https://doi.org/10.1111/0002-9092.00101

Hayami, Y., & Ruttan, V. W. (1985). Agricultural development: An international perspective (Rev. ed.). Johns Hopkins University Press.

Lanjouw, J. O., & Lanjouw, P. (2001). The rural non-farm sector: Issues and evidence from developing countries. Agricultural Economics, 26(1), 1–23. https://doi.org/10.1016/S0169-5150(00)00104-3

Lanjouw, P., & Murgai, R. (2009). Poverty decline, agricultural wages, and nonfarm employment in rural India: 1983–2004. Agricultural Economics, 40(2), 243–263. https://doi.org/10.1111/j.1574-0862.2009.00373.x

Lewis, W. A. (1954). Economic development with unlimited supplies of labour. The Manchester School, 22(2), 139–191. https://doi.org/10.1111/j.1467-9957.1954.tb00021.x

Mellor, J. W. (1976). The new economics of growth: A strategy for India and the developing world. Cornell University Press.

Pingali, P. L. (2012). Green Revolution: Impacts, limits, and the path ahead. Proceedings of the National Academy of Sciences, 109(31), 12302–12308. https://doi.org/10.1073/pnas.0912953109

Reardon, T. (1997). Using evidence of household income diversification to inform study of the rural nonfarm labor market in Africa. World Development, 25(5), 735–747. https://doi.org/10.1016/S0305-750X(96)00137-4

Reardon, T., Barrett, C. B., Berdegué, J. A., & Swinnen, J. F. M. (2009). Agrifood industry transformation and small farmers in developing countries. World Development, 37(11), 1717–1727. https://doi.org/10.1016/j.worlddev.2008.08.023

Reardon, T., Berdegué, J., & Escobar, G. (2001). Rural nonfarm employment and incomes in Latin America: Overview and policy implications. World Development, 29(3), 395–409. https://doi.org/10.1016/S0305-750X(00)00112-1

Reardon, T., Timmer, C. P., Barrett, C. B., & Berdegué, J. (2003). The rise of supermarkets in Africa, Asia, and Latin America. American Journal of Agricultural Economics, 85(5), 1140–1146. https://doi.org/10.1111/j.0092-5853.2003.00520.x

Taylor, J. E., Arango, J., Hugo, G., Kouaouci, A., Massey, D. S., & Pellegrino, A. (1996). International migration and community development. Population Index, 62(3), 397–418.

Timmer, C. P. (1988). The agricultural transformation. In H. Chenery & T. N. Srinivasan (Eds.), Handbook of development economics (Vol. 1, pp. 275–331). Elsevier/North-Holland.

World Bank. (2008). World development report 2008: Agriculture for development. World Bank. https://doi.org/10.1596/978-0-8213-6807-7