



R&D POLICY NOTE

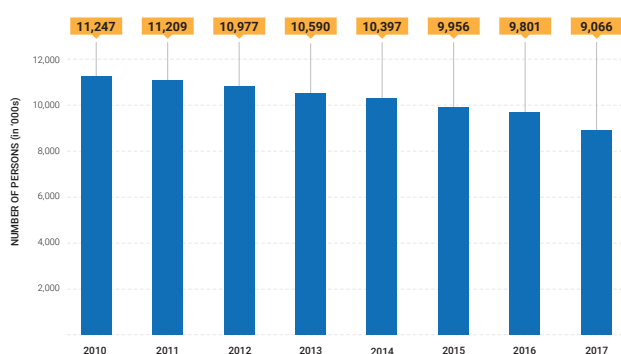
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Out-Migration in Agriculture

An Analysis of the Loss of Labor in the Agriculture Sector in the Philippines

Beginning 2012, net employment in the Philippine agriculture, hunting, and forestry (AHF) sector has been on a downtrend as more workers had moved out of the sector than workers staying in or moving into agriculture. Agricultural employment loss was observed in 15 out of the 17 regions in the country.

EMPLOYED PERSONS IN AGRICULTURE, HUNTING, AND FORESTRY (AHF), 2010-2017

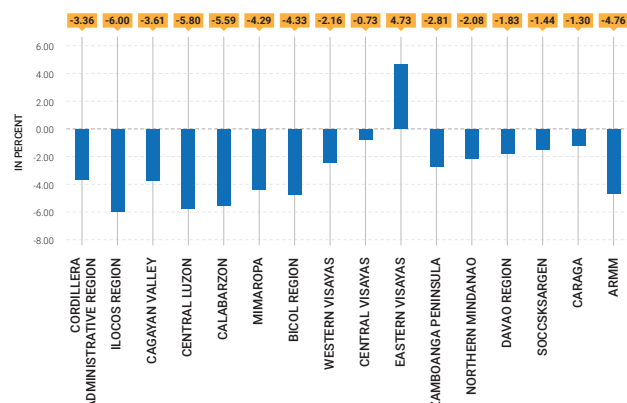


Source of basic data: Philippine Statistics Authority

The persistent employment loss was accompanied by an aging agricultural workforce with lower educational attainment. Between 2010 and 2017, the average age of agricultural workers increased to 40 years old from 38 years old while that of workers in the industry and services was steady at 36 years old and 38 years old, respectively. In terms of educational attainment, agricultural workers lagged behind industry and services, where the proportion of workers who have at least finished high school have increased. On average, agricultural workers have 6.8 years of schooling compared to 9 years and 10 years in industry and services, respectively.

Due to chronically wide sectoral productivity gaps, agricultural output growth has also lagged far behind that of the non-agriculture sector. Labor productivity level in the AHF sector (PHP68,000) remained much lower compared to industry (PHP400,000) and services (PHP219,000). This creates a strong incentive for workers to continue to seek non-agricultural employment within the country and abroad.

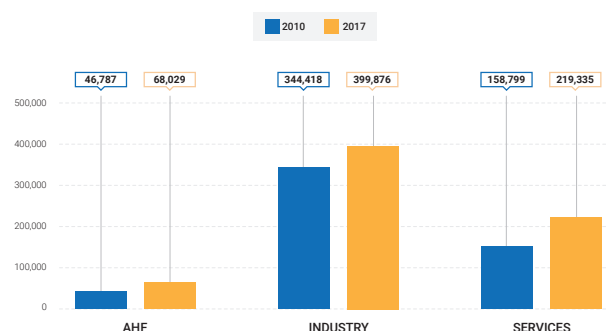
COMPOUNDED ANNUAL GROWTH RATE OF AHF EMPLOYMENT BY REGION, 2010-2017



Note: The National Capital Region was excluded because it is a non-AHF region.

Source of basic data: Philippine Statistics Authority

LABOR PRODUCTIVITY BY SECTOR, 2010 & 2017 (IN PHP)



Source of basic data: Philippine Statistics Authority



Key informant interviews with ARMM officials.

Given the implications of these developments on agricultural productivity and the country's overall labor absorptive capacity, an assessment study was undertaken to probe into the nature and causes of agricultural employment declines.

A total of 50 key informant interviews (KIIs) with government officials and local agriculture councils and 17 focus group discussions (FGDs) with farmers and out-of-agriculture migrants were conducted to determine the internal push and external pull factors¹ driving the out-migration of agricultural workers; profile the out-of-agriculture migrants and non-migrants (*i.e.*, gender, educational attainment, and age); and identify the non-agricultural activities that substitute for agricultural work.

By maximum variation sampling, eight disparately situated regions in terms of agricultural dependency and productivity, as measured by relative agricultural output and employment shares, were selected. The eight regions were represented by eight agricultural provinces namely Pangasinan, Nueva Ecija, Camarines Sur, Negros Occidental, Negros Oriental, Zamboanga del Norte, North Cotabato, and Maguindanao. Two agricultural municipalities were then selected from each of the representative provinces as FGD/KII sites.



FGD with farmers from La Castellana, Negros Occidental.



FGD with farmers from Libmanan, Camarines Sur.

¹ "Internal push factors" are conditions that are endogenous/inherent to agriculture that compel workers to transfer to other jobs or shift into non-agriculture related occupations while "external pull factors" are conditions that are exogenous/not within the bounds of agriculture sector itself that entice/attract agricultural workers to transfer to other jobs or shift into non-agriculture related occupation.

Key Results and Findings

The study confirmed the out-migration in agriculture,² especially among the young and educated workers, across study areas. Agricultural work was substituted for jobs that do not necessarily pay high wages (e.g., *habal-habal driver, salesperson, food attendant, kasambahay, and construction worker, among others*) but offer a relatively stable income stream, non-wage benefits, and better working conditions. Although said out-migration tends to be permanent, there are a few agricultural workers who return to agriculture upon the completion of their projects or during the start of the harvesting season.



FGD with farmers from Siayan, Zamboanga del Norte.

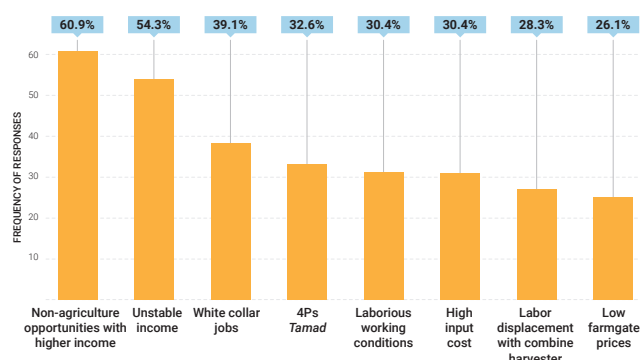
The drop in agricultural employment resulted in labor shortage and a corresponding rise in wage and non-wage benefits across sites.

FGD and KII participants confirmed rising labor cost amidst out-migration of agricultural workers. Both wage and non-wage benefits (e.g., *transportation and meals*) have increased to entice laborers to work on the farm. The brunt of rising labor cost is largely borne by smallholder farmers, especially those engaged in the production of labor-intensive crops such as sugarcane. Labor shortage has reportedly reinforced subsistence farming, especially among elderly smallholder farmers. There were several cases of farmers cultivating a smaller portion of their land due to lack of workers, while a few sold part of, if not the entire, landholding. There were also those who became laborers on the farmland they previously owned or who were employed in non-agriculture jobs. Out-migration among farm operators is much less common than among farmworkers due to the high cost of occupational shift given that their main skills and assets are highly related to agriculture. Being one's own boss and having a secure and safe food supply were cited as major reasons to remain as farm operators.

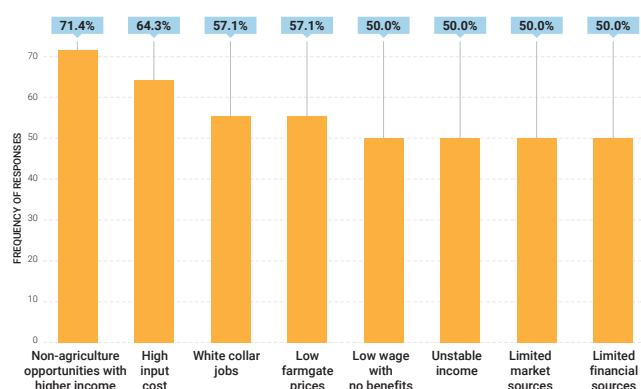
Agricultural work has been substituted for jobs in industry and services.

Most agricultural workers permanently migrated to jobs in construction, information technology-business processing management, transportation

KEY ISSUES AND CONCERNS IN AGRICULTURE BASED ON KIIs



KEY ISSUES AND CONCERNS IN AGRICULTURE BASED ON FGDs



² The transfer or movement of agricultural workers into the industry and services sectors, either temporarily or permanently.

(e.g., *habal-habal driver*), retail and food establishments (e.g., *salesperson, food attendant*), manufacturing (e.g., *food processing*), tourism-related services, and domestic work (e.g., *kasambahay*). Some temporarily migrated to non-agriculture sectors such as construction but eventually returned to agriculture at the onset of the harvesting season or once their non-agriculture projects are completed. These jobs do not require high level of educational attainment making them ready substitutes for agricultural work.

Out-of-agriculture migrants are mostly young workers with at least high school education.

Younger workers have shown no interest in farming and most of them move out of agriculture upon reaching high school. Although a larger proportion of migrants were male workers, there were numerous cases of female workers who migrated out of agriculture and were working in manufacturing and services either locally or abroad. Both male and female workers desired to move out of agriculture if there were opportunities to work in the non-agriculture sector.



KII in the Provincial Agriculture Office, Camarines Sur.

Numerous internal push factors, including unfavorable on-farm working conditions, dim agricultural labor demand prospects.

Key internal push factors were rising production input costs (particularly, labor), low farm gate prices, limited access to credit and output markets, poor management of irrigation systems, conversion of lands to non-agricultural use, and changing agro-climatic conditions. Environmental problems (e.g., *flooding, soil erosion, and reduced vitality of soil due to synthetic fertilizers*) have adversely affected farming systems and increased income risks.

Conversion to residential and commercial purposes and the parcelization of landholdings among household members contribute to the decrease of arable lands.

There were also instances of undercultivation of remaining farmlands among cash-strapped smallholder farmers. In both cases, the reduction of farming activities led to lower demand for farmworkers, which eventually pushed surplus laborers to look for non-farm jobs.

Unfavorable on-farm working conditions (e.g., *exposure to heat*) prod workers to seek non-farm employment that does not necessarily offer significantly higher wages but affords relatively stable income stream, less financial risks, and better working conditions.

On the agricultural demand side, internal factors that push labor out of agriculture were accompanied by external factors that pull labor into the non-agriculture sector, such as increased availability of non-agricultural jobs and declining job search cost. On the labor supply side, increased investment in education and skills training programs afforded by public and private transfers have induced the out-migration of agricultural workers by broadening employment options of agricultural workers outside agriculture.

Increased availability of non-agricultural jobs figured as a major pull factor in the out-migration of farmworkers.

FGD and KII participants confirmed the increase of employment opportunities outside agriculture. By raising the odds of finding non-farm employment and boosting expected non-farm income, stronger demand for labor in the non-agriculture sector makes the occupational shift less risky. Moreover, it increases the expected net return of investing in skills training programs to qualify for non-farm employment.

Declining job search cost encouraged younger workers to seek employment outside agriculture.

The reduction in job search cost can be attributed to the advances in communication technologies and government initiatives, such as the establishment of Public Employment Service Offices (PESO). Some firms have sought the assistance of PESO and the Technical Education and Skills Development Authority (TESDA) in finding and training workers to meet their labor requirements. This allowed younger workers to explore and gain access to employment opportunities within and outside their localities, as well as in other countries.

Further, the decline in job search cost has made it rewarding to shift out of agriculture even for those who may find little difference in compensation or who may find greater uncertainty in employment. Although most out-of-agriculture migrants are relatively young and educated, thus having better non-agriculture job prospects, the lower cost of job search in effect reduces the selectivity of out-migration conditioned on demographics and socioeconomic status.

Public investments in education and private transfers facilitated out-migration.

Public investments in education and skills training (e.g., programs under Republic Act No. 10931 or the Universal Access to Quality Tertiary Education Act) have broadened the employment prospects of young members in smallholder farming families. FGD and KII participants noted a strong preference of the elderly household members to invest available funds in the education of the younger family members to enhance household income prospects. Instead of farm work, younger family members were encouraged to finish school or move to the cities to acquire higher education and subsequently find better remunerative jobs in industry and services. Likewise, private transfers (e.g., overseas remittances from family and relatives) also enabled younger family members to finish schooling and hence, acquire better-paying jobs in the non-agriculture sector.

The government's Conditional Cash Transfer (CCT) Program inadvertently caused out-migration in agriculture.

Informants claim that the CCT Program has caused permanent and/or temporary migration out of agriculture. The timing of the payout and the amount of cash transfers relative to the amount of income from agriculture work mattered. Many farm operators complained of labor shortage when the release of CCT payout coincided with the planting and harvesting seasons. The labor substitution persists for some time if the CCT payout is in bulk, which could be higher than the income they would get from farming. In some instances, the transfers were invested in non-farm activities (e.g., *habal-habal* or *motorcycle taxi*) to supplement and sometimes substitute for farm income.

Sociocultural bias against agriculture as a profession contributed to the declining interest among the youth.

The limited engagement of the youth in farming reflects their strong preference and that of their parents towards "white collar" or office jobs where working conditions are favorable (i.e., *workplace equipped with communication facilities, well-ventilated and/or air-conditioned, and reduced exposure to sunlight*) and/or income risks are relatively low. The social stigma attached to farming being a poor man's job also makes farming an unattractive occupational choice even to those who have finished agriculture-related courses.

Labor shortage induced some farm operators to mechanize farming operations and shift to less labor-intensive crops.

FGD participants confirmed broader access to mechanization services through government programs and projects. However, the demand for mechanization remains largely unmet due to the continuing labor shortage especially during peak planting and harvesting periods. Likewise, demand for the services of harvesting machinery (e.g., *combine harvesters for paddy*) increases when incoming typhoons or impending pest infestation threaten to destroy crops that are ready to be harvested.



KII in the Provincial Agriculture Office, Zamboanga del Norte.

Conclusion and Policy Implications

Based on the results of the study, the rise in agricultural wages may have benefited the remaining workers but this improvement in farm wages may not be sustained unless constraints in farm productivity are addressed. The typical jobs taken by out-of-agriculture migrants are reported to be at least as rewarding as their previous agricultural jobs in terms of income stability and/or working conditions. As such, the substitution of agricultural work with these types of non-agricultural jobs could generate greater overall welfare gains if it succeeds in inducing farm operators to invest in farm productivity-enhancing measures.

However, given the informational and institutional problems in agricultural markets, the challenge of boosting farm productivity requires smart policy responses. Without these, most farming systems will remain underdeveloped due to (a) low agricultural investment and prevalence of subsistence farming as a result of rising cost of labor and other inputs and limited market access; (b) dwindling agricultural land resource base; and (c) unfavorable agro-climatic conditions. Thus, the importance of institutional arrangements (*e.g., land consolidation schemes, cooperative farming, and machinery pooling systems*) that afford economies of scale and synergies to optimize the use of existing agricultural resources and to, ultimately, enhance and democratize productivity gains cannot be further emphasized.

For a holistic and coherent policy design and implementation, an inter-agency committee for agro-industrial development may be convened – either by establishing a new or tapping an existing committee – to address coordination failures between and among government agencies. The said body may hold regular meetings involving local and national government agencies to formulate region-specific and national strategies for effective design and implementation of cross-cutting policies and programs that affect agricultural development.

In the short-term, the following measures may be pursued: (a) address coordination failures between and among government agencies particularly those that implement cash transfer schemes; (b) enhance agricultural market information systems to complement other marketing strategies; (c) improve farm labor market information and agricultural skills training programs to maximize the use of remaining full-time and part-time workers; and (d) build resiliency of the agriculture sector through better technologies, in addition to crop insurance.

In the medium- to long-term, the following measures may be explored: (a) develop high-value by-products of traditional crops such as cereals; (b) increase investment in storage and logistics; (c) formulate legal and institutional framework that is more responsive to evolving conditions; (d) engage the youth in farming by incorporating agriculture into the elementary and high school curriculum and promoting agribusiness courses and training particularly agro-tourism development under collaborative schemes of the academe, the government, and business sector; and (e) develop investment instruments, including diaspora investments for agriculture.

The formulation of institutional and policy reforms would have to be guided by rigorous theoretical, empirical, and policy studies that evaluate the relative importance of various policy instruments to better address the issues and challenges in the agriculture sector. The results of the FGDs and KIs were very instructive in understanding the causes and nature of the persistent decline of agricultural employment. To lay the groundwork for similar studies, a theoretical model to account for the changes in agricultural employment was developed and a list of variables for empirical investigation was determined.

Key variables for empirical model explaining changes in employment by region

The following factors exert significant influence on labor supply decisions of farmworkers: (a) endowment variables (e.g., *changes in agricultural land area*); (b) adoption of farm technologies; (c) factors affecting market access (e.g., farm-to-market roads, market outlets, storage facilities); (d) factors affecting search cost (e.g., *availability of job-related information*; *skills*

training programs, *communication and transportation networks*); (e) unearned income and transfers; and (f) farm worker and operator characteristics and their interaction with other explanatory variables. These factors are accounted for in the proposed two separate two-sector time-allocation discrete choice models for farm workers and farm laborers.

Summary of Policy Recommendations

Policy Recommendations	Target Beneficiaries	Responsible Entities
 <p>Address coordination failures between and among government agencies.</p>	Farmers	National Economic and Development Authority (NEDA), Department of Agriculture (DA) and its attached agencies, Department of Trade and Industry (DTI) and its attached agencies, local government units (LGUs), Department of Social Welfare and Development
 <p>Enhance agricultural market information systems to complement other marketing strategies.</p>	Farmers	DA, DTI, LGUs, agricultural cooperatives
 <p>Improve farm labor market information and agricultural skill training programs.</p>	<ul style="list-style-type: none"> • Farm operators and workers • Farm labor contractors 	Department of Labor and Employment, Public Employment Service Office, TESDA, DA
 <p>Build resiliency of the agriculture sector through better technologies.</p>	Farmers	Department of Science and Technology (DOST), DA-Agricultural Training Institute (ATI), LGUs
 <p>Develop high-value by-products of traditional crops such as cereals.</p>	Farmers, especially cereal producers	DA, DTI, DOST
 <p>Increase investment in storage and logistics.</p>	Farmers	DA, DTI, agricultural cooperatives
 <p>Formulate legal and institutional land management framework that is more responsive to evolving conditions.</p>	<ul style="list-style-type: none"> • Landowners • Landless and landed farmers 	Department of Agrarian Reform, DA, LGUs, agricultural cooperatives
 <p>Develop investment instruments, including diaspora investment for agriculture.</p>	<ul style="list-style-type: none"> • Overseas Filipino workers • Young entrepreneurs 	Government financial institutions, agricultural cooperatives
 <p>Engage the youth in farming.</p> <ul style="list-style-type: none"> - Incorporate agriculture into the elementary and high school curriculum. - Promote agri-business courses and training particularly agro-tourism development under collaborative schemes of the academe, the government, and business sector. 	Students at all levels from elementary to tertiary	Department of Education, Commission on Higher Education, TESDA, DA-ATI

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