

# PHILIPPINES MINDANAO JOBS REPORT

## A STRATEGY OF MINDANAO REGIONAL DEVELOPMENT





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June 2017

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# Acronyms

<b>4Ps</b>	Pantawid Pamilyang Pilipino Program (Bridging Program for the Filipino Family)	<b>DSWD</b>	Department of Social Welfare and Development
<b>AGFP</b>	Agricultural Guarantee Fund Pool	<b>DTI</b>	Department of Trade and Industry
<b>ARMM</b>	Autonomous Region in Muslim Mindanao	<b>ECs</b>	Electricity Cooperatives
<b>ASEAN</b>	Association of South East Asian Nations	<b>EDC</b>	Export Development Council
<b>AVA</b>	Agriculture Venture Agreement	<b>EO</b>	Executive Order
<b>BAR</b>	Bureau of Agricultural Research	<b>ERC</b>	Energy Regulatory Commission
<b>BIMP-EAGA</b>	Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area	<b>FIES</b>	Family Income and Expenditure Survey
<b>BEST</b>	BIMP-EAGA Submarine Terrestrial Cable Project	<b>FMRs</b>	Farm-to-Market Roads
<b>BFAD</b>	Bureau of Food and Drugs	<b>IBPAP</b>	Information Technology and Business Process Association of the Philippines
<b>BIR</b>	Bureau of Internal Revenue	<b>IBRD</b>	International Bank for Reconstruction and Development
<b>BLGF</b>	Bureau of Local Government Finance	<b>ICC</b>	Importer's Customs Code, BIR
<b>BOC</b>	Bureau of Customs	<b>IDPs</b>	Internally Displaced Persons
<b>BPI</b>	Bureau of Plant Industry	<b>IP</b>	Internet Protocol
<b>BSP</b>	<i>Bangko Sentral ng Pilipinas</i> , the Central Bank	<b>ISP</b>	Internet Service Provider
<b>CCN</b>	BOC Custom Client Number	<b>IT</b>	Information Technology
<b>CDD</b>	Community-Driven Development	<b>IT-BPO</b>	Information Technology and Business Process Outsourcing
<b>CDO</b>	Cagayan De Oro	<b>LGC</b>	Local Government Code
<b>CNN</b>	Communist Party of the Philippines-New People's Army-National Democratic Front	<b>LGU</b>	Local Government Unit
<b>CPA</b>	Cebu Port Authority	<b>MARINA</b>	Maritime Industry Authority
<b>CPC</b>	Certificate of Public Convenience	<b>MDTF</b>	Multi-Donor Trust Funds
<b>DAR</b>	Department of Agricultural Reform	<b>MINDA</b>	Mindanao Development Authority
<b>DENR</b>	Department of Environment and Natural Resources	<b>MICT</b>	Mindanao International Container Terminal
<b>DICT</b>	Department of Information and Communications Technology	<b>MILF</b>	Moro Islamic Liberation Front
<b>DILG</b>	Department of Interior and Local Government	<b>MKFI</b>	Magbassa Kita Foundation, Inc.
<b>DoA</b>	Department of Agriculture	<b>MOAs</b>	Memoranda of Agreement
<b>DoE</b>	Department of Energy	<b>MRDP</b>	Mindanao Rural Development Project
<b>DoLE</b>	Department of Labor and Employment	<b>NCC</b>	National Competitiveness Council
<b>DoST</b>	Department of Science and Technology	<b>NDHS</b>	National Demographic and Health Survey
<b>DPs</b>	Development Partners	<b>NFA</b>	National Food Authority
		<b>NGCP</b>	National Grid Corporation of the Philippines
		<b>NGO</b>	Nongovernmental Organization
		<b>NIA</b>	National Irrigation Administration

<b>NPA</b>	New People's Army
<b>NSFI</b>	National Strategy for Financial Inclusion
<b>NSW</b>	National Single Window
<b>NTC</b>	National Telecommunications Commission
<b>O&amp;M</b>	Operations and Maintenance
<b>OFW</b>	Overseas Filipino Worker
<b>PBR</b>	Philippine Business Registry
<b>PCC</b>	Philippine Competition Commission
<b>PEZA</b>	Philippine Economic Zone Authority
<b>PhilExport</b>	Philippine Exporters Confederation
<b>PNTR</b>	Philippine National Trade Repository
<b>PPA</b>	Philippine Ports Authority
<b>PRDP</b>	Philippine Rural Development Program
<b>PSA</b>	Philippine Statistics Authority
<b>PTEs</b>	Public Telecommunications Entities
<b>R&amp;D</b>	Research and Development
<b>RAS</b>	Reimbursable Advisory Services
<b>RoDs</b>	Registries of Deeds

<b>RS4LGU</b>	Regulatory Simplification for LGUs
<b>RTT</b>	Round-Trip Time
<b>SEC</b>	Securities and Exchange Commission
<b>SMEs</b>	Small and Medium-sized Enterprises
<b>SMV</b>	Schedule of Market Value
<b>SPS</b>	Sanitary and Phytosanitary Standards
<b>SSS</b>	Social Security System
<b>TESDA</b>	Technical Education and Skills Development Authority
<b>TFP</b>	Total Factor Productivity
<b>TVET</b>	Technical and Vocational Education and Training
<b>VAT</b>	Value-Added Tax
<b>VoIP</b>	Voice Over Internet Protocol
<b>WDR</b>	World Development Report
<b>WITS</b>	World Integrated Trade Solution database
<b>WTO</b>	World Trade Organization



# Executive Summary

Economic progress in the Philippines will depend on the success of development in Mindanao. Because Mindanao is the major center of conflict in the country, peace there means peace for the Philippines. Because Mindanao holds about a quarter of the country's population but about a third of its poor, significantly reducing national poverty hinges on reducing poverty in Mindanao. Because Mindanao is the Philippines' main source of agricultural products, enhancing production there could reduce food and input prices, improve welfare, and make Philippine products more competitive. Unless there is development in Mindanao, it is hard to see how the Philippines can achieve sustained and inclusive growth.

The central policy challenge for Mindanao, like the rest of the Philippines, is how to accelerate inclusive growth—the type that creates more and better jobs and reduces poverty. But that is more difficult in Mindanao than in Luzon or the Visayas<sup>1</sup> because armed conflict there is of long standing. Progress has been made in making growth more inclusive, but Mindanao still trails the rest of the Philippines in shared prosperity. Its per capita GDP, about US\$1,800, is only about half the national level. Within the island, the Autonomous Region in Muslim Mindanao (ARMM) has the lowest per capita GDP, about US\$700—just 8 percent of per capita GDP in the National Capital Region. There has long been a lack of political will to tackle important reforms that would combat severe underinvestment and institutional weaknesses in Mindanao.

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**Agriculture is not very productive except for a few export crops, manufacturing is constrained by inadequate infrastructure, and the low-productivity, low-skill services sector has become the catch basin for excess agriculture workers who cannot find jobs in cities**

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Instead of rising agricultural productivity paving the way for a vibrant manufacturing and services sector linked to the agriculture value chain, the converse has taken place in Mindanao. Agriculture is not very productive except for a few export crops, manufacturing is constrained by inadequate infrastructure, and the low-productivity, low-skill services sector has become the catch basin for excess agriculture workers who cannot find jobs in cities. Lack of competition in key sectors, insecure property rights, complex regulations, and severe underinvestment in infrastructure, education, and health—all exacerbated by the deficient institutions—have led to this anomalous growth pattern, which has left the majority of the Mindanawons without good jobs and has led to the emigration of many talented people. In addition, conflict arising from land disputes deters investment and job creation.

Mindanao is a land of real potential that has a rich history. The southern island group of Mindanao, one of the three major subdivisions of the Philippines, consists of main-island Mindanao, several small islands off the northern and southern coast, and the Sulu Archipelago in the west, which stretches to Borneo. Mindanao covers two-fifths of the country's total land area, a third of territorial waters, and a fifth of the total population. In 2010, its population was 22 million, of whom 4.4 million (20 percent) were Muslims and 2.9 million (13 percent)

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<sup>1</sup> Luzon and the Visayas are the Philippines' two other major island groups, centering respectively on the cities of Manila and Cebu.



indigenous people. In 2014, its nominal GDP was PHP1.9 trillion, 15 percent of Philippine GDP. Mindanao is blessed with a good climate for agriculture. Most of its provinces lie below the typhoon belt. It has fertile soil and a wide range of elevations suitable for a variety of crops; large deposits of minerals, such as gold, copper, and nickel; extensive forests (although of secondary growth); and vast marine wealth. Historically, Mindanao was the first area of the Philippines to develop. The Sultanates of Sulu and of Maguindanao had fairly well-developed governance systems as early as the 15<sup>th</sup> century, and close trade links with China and insular Southeast Asia.

Despite its rich endowments, Mindanao's growth and development outcomes are below potential. In the 1960-70s, in terms of GDP per capita it was on a par with Luzon and three times richer than the Visayas. It has since trailed significantly in the pace and quality of economic growth. Perhaps more striking is the comparison to neighboring countries with a similar comparative advantage in agriculture. Although until 1980 Mindanao was as rich as Thailand and richer than Indonesia and Vietnam, today their fortunes are reversed: today Thailand's GDP per capita is triple that of Mindanao, and Indonesia's is double. Minimal economic dynamism and high population growth, exacerbated by armed conflict, have resulted in few jobs being created, widespread poverty, and net emigration. Even though Mindanao's comparative advantage lies in agriculture, many farmers and fishermen still live in or are vulnerable to poverty. Human development indicators are bad in Mindanao and even worse in the ARMM.<sup>2</sup>

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Minimal economic dynamism and high population growth, exacerbated by armed conflict, have resulted in few jobs being created, widespread poverty, and net emigration

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In Mindanao, the weakness of the economy is the result of decades of not only armed conflict but also a narrow growth strategy. Economic growth is necessary but not sufficient for good job creation and poverty reduction. What also matters is how broad-based and pro-poor the growth is. Unlike Luzon and the Visayas, which had a more diversified, innovative, and labor-intensive economic structure, Mindanao's economy was driven by plantation crops, forestry, mining, and heavy manufacturing to support an import substitution regime.<sup>3</sup> Because these sectors were capital-intensive, involved little local processing, and reinvested little profit locally, they had low local multiplier effects. While they contributed to Mindanao's high GDP per capita in earlier years, they created few jobs and hence did little to reduce poverty. In addition, trade and industrial protection policies taxed agriculture heavily.<sup>4</sup> Thus, Mindanao's growth path failed to build on the main comparative advantage: agriculture based on smallholders. Ultimately, this narrow growth model could not be sustained and contributed to conflict as wealth and power were concentrated in the hands of a small elite group. This drove economic and social injustice, the core cause of violent conflict in Mindanao (World Bank 2005).

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<sup>2</sup> ARMM is comprised of the following provinces: Basilan (except Isabela City), Lanao del Sur, Maguindanao (except Cotabato City), Sulu, and Tawi-Tawi.

<sup>3</sup> The policy of import substitution to support local manufacturing lasted into the 1980s. It kept the exchange rate artificially overvalued, which together with high effective protection and tax rates on agriculture, significantly eroded Mindanao's agricultural competitiveness.

<sup>4</sup> Free trade, a major source of income in Mindanao and the Sulu archipelago for centuries, was declared illegal when Philippine customs and tariff laws were passed. This drastically raised the cost of living because rice and other commodities had to be sourced from within the country rather than from nearby Sabah, where food and oil are much cheaper. Maritime cabotage restrictions and domestic shipping oligopolies, along with a lack of investment in ports, have constrained trade and the ability of Mindanao to export its agriculture produce and capitalize on its comparative advantage.



Today, the jobs challenge facing Mindanao is daunting. In this report, jobs refer to what people do to make a living, whether that is wage work or self-employment, formal or informal. Good jobs — jobs that raise real income and lift people out of poverty — are needed for more than two million Mindanawons who are today either unemployed<sup>5</sup> or underemployed.<sup>6</sup> In addition, large cohorts of youth will enter the labor force in the next few years<sup>7</sup> and better jobs are needed for the many Mindanawons who are currently employed informally and who account for more than half of total employment in Mindanao.

The report proposes a strategy and specific interventions for Mindanao that will support sustainable peace and development, including job creation. Resolving conflict in Mindanao rests on addressing the causes of conflict and providing jobs and economic opportunities as alternatives to violence. The proposed framework builds on the *World Development Report* (WDR) on conflict, security and development (World Bank 2011b). Breaking the cycle of insecurity and reducing the risk of its recurrence requires a virtuous spiral of (1) restoring confidence in collective action between groups who have been in conflict, and (2) transforming institutions to provide a sustained level of security, justice, and jobs. “Restoring confidence” requires a deliberate effort by both public and private actors to build sufficiently inclusive partnerships from the national to the community level to launch confidence-building and institutional transformation and secure early gains. “Transforming institutions” requires giving priority to early reforms of the institutions responsible for citizen security, justice, and jobs. Building legitimate institutions can take a generation or more. Along the way short-term milestones are necessary to maintain popular support.

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Accordingly, inclusive job creation can lay the foundations for peace by providing equitable access to economic opportunity for all, including people in remote, conflict-affected communities

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However, job creation will not be enough. Where the cause of conflict is not economic, such as the struggle for identity or self-rule, economic measures will not be enough to resolve the conflict. In Mindanao, peace and development will hinge on the success of a political solution that addresses the causes of violence — injustice, weak governance, land dispossession, discrimination, and sociocultural marginalization.<sup>8</sup> However, there are economic dimensions to conflict: some people who feel left out of the economy turn to armed groups for both livelihood and social status. Accordingly, inclusive job creation can lay the foundations for peace by providing equitable access to economic opportunity for all, including people in remote, conflict-affected communities.

## Unlocking Mindanao’s Potential

This report proposes a comprehensive strategy for unlocking Mindanao’s potential. Driving down poverty and delivering on the government’s Strategic Framework for Mindanao Peace and Development will demand a new approach to engagement in Mindanao. To support this, the World Bank is working with the Philippines

<sup>5</sup> Unemployment is defined as workers who are 15 years old and over and are reported as (1) without work and currently available for work and seeking work, or (2) without work and currently available for work but not seeking work for any of the following reasons: (a) tired/believe no work is available, (b) awaiting results of a job application, (c) temporarily ill/disabled, (d) bad weather, and (e) waiting for rehire/job recall.

<sup>6</sup> Underemployment is defined as all employed persons looking for more work.

<sup>7</sup> The labor force is defined as persons 15 years old and over.

<sup>8</sup> This report focuses primarily on the economic dimensions of peace and development in Mindanao and does not lay out a roadmap for peace with Moro groups and the Communist Party of the Philippines-New People’s Army-National Democratic Front (CNN).

government and on-site stakeholders to draw up a strategy for regional development in Mindanao. The three main components are: (1) raise agricultural productivity and improve farm-to-market connectivity; (2) boost human development; and (3) address drivers of conflict and fragility and build up institutions in ARMM and conflict-affected areas.

The strategy will build on Mindanao's comparative advantage and tighten its links with the rest of South East Asia. It identifies three priorities for interventions to unlock agricultural potential: (1) raise farm productivity through agrospatial approaches and productive alliances; (2) build up logistics services, improve roads from fields to markets; and (3) develop key ports and modernize customs procedures.

Connectivity bottlenecks are compounded by limited human capital, especially skills deficits. Over 80 percent of Mindanao's farmers and fishermen are poor or near-poor and lack scale *and* skills to compete. To maximize productivity in Mindanao, a number of interventions are planning to address shortfalls in the inter-locking areas of basic education and skills and job creation. The plan gives special attention to youth in conflict-affected areas.

Security, justice, and economic stresses are linked. To ensure the success of violence prevention and recovery, a specialized suite of interventions is planned for fragile environments, combining elements of security, justice, institution-building, and economic transformation.

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Engagement strategies will be adapted to areas with a clear potential for further growth and private investment; other strategies and interventions will respond to the particular needs of conflict-affected and more poverty stricken areas and support the peace agreements and peace-promoting socioeconomic development

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Certain guiding principles recognize the need in both designing and carrying out the strategy to differentiate delivery modalities and ensure conflict sensitivity. Engagement strategies will be adapted to areas with a clear potential for further growth and private investment; other strategies and interventions will respond to the particular needs of conflict-affected and more poverty stricken areas and support the peace agreements and peace-promoting socioeconomic development. Activities will need to be adapted to the local context and different types of institutions, such as national and local government agencies, the ARMM government, potentially the Bangsamoro Transitional Authority and future Bangsamoro government, and other institutions. From the design phase on, the interventions proposed will be based on analysis of specific drivers of conflict and fragility to ensure that (1) activities address these drivers, and (2) proposed interventions will not have counterproductive impacts. A minimum level of security is essential for making possible many interventions. The proposed strategy and its interventions could have wide-ranging benefits, for, e.g., the whole nation due to customs reform, for subsistence farmers and day laborers in Mindanao accessing farm-to-market roads (FMRs) in the poorest areas, and for Mindanao's youth seeking training for employment. The strategy also reaches across the divide between non-conflict and conflict-affected areas and will support peace-promoting catch-up socioeconomic interventions as well as longer-term economic opportunities that would help reduce the risk of conflict in the future. The World Bank engagement in Mindanao will be based on this strategy.

## Policy Recommendations: How to Address the Job Challenge

A special focus of the strategy for regional development in Mindanao is to provide specific and practical recommendations on how to address Mindanao's jobs challenge. The report strives to complement good analysis with policy recommendations that respond to the "how to reform" question. Key policy recommendations are made in separate sections of the report on (1) increasing agricultural productivity by improving extension and irrigation services, along with price reforms to realize Mindanao's agriculture potential; (2) building up logistics and transport connectivity by improving road networks and the efficiency of shipping services to reduce trade costs; (3) improving the supply of reliable power and the speed, affordability, and quality of information and communications technology (ICT) services by fostering competition; and (iv) supporting private investment by addressing the growing skills gap, the high regulatory burden for businesses, and by improving financial inclusion and the governance of land. A dedicated section considers economic policies that can support the resolution of Mindanao's longstanding violent conflicts.

## The Need for Broad-based Progress throughout the Island Group

Growth and poverty reduction in Mindanao as a whole will require making agriculture more productive, particularly the smallholders. Agriculture, forestry, and fisheries employ almost half of all workers, yet 78 percent of individuals with incomes below the poverty line live in rural areas. Rural areas are meanwhile dependent on cities for food processing (e.g., canning, bottling, and packing), marketing, and logistics support to bring produce to the rest of the country and to the world. In 2012, about 60 percent of Mindanao's economy and employment was driven by agriculture value chains, of which about half was contributed by urban areas. By connecting agrarian and conflict-affected Mindanao to national and global value chains, cities serve as conduits of rural development.

Recently, as the formal services sector has evolved the major Mindanao cities have become a more independent source of growth, for example in information technology and business processing operations (IT-BPO). IT-BPO services have been increasing in Davao and Cagayan de Oro (CDO) by about 20 percent annually. Remittances from overseas Filipino workers (OFWs) are also drivers of service sector growth. For instance, over half of new condominium units are sold to OFWs intending to retire in Mindanao.

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Policy should operate to better connect rural and urban spaces rather than taking an oversimplified approach to equalize public expenditures across areas. Policies should therefore focus on inclusive development in rural and remote areas (e.g., investing in basic education and healthcare, and getting the basics of agriculture right for smallholders) and economic integration (e.g., investing in power, logistics, and Internet, and simplifying regulations). This could make urban spaces demand centers for rural products. In this way, the rest of Mindanao, especially conflict-affected areas, can benefit from the growth of Manila, Cebu, and Mindanao's leading cities.

## Policies to Make Agriculture More Productive

The majority of Mindanao's farmers, the smallholders, can only work with large farms and connect to markets and agribusinesses if their crops are more productive. An effective rural development agenda needs to address primarily the basic constraints of smallholders. First, the resolution of land disputes while respecting traditional land allocation practices, and measures to secure land titles in an equitable manner, would encourage economic efficiency. This is fundamental for development and job creation in Mindanao. Second, investing in education and health of farming households would allow for more gainful employment and higher household income. Together, human capital development and more secure property rights could be the catalyst for investment that helps raise the current low returns to labor and land.

Coordinated efforts by government, educational institutions, and the private sector could strengthen extension services. Extension services could be better administered if services now provided by several national agencies were consolidated. Increased funding could facilitate broader provision of services and support the efforts of Department of Agriculture (DoA) regional offices to support local government services and coordinate national and local services. The number of educational institutions with a mandate to provide services could be increased, while reorienting incentives for academics to favor extension, providing more resources, and offering training in practical agricultural skills. Civil service organizations, successful farmers' organizations, and private firms also could play a more effective role in extension services, perhaps supported by government efforts to improve their coordination. Finally, agricultural research could have more impact if the emphasis on rice were reduced and resources shifted from specific commodities programs to research that targets gaps in promising value chains, and adaptation to climate change.

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Efforts to decentralize responsibility for operations and maintenance to irrigators associations should continue, with encouragement for increased participation in community procurement, to improve the management and sustainability of investments. Irrigation has not been used much to raise agricultural production because of low investment and inadequate maintenance. While more government investment is expanding irrigation in Mindanao, what is urgently needed is better planning and more incentives for efficient water use. An inventory of water resources would help ensure that investment in irrigation takes into account their sustainability. Irrigation service fees are important to finance both the operation and maintenance of irrigation systems and the organizational development activities of irrigators associations.

While distortions in agricultural prices have been reduced by replacing across-the-board subsidies with targeted programs and opening rice imports to private sector participation, some laws still make it hard for farmers to diversify into more profitable crops. Lowering barriers to the import of food products, such as removing the import quota for rice and reducing tariffs on other food products, would improve the real incomes of both urban consumers and the many poor farmers who are net buyers of food. It would also reduce widespread illegal importation of rice.

## Improving Connectivity by Expanding and Upgrading Roads

Better rural roads would reduce transportation costs and product losses for poor farmers and could make a major contribution to reducing poverty. Local government units should be given incentives for planning rural roads and allocating road funds so as to promote productivity, equity, and the potential for creating jobs into consideration (e.g., more resources could be devoted to unconnected *sitios*<sup>9</sup>). A comprehensive rural roads plan that such considerations into account, establishing a central inventory of road projects, and closer coordination of the various agencies involved in road improvements could make funding allocation more strategic. In conflict-affected areas, rural road investments should be targeted to remote villages. Connecting them opens up market access and extends the footprint of the state, which would address grievances that sustain the insurgency. Furthermore, devoting resources to alternatives to road investments in the most remote areas, by investing in horses, cable lines, and pathway clearing, could suffice and improve transportation.

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One option is to channel all trade with other Philippine island groups and the rest of the world through the Mindanao International Container Terminal (MICT) near Cagayan de Oro

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More centralized planning of urban road projects would better connect cities with each other and with the countryside. While the Philippines is devoting more resources devoted to the construction of national roads, congestion (particularly of roads leading to ports); the still-limited network (paved-road densities are much higher in Luzon than in Mindanao), and inadequate maintenance impair safety and slow the shipment of goods. In the short term, the emphasis should be on closer coordination of road projects; ensuring that all projects are geotagged and mapped; constructing bypass roads to reduce congestion around the ports in Cagayan de Oro, Davao, and Zamboanga; and moving forward on projects already underway and in the pipeline. As resources become available, attention should turn to upgrading national roads to concrete and local roads to at least asphalt, expanding high-volume road segments, and making roads in mountainous areas safer.

## Reducing Trade Costs

Shipping is expensive in the Philippines. The average port-to-port cost per nautical mile in the Philippines is almost double that of Indonesia, and in Mindanao costs are likely to be even higher, given the small scale of shipments, distance from trading partners, and the inability of many ports to accommodate modern vessels. The costs are then pushed up further by regulatory barriers to entry into provision of shipping services; the complexities of obtaining approvals (several steps require travel to Manila or a regional center outside of Mindanao); the Philippine Ports Authority's incentive to approve increases in cargo rates; requirements that dry docking and repair be undertaken in the Philippines rather than in less expensive foreign ports, prohibitions on foreign ships servicing domestic routes, and a VAT tax regime that limits chartering.

Costs could be slashed by consolidating port operations to increase scale. One option is to channel all trade with other Philippine island groups and the rest of the world through the Mindanao International Container Terminal (MICT) near Cagayan de Oro. Another is to ship all domestic cargo through the MICT and foreign cargo through Davao. Another way to reducing shipping costs is to promote private sector competition to provide services within ports. Eliminating the need for domestic vessels to obtain a license to ship goods to

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<sup>9</sup> A *sitio* is a small, usually remote part of a rural *barangay*.

foreign ports would facilitate partnerships between domestic and foreign companies, which would open up access to technology and a larger market, strengthen safety standards, and enable operators to choose the mix of domestic and export cargo that maximizes cargo load. Laws and regulations could also be revised to ensure that VAT is not charged on the full value of ships chartered for temporary periods, eliminate the requirement to dry dock and repair domestic ships exclusively in the Philippines, and shift port tariffs from a percentage of cargo-handling fees (which in part determines revenues to the PPA) to a fixed annual charge to reduce the PPA incentive to push up cargo fees. Allowing foreign ships to service domestic ports could significantly reduce shipping costs. While removing all cabotage<sup>10</sup> restrictions would require removing the Constitutional limitation on foreign ownership of domestic shipping, restrictions could be eased through executive action (e.g., simplifying procedures for and increasing issuance of special permits to ancillary and adjunct cargo on high-impact routes).

Reducing the regulatory burdens on shipping companies also could reduce costs. That can be done by fully implementing the National Single Window (NSW) automated system (especially for small traders on Mindanao), using risk management assessments to allocate resources devoted to enforcement, making more information available on the processes and fees required of private firms, eliminating redundant regulatory requirements, increasing the use of on-line systems to grant approvals, and devolving more responsibility for approvals to regional and port offices.

Philippine agricultural exports are often rejected in foreign countries for failure to meet sanitary and phytosanitary standards (SPS). Oversight, equipment, and training in many DoA laboratories is substandard, policies for accrediting private laboratories are inconsistent, and traders complain of delays in securing export permits. To improve the reliability and reputation of agricultural exports, more resources must be devoted to testing, increasing laboratory capacity, and updating technology, and to improve compliance for major export products and target high-risk traders.

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Low prices for hydroelectric power from the grid have discouraged large-scale private investment in power generation, and the unreliability of power sources has led many firms to invest in relatively small-scale, and thus high cost, oil-fired power generation

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## The Importance of Sustainable Power Resources

Frequent and lengthy power outages in Mindanao impose huge costs on businesses by interrupting production and damaging equipment. The power outages are also a major source of discontent because they fuel Mindanawons feelings of neglect. Low prices for hydroelectric power from the grid have discouraged large-scale private investment in power generation, and the unreliability of power sources has led many firms to invest in relatively small-scale, and thus high cost, oil-fired power generation. Inadequate maintenance, underinvestment in alternative power sources, rising demand for power, and competing water uses have drastically reduced excess capacity and led to a severe power crisis during the 2011 El Niño. The destruction of transmission towers by armed forces, unclear property rights that affect right-of-way access, and poor governance practices in electricity cooperatives have further reduced power availability and raised costs.

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<sup>10</sup> Cabotage here refers to the shipping rights within the country.



The government and the private sector supply have responded strongly to the energy crisis. Work on new power capacity and in improving transmission networks is underway, efforts are being made to improve security, the process for approving new power plants is being streamlined, and governance reforms have been proposed for electricity cooperatives. The private sector is building new coal-fired plants, which should assure adequate power supply until early in the next decade and is already driving down prices.

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There is also an urgent need to provide off-grid solutions, such as solar home systems, for remote or conflict-affected areas that are likely to be left behind despite the recent progress on production.

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Nevertheless, planning should begin now to cope with the expected increases in demand and to make the power sector more environmentally sustainable. This might involve restructuring contracts to raise power prices to levels that reflect their economic value and diversifying power sources (e.g., to natural gas and solar) to limit demands on scarce water resources and reduce reliance on coal- and oil-fired plants. These plants are increasing urban pollution and, unless policies change, will make it difficult for Mindanao to help the country meet its Paris Agreement commitments to reduce carbon emissions. It is critical that Mindanao avoid being locked into large, environmentally-destructive carbon power generation that could constrain development of alternative energy sources for the foreseeable future. There is also an urgent need to provide off-grid solutions, such as solar home systems, for remote or conflict-affected areas that are likely to be left behind despite the recent progress on production.

## Changes to Spur Competition

Internet speed in Mindanao is much slower, and prices much higher, than in the rest of the country, a major limitation on Mindanao's IT and business process outsourcing industry. Poor Internet services are largely the result of a lack of competition; the market for both fixed and mobile broadband services is almost entirely controlled by two vertically integrated telecoms firms. This market structure is driven by legal restrictions that limit foreign ownership of telecom companies to 40 percent; difficulties involved in obtaining the required congressional approval and licenses (only telecoms companies can sell Internet connectivity, purchase data from international gateway facilities, or distribute bandwidth); and prohibitions against Internet services providers building their own networks. Yet sales of Internet services are either poorly regulated or not regulated at all; spectrum allocation is neither competitive nor transparent; there is no competitions policy for telecoms; enforcement of consumer protections is inadequate; and many current laws are obsolete, rendering many stipulations and penalties useless. Essentially, there is little to restrain the duopoly from charging whatever it likes for poor quality services. A further drag on service quality and availability is the lack of serious investment in fiber optic cables and cellular towers, which is compounded by regulatory obstruction, difficulties in securing right of ways, and a lack of coordination with public works projects to share the network and the cost of civil works.

A complete revamping of the sector to encourage competition could greatly improve Internet services. The national broadband plan to identify policy reforms is a first step. Achieving open access for Internet services, which is the best approach to establishing a competitive market, would require amending the Constitution to remove limits on foreign ownership of utilities. Even without constitutional change, however,

competition could be spurred, for example, by reducing the need for Congressional approval for some service providers and allowing domestic firms to use infrastructure owned by telecom firms. Connectivity could be expanded through the sharing of Internet infrastructure and simplifying the approval process for sharing the cost of civil works. Establishing a competitions policy for the internet, enforcing current antitrust laws, setting clear guidelines for spectrum allocation, and penalizing false advertising could add weight to regulatory oversight. More public investment, e.g., in new landing stations and the BIMP-EAGA Submarine Terrestrial cable system, and attracting more investment through public-private partnerships and providing subsidies to depressed areas could greatly enhance the infrastructure supporting the Internet.

Reforms to improve IT connectivity could promote greater job growth in Mindanao. Faster and more accessible Internet services would also create opportunities for Internet-based delivery of health and education services to remote communities.

## Addressing the Growing Skills Shortage and Rising Inequality

Highly-skilled technical workers are at a premium in Mindanao, undermining growth of the manufacturing, construction, utility, and IT-BPO sectors. Skills shortages are exacerbated by low rates of enrollment, cohort survival, and completion in basic education, and by the migration of graduates to more prosperous areas of the country and abroad. Government and business should work together to offer more scholarships in engineering and science, and collaborative efforts in Manila to improve the IT curriculum and improve foreign language skills could be expanded to Mindanao.

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Training programs are targeted at secondary school graduates, who are largely middle- or upper-income, and few programs provide training in skills relevant to the sectors where most poor people work, particularly agriculture

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The inequitable distribution of education and training perpetuates inequality, as is particularly evident in the limited economic opportunities for indigenous groups. For example, educational outcomes in the ARMM are much worse than national averages. In addition, training programs are targeted at secondary school graduates, who are largely middle- or upper-income, and few programs provide training in skills relevant to the sectors where most poor people work, particularly agriculture. Expanding training to workers with only basic education, linking community-based training to non-formal basic education programs offered by the Department of Education, and improving coordination between training and livelihood assistance programs and employment facilitation services could make it easier for workers who are poor to improve their skills. These efforts should be accompanied by investments in management and information systems to evaluate their impact. Finally, a substantial expansion of investment in basic education, particularly in underserved communities, could help reduce inequality. Additional financial incentives will be required to encourage teachers to work in remote and conflict-affected areas. Outsourcing the delivery of education services to NGOs (such as schools in ARMM) should be considered where government capacity is inadequate.

## Regulation of Labor Markets and the Business Environment

While minimum wages vary widely in Mindanao, on average the minimum wage is high compared to other parts of the Philippines and other East Asian countries. This reduces firm competitiveness. While only 10 percent of workers in Mindanao are covered, there is some evidence that the minimum wage requirements are associated with low levels of employment in manufacturing. Moreover, coverage of labor regulations is likely to expand over the medium term as the formal sector expands. Limiting the number of wage brackets would improve transparency, while removing exemptions; enforcing the lower minimum wage (the poverty threshold) for exempted establishments would expand coverage and perhaps reduce poverty.

Requirements for business registration, securing construction permits, and registering property are more cumbersome and time-consuming in urban Mindanao than in other East Asian cities. Requirements for frequent renewal, the multiplicity of licenses and permits required for business start-up and operation, the lack of coordination between government agencies and with private service providers, limited use of the Internet or other modern technology, and the need to travel to Manila or a regional center for some approvals all contribute to high costs and excessive time spent in meeting regulatory requirements for businesses. The high tax rate and the large number of payments required per year further increase costs, particularly for small firms.

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Ultimately, an online or mobile registration and payments system would drastically reduce business costs, but it would have to be accompanied by improvements in Internet services

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Regulatory requirements are gradually being simplified. National and local governments are signing memoranda of agreement (MOAs) that commit them to reduce the steps involved in starting a business, a practice which may soon reach cities in Mindanao. Some Mindanao cities are streamlining their business approval processes through the RS4LGU (Regulatory Simplification for LGUs) program. Some cities in Mindanao have passed executive orders to simplify their own business licensing systems. Davao and CDO introduced a single assessment of all business permit fees, Davao is speeding applications and payments for fire-safety evaluation clearances, and CDO has computerized its business registration process.

Much can be done to reduce the time and cost related to starting and operating a business. Among these are implementation of the Philippine Business Registry (PBR) at the national level and the Regulatory Simplification for LGUs (RS4LGU) program at the local government level, coupled with training and incentives for compliance; harmonizing national and local requirements to reduce overlaps and redundant requirements; weeding out unnecessary requirements; and reducing the frequency of renewals of government licenses, permits, and employment clearances. Improvements in transparency, such as prominent displays of requirements and service standards in government offices, would make compliance easier. Ultimately, an online or mobile registration and payments system would drastically reduce business costs, but it would have to be accompanied by improvements in Internet services. Simplifying tax forms and registration, facilitating tax payments while eliminating some bookkeeping and reporting requirements, and integrating national and local taxes and compliance systems could increase revenues, reduce corruption, and particularly ease the tax compliance burden on small- and medium-sized enterprises (SMEs).

## Better Governance of Land

Building up the governance framework for land will require allocating more resources and streamlining regulation. Better administration can make property rights more secure, minimize land disputes, and raise tax revenues. In the process it can also help finance much-needed infrastructure to make Mindanao's cities more competitive. Effective land management can help manage urban growth, allocate land to its best use, contribute to food security, manage migration and informal settlement, reduce negative externalities like congestion, pollution, and crime, and manage natural disasters.

For all aspects of land management, this report recommends, first, preparation of a physical plan for urban Mindanao and zoning plans for all types of land, followed by building a comprehensive mapping and database of land parcels. Over the medium term a national land use code could guide local planning. On titling and registration, it would be useful to prepare land tenure improvement plans as a basis for titling and other forms of tenure security and streamline the Registries of Deeds (RoDs) registration process. Enhancement of property taxation will depend on greater transparency and ensuring that properties better reflect market prices by creating a National Valuation Authority to centralize the review and approval of property valuations.

## Improving Prospects for Financial Inclusion in Mindanao

The expansion of financial services in Mindanao must be accompanied by a significant effort to improve financial education and awareness. There may be an opportunity to gradually introduce financial education as part of community development programs, cooperatives support programs, and conditional cash transfers. This could help people learn to gradually rely on a broader set of financial instruments.

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On titling and registration, it would be useful to prepare land tenure improvement plans as a basis for titling and other forms of tenure security and streamline the Registries of Deeds (RoDs) registration process

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There is a particular need in ARMM for targeted interventions to increase financial inclusion. One possible approach is to consider integrating financially inclusive dimensions in support programs delivered in ARMM by the government and development partners, especially ways to diversify from reliance on grants to alternative financing arrangements, such as repayable or matching grants and credit finance arrangements in programs supporting entrepreneurship. Also, to increase access to less-expensive formal credit there is a need to consider integrating market-based mechanisms to support the development of local financial intermediaries and facilitate a mind-shift in local individuals and businesses toward financial sustainability and viability as the region recovers from conflict. There is also potential for the use of mobile financial services and other service delivery innovations to better serve local needs. Since men are less likely to use financial services, it is likely that conflict in the ARMM area is an exacerbating factor and needs to be considered as interventions are designed.

An Islamic finance framework is an important element of any financial inclusion effort in ARMM. The National Commission for Muslim Filipinos, Bangko Sentral ng Pilipinas, Amanah Bank, and the Development Bank of the Philippines have worked with stakeholders and the legislature to put forward a bill amending the law so

that Amanah Bank can offer Islamic banking in the Philippines (World Bank 2015). In parallel with updating the general legal basis for Islamic banking, consideration of piloting approaches for Shari'ah-compliant microfinance is recommended.

## Supporting Efforts to Bring Peace to Mindanao

Five decades of violence has depressed growth and poverty reduction. Conflict, which has destroyed infrastructure and kept businesses small-scale and smallholders at subsistence levels to avoid kidnap and extortion, has affected 62 percent of Mindanao's population. About 60 percent of those resident in conflict-affected areas lives below the poverty line. Millions of people have been displaced: in August 2014 almost a million internally displaced persons resided in Mindanao and another million may have moved to Sabah in search of a better life. Even in areas of Mindanao that are relatively unaffected by conflict, the violence has limited investment and tourism revenues.

Economic policies and programs can support peace efforts by providing jobs for workers who might otherwise be tempted to join extremists' armed groups or organized crime, and by doing a better job of delivering basic government services. The conflicts can only be resolved by reaching a settlement on grievances that are rooted in longstanding social and political disputes. While many who take part in violence do so for ideological reasons, others join armed groups to escape poverty. Economic policies can support peace efforts by ensuring that jobs are available for workers who would otherwise have little alternative than to engage in violence, and by strengthening the delivery of basic government services.

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Education can be reformed by continuing to improve personnel and payroll systems, streamlining merit-based recruitment processes, decentralizing spending control, and increasing the involvement of civil society and communities in education planning, implementation, and monitoring

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Delivering government programs and basic services more effectively could help anchor stabilization. Cash-for-work programs would benefit poor individuals as well as local communities. Entrepreneurship programs could provide small cash grants to groups of people with approved business plans. To ensure equity, these programs should target those most at risk of engaging in conflict, such as decommissioned combatants, out-of-school youths, and internally displaced people, as well as those who are poor generally. Partnering with civic organizations and universities could improve basic service delivery, but monitoring and evaluation of all these programs is essential to support efficient scaling up. Programs should be accompanied by training appropriate for workers in conflict-affected areas, and take into account private sector recommendations on the curriculum and demand for skills. The government also could support projects that promote Mindanao's rich cultural, ethnic and religious diversity and help organize contract-growing schemes bringing together smallholders and agribusinesses.

Normalization includes the support to the development of communities which are impacted by conflict and, in parallel, specialized support to decommissioned combatants. Interventions are needed to support the transition of combatants to civilians. For longer term support and sustainable development of livelihoods, decommissioned combatants could be linked with agricultural development projects, job skills and

employment facilitation interventions, as well as with interventions to increase access to basic education for children of decommissioned combatants.

Locally-generated fiscal resources are few and government administration is weak in many conflict-affected areas, due to a lack of political contestability and minimal presence of the central government. Local leaders are often active in the “shadow economy” of informal markets and illicit activity, such as illegal logging and mining, smuggling of goods and people, and the sale of narcotics and weapons. Unregulated profits gained through the shadow economy make it harder to grow the formal economy. Decades of violence has depressed investment in roads, bridges, health clinics, and schools, and ports and shipping services remain expensive and inefficient. Educational attainment, test scores, and literacy rates are significantly lower, maternal mortality is higher, immunizations are fewer, and access to health care is more limited in the ARMM than in the rest of Mindanao and in other areas of the Philippines.

Given the scale and complexity of land conflict, promoting more equitable access to land will require systematic support. Measures to address land conflict can succeed only if they have solid support of both national and regional political actors. In the short to medium term, mechanisms to resolve land conflicts need to be expanded. Experience across Mindanao suggests that hybrid institutions that marry the authority of the state and the social legitimacy of transitional institutions can be effective. In the long term, it will be crucial to ensure effective reform of land administration policy and management both nationally and in Mindanao.

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To make progress in both education and health innovative approaches are necessary, such as training traditional birth attendants, using the Internet to provide health services, involving traditional institutions in education, and supplementing salaries for work in remote or particularly insecure areas

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Health services can be reformed by expanding coverage of PhilHealth, constructing more health clinics, hiring more staff, and emphasizing maternal and infant health services. Education can be reformed by continuing to improve personnel and payroll systems, streamlining merit-based recruitment processes, decentralizing spending control, and increasing the involvement of civil society and communities in education planning, implementation, and monitoring. To make progress in both education and health innovative approaches are necessary, such as training traditional birth attendants, using the Internet to provide health services, involving traditional institutions in education, and supplementing salaries for work in remote or particularly insecure areas. Finally, the national government could rely on NGOs or the private sector to provide services in areas where the local government is not functioning effectively or lacks capacity to meet the demand for services.

Given the unique context of Basilan, Sulu and Tawi-Tawi (Basulta), development options for this region could be also unique. Options range from converting Basulta into a free trade zone, to regularizing consular services for almost half a million Filipinos in Sabah. This could reduce tariff and non-tariff barriers to trade, and help Filipinos get better jobs and access to social services. As a result, higher remittances could help Basulta stabilize and grow.



## INTRODUCTION

1. A historic opportunity has arisen to address Mindanao's long history of conflict, limited development, and high rates of poverty. For the first time ever, the president of the Philippines, leaders of both houses of Congress, and a majority of cabinet secretaries are from Mindanao. Moreover, peace negotiations with both the Muslim and communist insurgent groups is underway, and the national economy is enjoying robust growth. This report builds on the Philippines Development Report *Creating More and Better Jobs* (World Bank 2013) to arrive at a better understanding of Mindanao's economic development challenges and to suggest policy priorities for the future. It presents the most important policy recommendations, some of which emerging from intensive consultations with stakeholders in Mindanao and the rest of the Philippines.
2. Boosting development in Mindanao is essential for the economic progress of the entire country. A large proportion of the country's poor are in Mindanao: Mindanao holds about 25 percent of the country's population but 37 percent of the country's poor. Thus, significantly reducing poverty nationally depends on reducing poverty in Mindanao. Moreover, Mindanao is the country's major source of agricultural products, so increasing production there could reduce food and input prices nationally, improve public welfare, and heighten the competitiveness of the entire Philippine agriculture. Achieving successful development in Mindanao will be a major test of the country's ability to achieve its long-term vision of rapid, sustained, and more inclusive growth.
3. Resolving conflict in Mindanao rests on addressing its root causes of conflict and providing jobs and economic opportunities as alternatives to violence. The main drivers of the conflict are both economic and political. Attaining a just and lasting peace requires a political solution to address the causes of conflict— injustice, weak governance, land conflicts, and discrimination. The peace agreements that have been signed are not enough alone to put all of Mindanao on the path of inclusive growth. Peace can be secured only by both addressing the sources of conflict and creating jobs and economic opportunities. Fostering economic development is necessary to support stabilization. Jobs provide opportunity to those who have not previously felt the benefits of economic growth.

4. This report adds value because its inclusive approach of engaging with a broad-based group of stakeholders at the time of both analysis and engagement has served as a means of building support for needed reforms. The goal was to generate ownership among Mindanawons through consultations which were guided by mostly local technical experts. For the analysis, the World Bank partnered with leading universities, think tanks, experts, and nongovernmental organizations (NGOs). Some 90 percent of the extended team came from within Mindanao, and they contributed more than 40 background papers. The study's inclusive approach was to listen intently to government, business, labor, civil society, and vulnerable groups who are often left out in the engagement process, such as indigenous people, Moro women, out-of-school youth, combatants, and internally displaced people. From January 2015 to June 2016, some 1,500 stakeholders were consulted. Finally, 10 eminent individuals with government, business, labor, and civil society experience provided strategic advice to the report team.
5. The second important value-addition of the report is that it is a report about the whole of Mindanao. Much of the previous research is focusing only on conflict-affected areas or on specific economic sectors in Mindanao, but this study looked for ways to grow the entire Mindanao economy. Conflict and nonconflict areas in Mindanao are closely interconnected on maps that depict product movements, for instance. Because nonconflict areas and cities serve as consolidation stations for produce from conflict areas, developments in the latter have profound implications for the rest of Mindanao and vice versa. Mindanao's jobs challenge can only be addressed effectively if the development strategy seamlessly connects conflict and lagging regions to growth poles, so that all of Mindanao can benefit. Addressing constraints in any area will therefore improve economic activity and job creation throughout Mindanao.
6. The report complements the rich literature on peace building in Mindanao by recognizing that jobs and economic opportunities are central to stabilization and peace. Conflict affects nearly 60 percent of all Mindanao's local government units (LGUs). Breaking the cycle of insecurity and reducing the risk of its recurrence requires a virtuous spiral of restoring confidence in collective action and transforming institutions so that they can provide sustainable security, justice, and jobs (World Bank 2011). Jobs offer a stake in society to groups that might otherwise receive more respect and recognition from engaging in armed violence rather than lawful activities. However, job creation will need to be managed carefully to ensure equity and avoid favoring any group, as that could exacerbate tension rather than underpin stability.
7. Finally, building on the dialogue with the Philippine government and stakeholders in Mindanao, this report proposes a strategy for regional development in Mindanao. The three main components are to (1) raise agricultural productivity and improve farm-to-market connectivity; (2) boost human development; and (3) address drivers of conflict and fragility and strengthen institutions in ARMM and conflict-affected areas. The World Bank engagement for Mindanao will be based on this strategy.
8. Policy recommendations are made in four separate categories: (1) increasing agricultural productivity by improving extension and irrigation services, along with price reforms to realize Mindanao's agriculture potential; (2) building up logistics and transport connectivity by improving road networks and the efficiency of shipping services to reduce trade costs; (3) improving the supply of reliable power and the speed, affordability, and quality of information and communications technology (ICT) services

by fostering competition; and (iv) supporting private investment by addressing the growing skills gap, the high regulatory burden for businesses, and by improving financial inclusion and the governance of land. A separate section considers economic policy measures to support the resolution of Mindanao's longstanding violent conflicts.

9. **It will not be easy for Mindanao to achieve rapid and sustainable growth.** Productivity in agriculture is low except for a few export crops, manufacturing is constrained by weak infrastructure, and a low-productivity, low-skill services sector has become the catch basin for excess agriculture workers who cannot find jobs in cities. Lack of competition in key sectors, insecure property rights, complex regulations, and severe underinvestment in infrastructure, education, and health—not to mention weak institutions—have led to this anomalous growth pattern, which has not provided good jobs to the majority of Mindanawons and has led to substantial emigration of many of its talented people. Decades-long conflict has caused untold human suffering and severely constrained growth in conflict-affected areas (about 60 percent of Mindanao's cities and municipalities are directly affected by conflict), while reducing confidence and discouraging investment throughout Mindanao.

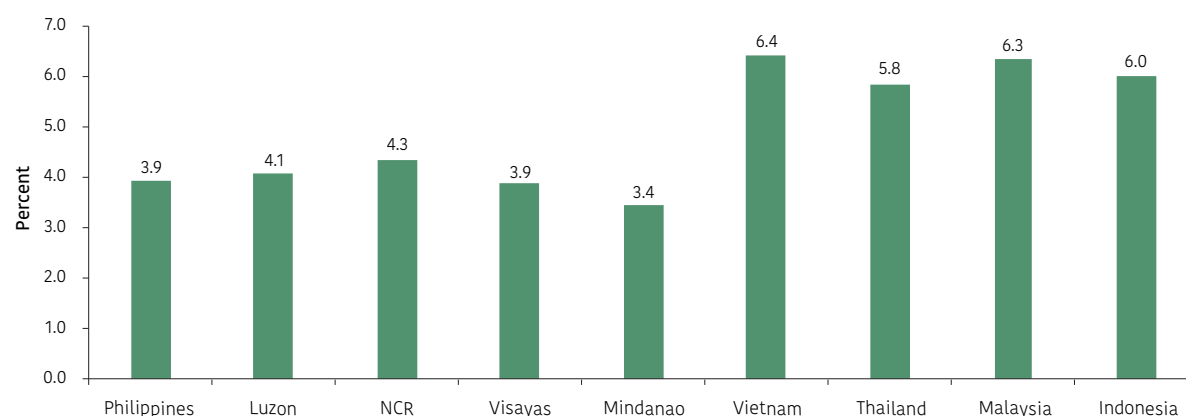


## THE DEVELOPMENT CHALLENGE IN MINDANAO

### Slow Economic Growth

10. Mindanao has fallen behind the rest of the Philippines. Once its per capita income was similar to Luzon's and triple that of the Visayas. However, its growth has since fallen far below the other two island groups. GDP increased by 3.4 percent annually between 1975<sup>11</sup> and 2014, compared to 4.1 percent in Luzon, so that for the period growth in Luzon was 30 percent higher (Figure 1). By 2014, Mindanao's per capita GDP was only about half that of Luzon. Compared to neighboring countries with a similar comparative advantage in agriculture, until 1980 Mindanao was as rich as Thailand and richer than Indonesia and Vietnam. Yet in 2014 per capita GDP in Mindanao was 50 percent of Indonesia's, 30 percent of Thailand's, and 87 percent of Vietnam's. Moreover, the ability of growth to generate employment has declined steadily. Between 1975 and 1996, for every 1 percent Mindanao's economy

FIGURE 1: Average annual GDP growth in Mindanao, the rest of the Philippines, and neighboring countries, 1975–2014, percent



Source: World Bank, World Development Indicators database

<sup>11</sup> This is the earliest available year with regional GDP data.

grew, employment grew by 1.04 to 1.72 percent. However, the elasticity fell to 0.43 between 1997 and 2008 and to 0.31 between 2009 and 2014, suggesting that higher growth in recent years did not create a commensurate number of jobs.

11. Slow growth in Mindanao since the late 1970s reflects limited technological progress. From 1978 to 2014<sup>12</sup> the contribution of physical and human capital to Mindanao's growth was comparable to that of Luzon, but growth in output per worker was minimal and the contribution of total factor productivity (TFP)<sup>13</sup> was negative (Table 1). Mindanao's negative TFP contribution is probably the result of conflict, which tends to undermine institutions, the rule of law, and incentives to innovate and grow. The number of conflict-related deaths and incidences of negative TFP from 1986 to 2004 are positively correlated.<sup>14</sup>

**TABLE 1: Growth decomposition, 1978 to 2014**

	Growth input per worker	Contribution to growth		
		Physical capital	Human capital	TFP
Philippines	0.90	0.14	0.29	0.46
Luzon	0.84	0.11	0.29	0.45
Visayas	1.76	0.67	0.34	0.74
Mindanao	0.08	0.13	0.26	-0.31

Sources: PSA, Bureau of Labor and Employment Statistics (BLES), and WB staff calculations

Notes: Cumulative growth from 1978-2014 is calculated similar to the method utilized by Bosworth-Collins (2003)

12. Since 2010 Mindanao's economic performance has improved significantly. From 2010 to 2014 growth averaged 6.1 percent, on a par with Luzon and the Visayas. Key cities in Mindanao, like Davao and Cagayan de Oro, are engines of growth. Like the rest of the country, Mindanao's growth reflects the fact that investment has been improving for the past six years. It also reflects policies (e.g., partial liberalization of cabotage) and resources (e.g., tripling of infrastructure budget) devoted to improving growth in Mindanao, and growing investor confidence about the prospects for peace.

## The Labor Force: Both Opportunity and Challenge

13. There is considerable, and rising, demand for good jobs — jobs that raise real income and lift people out of poverty. In 2014 some 2.4 million Mindanawons were either unemployed (about 460,000) or underemployed (1.9 million).<sup>15</sup> Moreover, Mindanao's relatively young population means that 392,000 workers may enter the labor force every year from 2016, for a total of 5.2 million by 2022 (Figure 2). Benefiting from the availability of young workers, which is an enormous potential resource that can boost growth, will require the availability of productive jobs that pay decent wages. Moreover, enabling workers to transition from the informal sector (about 70 percent of employment) to formal sector jobs could improve their welfare and increase their productivity.

<sup>12</sup> 1977 is the earliest year all data were available. Two years are needed to measure initial capital formation, and 2014 data are the most recent available.

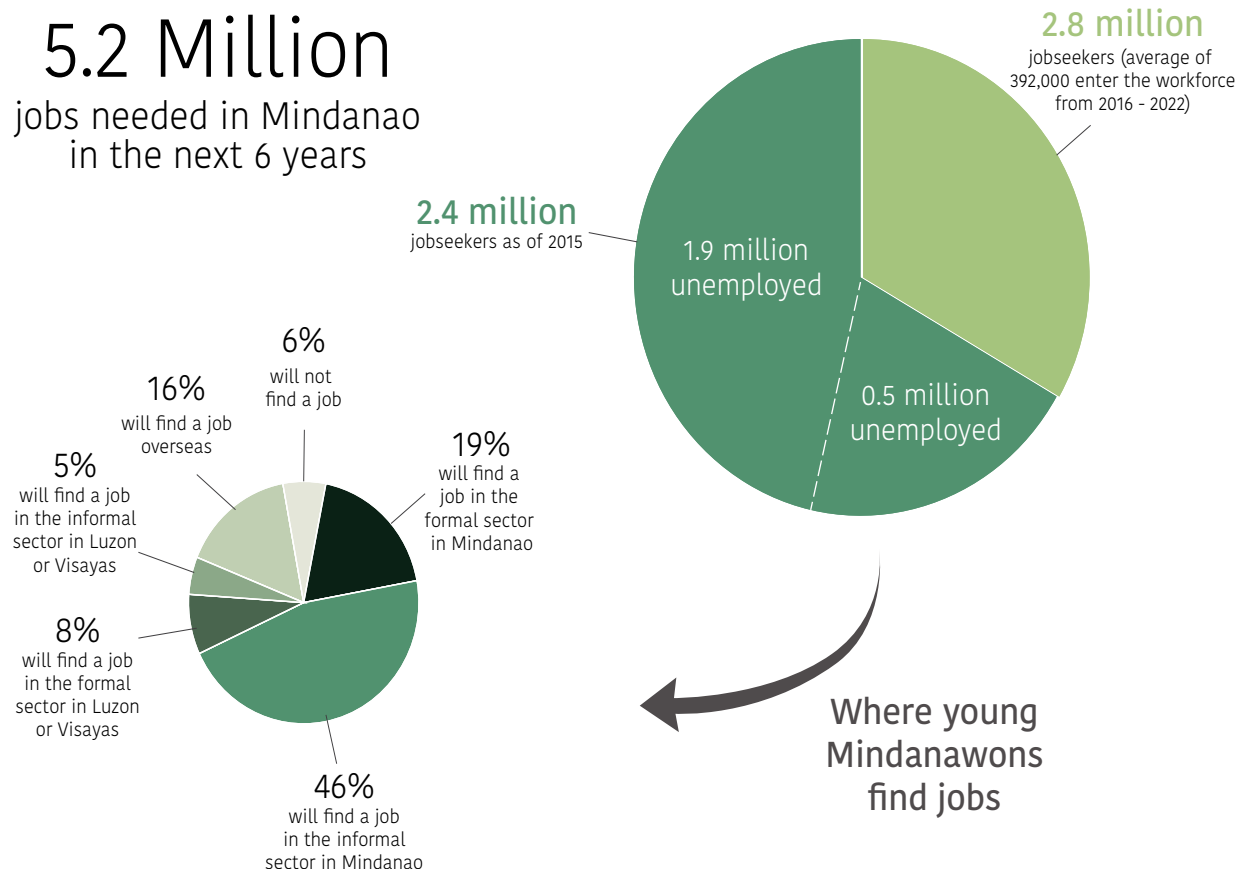
<sup>13</sup> TFP is the residual of growth after accounting for the contributions of capital and labor, adjusted for educational attainment. On average, statistical errors should equal zero, so that the negative residual likely reflects a lack of technological and institutional change.

<sup>14</sup> Sufficient data are available only for these years.

<sup>15</sup> About one in five Mindanao workers would like to work more, but many jobs are only temporary or part-time.



FIGURE 2: The jobs challenge in Mindanao



Source: Philippine Statistics Authority (PSA) data. World Bank staff computations

14. The sources of growth in Mindanao have not generated enough high-quality jobs. Unlike Luzon and Visayas,<sup>16</sup> which have more diversified, innovative, and labor-intensive economic structures (e.g., higher-value exports like electronics and furniture, and fast-growing formal services, such as IT-BPO), Mindanao's economy was driven by plantation crops (e.g., rubber, abaca, banana, and pineapple) and by forestry, mining, and heavy manufacturing (e.g., steel) to support the import substitution program.<sup>17</sup> These are capital-intensive sectors that require little local processing, result in little local reinvestment of profits, and hence had low local multiplier effects. The few infrastructure funds were directed to building logistics networks to connect Mindanao plantations to its cities, and ultimately to Manila and Cebu; the neglect of intra-Mindanao networks discouraged intra-Mindanao trade. While in earlier years these sectors contributed to Mindanao's high GDP per capita between 1960 and 1980, they created few jobs and hence did little to reduce poverty. The concentration of power and wealth resulting from this pattern of growth entrenched deep inequality and ultimately contributed to conflict as few of the benefits of growth reached most Muslims and Indigenous Peoples.

<sup>16</sup> The rapid growth in the Visayas is also explained by large investments in Leyte province under Ferdinand Marcos, whose wife, Imelda, comes from there.

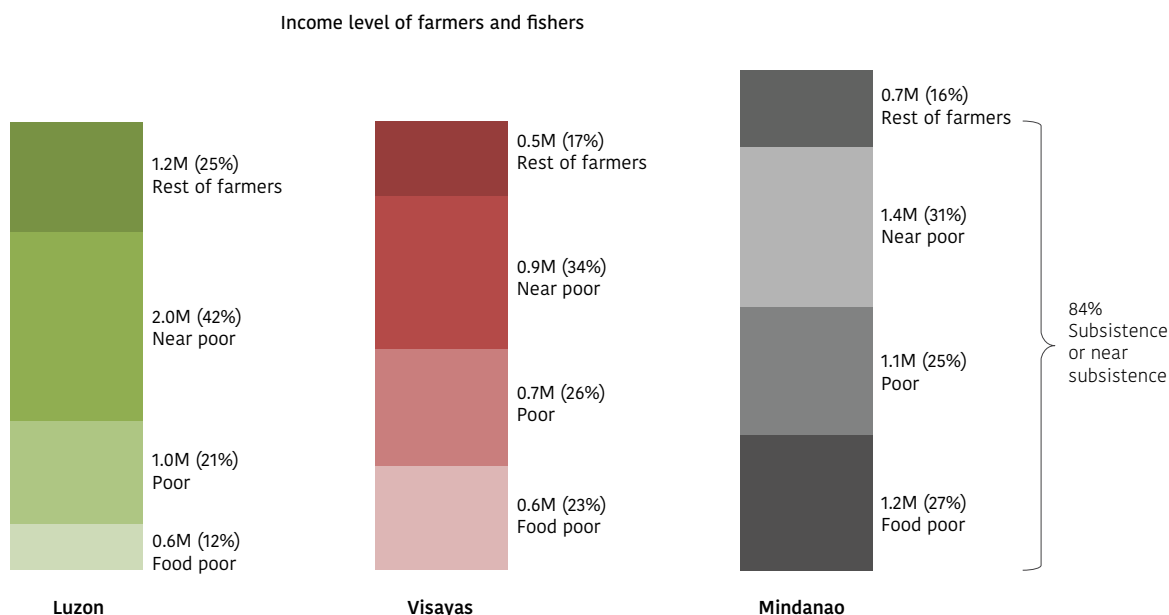
<sup>17</sup> Between the 1950s and 1980s, an import substitution policy was implemented to support local manufacturing. In Mindanao, Iligan City was a center of heavy manufacturing (e.g., steel production).



## High Incidence of Poverty

15. The poverty rate is higher in Mindanao than in Luzon and the Visayas. According to the Family Income and Expenditure Survey (FIES) 2015, 36 percent of the population of Mindanao lived below the poverty line, compared to 13.1 percent in Luzon and 28 percent in the Visayas. Poverty is particularly high in rural Mindanao. In 2012, there were 1.2 million food-poor farmers and fisherfolk (27 percent of the total) and 1.1 million (25 percent) living between the food and poverty thresholds. Another 1.4 million (31 percent) lived close to the absolute poverty line (20 percent above), making them highly vulnerable to fall back into poverty. Thus a total of 3.7 million farmers and fisherfolk live in or near poverty,<sup>18</sup> leaving only 0.7 million (16 percent) with regular marketable surplus to generate savings for the next planting season (Figures 3 and 4). In part, the high poverty rate reflects unequal economic and political power. When one person or firm controls the land, labor, credit, and product markets or any combination thereof,<sup>19</sup> he can drive farmers to subsistence by exploiting interlocking markets or even blocking access to markets.<sup>20</sup> Consultations and research undertaken for this study suggest that these practices thrive in Mindanao and have the effect of locking some farmers and fisherfolk into a vicious spiral of poverty and indebtedness.

FIGURE 3: Poverty and vulnerability, farmers and fisherfolk in Mindanao, 2012, percent



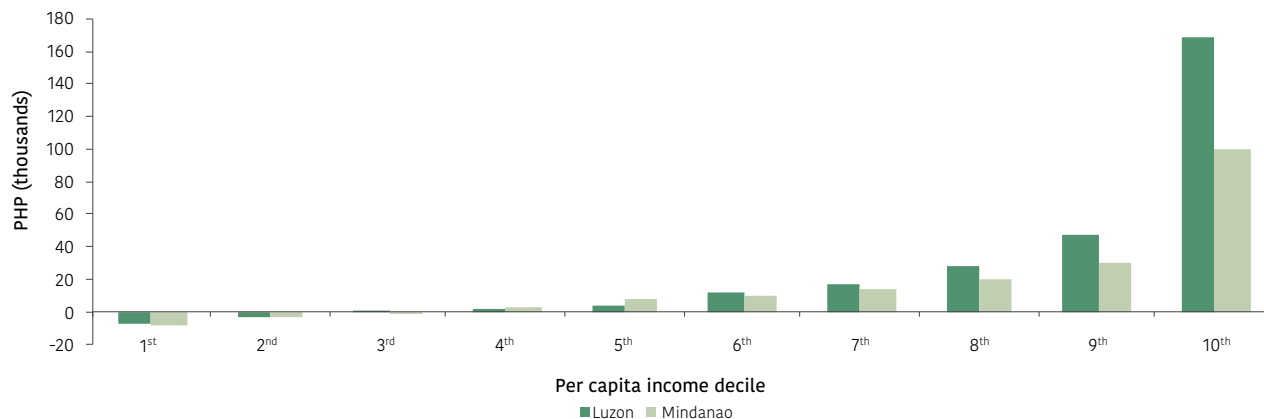
Sources: FIES-LFS 2012

<sup>18</sup> Based on the 2012 FIES. In 2012, in Mindanao the average annual per capita food poverty line was PHP 13,453 and the poverty line was PHP 19,291 both slightly higher (1.4 percent) than Luzon, despite Mindanao being less developed. People falling below the provincial per capita food thresholds are considered food-poor, while those with per capita income equal to or above the provincial per capita food thresholds but below the provincial per capita poverty thresholds are considered poor. Those with per capita income equal to or above the per capita poverty thresholds but below the 50th population percentile (agricultural workers tend to have lower income) are considered near-poor.

<sup>19</sup> For instance, in a Mindanao town, the *datu* (local chieftain) can control local politics, own the only rural bank, have a monopoly of security services and wide influence over labor and land allocation.

<sup>20</sup> For more discussion, see Binswanger, Deininger, and Feder (1993).

**FIGURE 4:** Average savings of farmers and fisherfolk households by Economic Decile, Luzon and Mindanao, 2012



Sources: FIES 2012 and WB staff estimates

16. Poverty is significantly lower in urban than in rural areas and has even fallen recently in the former. Between 2003 and 2012, small-area estimates of poverty<sup>21</sup> show moderate to significant poverty reduction in cities (Figure 5). The largest cities, Davao and Cagayan de Oro, have the least poverty (Figure 6), in large part due to their distance from conflict. Nevertheless, the incidence of poverty there is higher than in urban areas outside Mindanao: the share of the population with incomes below the poverty line averaged 19 percent in Mindanawo cities, compared to 4 percent in the National Capital Region. The high share of urban poverty in Mindanao is being mitigated by the 4Ps<sup>22</sup> conditional cash transfer program, which benefits between 8 and 32 percent of households in major cities. Moreover, Mindanao cities have fewer modern amenities than cities in Luzon or the Visayas. Proxy indicators show that Mindanawons have less money for basic wants, savings, and luxury items.
17. Poverty is highest in conflict-affected areas. ARMM has the highest poverty incidence (59 percent—18 percentage points higher than Mindanao as a whole). Municipal poverty incidence deteriorated in ARMM between 2003 and 2012, and is correlated with the incidence of *rido*, inter-clan feuds.
18. Poverty among workers is higher in Mindanao than elsewhere. In Mindanao, 34 percent of workers live below the poverty line, compared to 12 percent in Luzon. The incidence of in-work poverty is highest among less educated and less skilled workers, especially those who hold temporary or involuntary part-

**FIGURE 5:** Urban and rural poverty in Mindanao, 2003 and 2012, percent

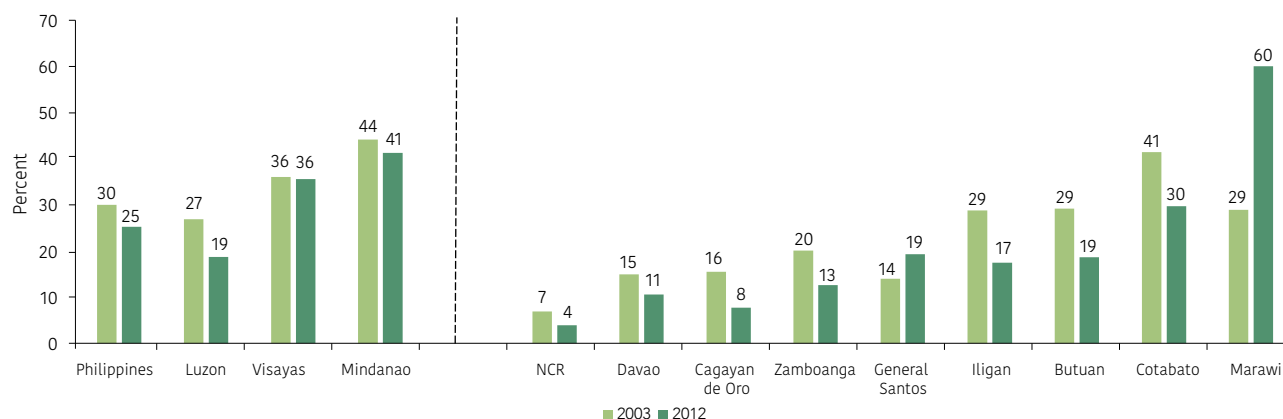


Sources: PSA and WB staff calculations  
Note: City and non-city poverty rates were estimated using the weighted average of the PSA's small area estimates of poverty, and thus may differ from the official poverty rates

<sup>21</sup> The PSA produces small area estimates of poverty at the municipal or city levels. The methodology combines household survey data (FIES and labor force survey) and census data (census of population and housing) to arrive at more disaggregated statistics using a modeling approach.

<sup>22</sup> 4Ps stands for Pantawid Pamilyang Pilipino Program.

**FIGURE 6:** Incidence of poverty in major Mindanao cities, 2003 and 2012, percent



Source: PSA

time jobs. The self-employed are more likely to be poor than wage-earners—for the most part self-employment reflects lack of opportunity rather than entrepreneurial drive. Underemployment, not temporary unemployment, is the main reason for in-work poverty. The key to reducing in-work poverty in Mindanao is better education and skills training and enhancing productive job opportunities by making the investment climate more attractive.

## The Costs and Benefits of Migration

19. **Migration within the islands to urban areas and from urban Mindanao to the rest of the Philippines is substantial.** The cities attract many rural migrants in search of better jobs and safer living conditions; the more rapid growth and relatively safe environment in General Santos, Cagayan de Oro, and Davao attract the most permanent migrants.<sup>23</sup> However, these three cities also experience the most emigration as their people find better jobs in Cebu, Manila, or overseas. Temporary migrants looking for jobs or fleeing from conflict account for a large share of the urban population.<sup>24</sup> Many temporary migrants are internally displaced persons (IDPs)<sup>25</sup> or individuals looking for temporary work.
20. **The impact of migration on Mindanao development is ambiguous.** Remittance receipts are likely to be substantial; remittances totaled 9.8 percent of GDP in the Philippines as a whole. The ability of urban areas to absorb displaced persons helps to reduce suffering, enables workers to move to more productive jobs, and eases population pressure in conflict-affected areas. However, the most highly-educated workers are leaving in droves. The top college courses—nursing, accountancy, maritime studies, and hotel and restaurant management—are those in demand in Manila and abroad, and many vocational students leave to find work in construction in Manila, Cebu, and the Middle East. The high rate of emigration of skilled workers is contributing to high job turnover and a scarcity of the highly productive workers who are essential if the services and manufacturing sectors are to grow.

<sup>23</sup> Permanent migrants are defined as individuals who lived in a different city or municipality five years before the census.

<sup>24</sup> Transitory migrants are defined as the difference between the number of voting age (18 years and above) from the 2010 Census of Population and Housing and the number of voters registered in 2010 with the Commission on Elections less the number of overseas workers. Because the difference is not adjusted for unregistered voters, the estimate should be considered an upper bound.

<sup>25</sup> In 2015, the number of people displaced by armed conflict was reported at 208,232 in the ARMM, the highest in any region, followed by Central Mindanao (24,193), the Davao Region (3,030), Caraga (9,260), and Northern Mindanao (1,582); many of them live in or near major cities like Cotabato and General Santos.

## A STRATEGY FOR MINDANAO REGIONAL DEVELOPMENT

### Unlocking Mindanao's Potential

21. Driving down poverty and delivering on the new Philippine Government Strategic Framework for Mindanao Peace and Development will demand a new form of engagement in Mindanao. The Strategic Framework recognizes that there are “two Mindanaos”: one that can be characterized as relatively stable and prosperous, and the other suffering pervasive poverty, violent conflict and, poor governance. To address the goal of a peaceful, cohesive, secure, and inclusively developed Mindanao, it calls for five linked strategic outcomes: resilient communities built; effective governance promoted; inclusive economic growth and jobs ensured; security environment stabilized; and the consensus for peace strengthened.
22. The World Bank has drawn up a strategy for regional development in Mindanao, building on dialogue with the Philippines government and local stakeholders. The three main components are: (1) raise agricultural productivity and improve farm-to-market connectivity; (2) boost human development; and (3) address drivers of conflict and fragility while building up institutions in ARMM and other conflict-affected areas.
23. Mindanao's comparative advantage lies in agriculture, yet its full potential is not being realized, mainly because productivity remains low. Agriculture and related services and industries account for 60 percent of GDP and 57 percent of its employment. Mindanao accounts for 40 percent of the country's total agricultural output and 60 percent of its agricultural exports. However, only 16 percent of Mindanao farmers produce a marketable surplus and more than half of farm households are poor. Rural underemployment is high. Many farmers are neither organized nor linked to value chains. With a few exceptions (e.g., bananas) the sector's once vibrant growth has stalled.

## BOX 1: The market potential of agriculture in Mindanao

Mindanao is considered the agricultural basket of the Philippines, producing a diverse set of crops and already serving both local and international markets. Of the three island regions, it accounts for the largest share of agricultural production and contributes significantly to national food security. For example, it produces about 50 percent of national corn production. Also, it produces most of the country's high-value crops: about 80 percent of bananas and coffee, and over 60 percent of coconuts. In addition, Mindanao contributes a significant share of the country's key commodity contributions to total world export volume. Its bananas, pineapples, and coconuts comprised about a third of the world export volumes.<sup>26</sup> However, Mindanao's agricultural sector has not realized its potential.

A number of Mindanao's agricultural products could well extend their shares in both domestic and international markets. As background research for this report, value chain analyses were conducted for about two dozen of these. Some products, such as coffee, aquatic products, seaweed, and coconut, appear to have considerable market potential, either for more effectively serving nearby urban centers or for expanding in markets abroad.

One argument for ramping up coffee production in Mindanao is that it could also address demand for domestic consumption of currently imported coffee products. In recent years, domestic coffee consumption rose significantly, to about 130,000 metric tons of coffee in 2015 alone—more than double consumption in 2007. Until the 1990s, the Philippines was a major exporter of coffee beans, but following a sharp decline in prices, domestic production had steadily declined. Today, green coffee is among the country's top 10 agricultural imports. For Mindanao, where about two-thirds of national coffee production takes place, there is a potential for the expansion to coffee processing, such as the production of instant coffee, given that 95 percent of all domestically consumed instant coffee is imported.

Aquatic products like milkfish, tilapia, and seaweed could serve wider domestic and international markets. According to the Food and Agriculture Organization, the Philippines ranks among the top 20 global producers of fish, crustaceans, and mollusks, accounting for about 1 percent of total global production; Mindanao contributes already nearly half of total domestic production. Domestically, milkfish and tilapia are central items in the Filipino diet, yet Mindanao's contribution to milkfish production is about 15 percent and for tilapia 7 percent.

In terms of the aquatic export markets, for Mindanao seaweed has the most market potential. The Philippines ranked 3<sup>rd</sup> globally in production of aquatic plants with 5.7 percent of total world production in 2014. Mindanao accounts for more than half of total Filipino production, most of it taking place in ARMM. Moreover, as an aquatic export seaweed is second only to tuna in terms of value, accounting for US\$202 million—about 20 percent of total fisheries exports earnings in 2015. There is heavy demand from international markets for seaweed, from which carrageenan is extracted for use as an additive, binder, and emulsifier in the food, pharmaceutical, beverage, and cosmetic industries.

Building on established export commodities such as coconut offers many of Mindanao's poorest farmers an opportunity to become more closely linked to enterprises. The Philippines is the second largest producer of coconuts in the world; in 2015 coconuts accounted for about 40 percent of total export earnings, and over 60 percent of those coconuts came from Mindanao. In recent years, international demand has outstripped supply because of the proliferation of coconut byproducts, such as virgin coconut oil, coco sugar, and copra. This is an opportunity to expand Mindanao's coconut-related agribusiness for both domestic and export markets.

<sup>26</sup> Export volume estimates were generated using the World Integrated Trade Solution (WITS) database.

24. There is domestic and foreign market potential for Mindanao’s agricultural products (Box 1). First, there is scope to supply more rice and maize to the other islands of the Philippines as food or feed ingredients. Although Mindanao accounts for a high proportion of national food production, it is only tenuously linked to the national market, thus limiting its contribution to national food security. This is a missed opportunity for both Mindanao and the country. There is also an emerging opportunity to cater to growing urban demand within Mindanao for higher-value perishable meat and vegetables. Realizing the domestic market potential will depend on addressing limited connectivity to give farmers better access to markets both within Mindanao and beyond. Finally, there is an opportunity to expand the production of exportable agriculture products: aquatic, coffee, and coconut products. Here the challenge will be mainly to more closely link farmers with enterprises. It is primarily agribusinesses that have the opportunity to differentiate or diversify product lines.
25. A major constraint for the agriculture sector is limited connectivity. Farmers are disconnected or misconnected with technical service providers, agro-enterprises, markets, and consumers, a problem that has multiple consequences (Table 2). Many roads are in bad condition or congested, with the result that agricultural produce is often rejected, especially perishable commodities like bananas and other fruits and vegetables. Beyond the lack of adequate FMRs, there is the need to prioritize modernization to relieve congestion on roads accessing ports for more connectivity beyond Mindanao. Mindanao ports lack economies of scale: there are some 690 ports, yet the top four handle only 17 percent of domestic cargo and 12 percent of foreign. Many ports are owned by private companies and are closed to smaller farmers.

**TABLE 2:** Effects of poor connectivity on farmers, agribusiness, and consumers

Farmers	Agribusiness	Consumers
Reduced terms of trade (higher input costs and lower produce prices)	Higher aggregate cost for produce	Higher food prices for both staples and nonstaples
Reduced marketing options and less bargaining power	Higher physical and product quality losses	Reduced scope for dietary diversity and improved nutrition
Reduced incentives to invest in higher on-farm productivity	Difficulties in realizing scale benefits and utilizing processing capacity	Increased exposure to food safety risks
Minimal scope to diversify into higher - value perishable products	Inability to service national markets	
Dulled incentives for producing higher - quality products and frequent rejections	Reduced export competitiveness and profitability	

26. Customs procedures are a major bottleneck to trade facilitation, especially for agricultural products. On the *Doing Business* indicator for Trading Across Borders the Philippines ranked at 95 in 2016 (World Bank 2016a), 1 rank lower than to 2015. The World Bank Logistics Performance Index ranks the country at 71, down from 85 in 2014, with Customs and Border Management ranking at 78—31 points lower.
27. Finally, because the protracted land disputes and conflict have deterred investments in agriculture, they have slowed job creation and poverty reduction. It is true that favorable climatic conditions, the presence of Lake Lanao and the Liguasan Marsh, and the impact of climate change elsewhere in the country have encouraged large firms based in Davao and CDO to extend their operations to Lanao del Sur and Maguindanao through contract growing agreements with smallholders. However, the

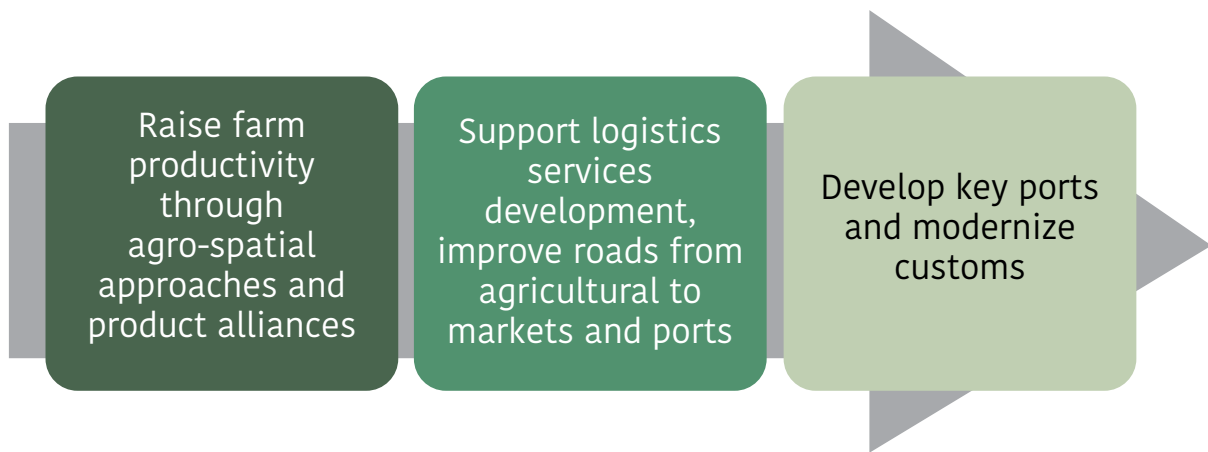


large majority of prospective investors are deterred by unclear and overlapping property rights, and even current investors are deterred from expanding their operations. Land disputes can easily turn into violent confrontation and inter-elite clashes, which can destroy inventory, delivery, and production schedules. In some cases, the potential for profit from large pineapple and banana farms has led elites to dispossess smallholders as they consolidate lands for contract growing.

28. The proposed strategy is designed to support Mindanao's comparative advantage and strengthen its linkages with the entire region. It identifies three priorities to unlock agriculture potential and streamline farm-to-market connectivity (Figure 7).

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**FIGURE 7:** How to unlock Mindanao's agriculture potential



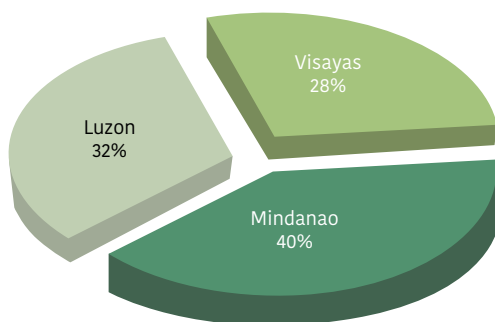
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29. Connectivity bottlenecks are compounded by skills deficits. Over 80 percent of Mindanao's farmers and fishermen are poor or near-poor, lacking scale and skills to compete. People with more education in Mindanao, especially ARMM, see few prospects for wage gains. To maximize human development and productivity in Mindanao, weaknesses need to be addressed in both basic education and skills & employment development. The approach needs especially to target youth in conflict-affected areas.
  30. Resolving conflict in Mindanao rests on addressing the causes of conflict and providing jobs and economic opportunities as alternatives to violence. The proposed framework builds on the 2011 World Bank *World Development Report* (WDR) on conflict, security and development. Breaking the cycle of insecurity and reducing the risk of its recurrence require restoration of confidence in collective action, and transforming institutions to provide a sustained level of security, justice, and jobs. "Restoring confidence" requires deliberate efforts by both state and private actors from the national to the community level in order to launch the initial stages of confidence-building and institutional transformation and secure early gains. "Transforming institutions" requires giving early priority to actions to reform the institutions responsible for citizen security, justice, and jobs.

31. For a number of reasons, creating jobs is central to stabilization and normalization in conflict areas: (1) Jobs address one of the roots of conflict, which is a lack of employment opportunities that drives many, particularly combatants and out-of-school youth, to desperation. Without prospects for earning a decent income, the unemployed (especially the young) become pessimistic about the future. (2) When employment opportunities are available, recruitment by rebel or criminal elements promising better income becomes less attractive. (3) Jobs give individuals the sense of being part of society because they share in its benefits. (4) Because they feel that they belong to society, they will have a greater stake in its preservation because the outbreak of conflict will result in their losing their jobs and hence their goal of a better future.
32. However, job creation will not be enough. Where the cause of conflict is not economic, such as the struggle for identity or self-rule, economic measures alone will not be enough to resolve the conflict. In Mindanao, peace and development will hinge on a political solution that can successfully address the causes of violence—injustice, inadequate governance, land dispossession, discrimination, and sociocultural marginalization. Inclusive job creation can support peace by providing equitable access to economic opportunity for all, even those in remote, conflict-affected communities.
33. Supporting the transformation of institutions is not simple and cannot be done quickly. There will be no single “make or break” moment; it will take a series of self-reinforcing actions to restore confidence and gradually build effective institutions. Violence prevention and recovery is only possible if it is recognized that security, justice, and economic stresses are linked: a specialized suite of programs is needed in fragile environments that combines elements of security, justice, institution building and economic transformation. In addition to making agriculture more productive, improving farm-to-market connectivity, and promoting human development, it will be necessary to build up institutions in ARMM and other conflict-affected areas and addressing less obvious drivers of conflict and fragility. One aspect is to support resilient communities and responsive local governments. Another is to promote citizen security through supporting normalization processes and promote justice by addressing land conflicts.
34. The proposed strategy could have wide-ranging benefits, from nationwide improvements due to customs reform, to subsistence farmers and day laborers in the poorest areas accessing FMRs to youth seeking training for employment. It will also transcend the divide between nonconflict and conflict-affected areas in Mindanao and support both peace-promoting catch-up socioeconomic development interventions and longer-term economic development opportunities that would help reduce the risk of conflict in the future. The strategy proposed will guide the World Bank engagement in Mindanao.

## REALIZING THE HIGH POTENTIAL OF MINDANAO'S AGRICULTURE<sup>27</sup>

35. Mindanao is the agriculture center of the Philippines, producing diverse crops and livestock, including many high-value commodities. It contributes 40 percent of the country's agricultural products (Figure 8), with significant shares (Figure 9) of rubber, cacao, coffee, coconut (small farms), bananas and oil palm (mid-sized farms), and pineapple (large farms). The top three Philippine exports are coconuts (38 percent of world export volume in 2014), bananas (33 percent of world export volume in 2014), and pineapples (28 percent of world export volume in 2014).<sup>28</sup> Since most workers in Mindanao rely directly

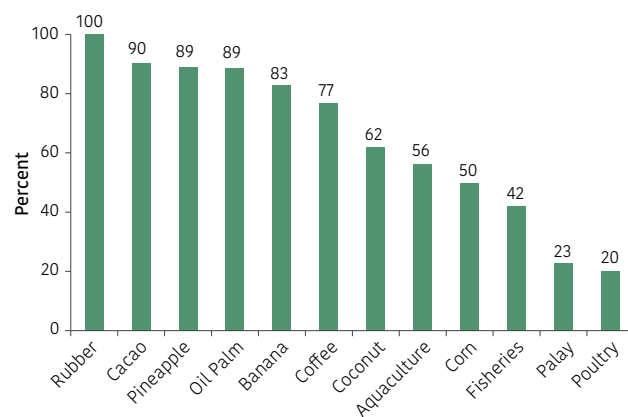
**FIGURE 8:** Regional production as share of total agricultural production in the Philippines, 2014, percent



Source: PSA

Note: Data for fisheries uses 2012 as base and the growth rate of the AFF sector to project 2014 share of production.

**FIGURE 9:** Crops produced in Mindanao as a share of total production, 2014, percent



Source: PSA

<sup>27</sup> This chapter is based on a suite of comprehensive background papers. This chapter points out the most important conclusions and strategic thrusts of an agricultural-driven jobs agenda for Mindanao. Other details can be found in background papers for the forestry subsector and for the poultry and livestock subsectors. A separate chapter discusses important features of Mindanao's agrarian sector in conflict-affected areas (e.g., land conflict, use of forest and mining land, and Islamic financing). These chapters and background papers complement each other, and together provide a more comprehensive picture and strategic agenda for transforming Mindanao's agricultural sector.

<sup>28</sup> Export volume estimates are based on the WITS database.

on agriculture, transforming the sector could be significant for generating jobs. In 2012, the agriculture and agricultural produce value chain accounted for 60 percent of Mindanao's value added and 57 percent of employment.<sup>29</sup>

36. Mindanao's agriculture sector is dominated by smallholder farming. About 60 percent of farms in Mindanao cover less than 2 hectares (smallholders). Another 33 percent are 2 to 5 hectares (equivalent to mid-size farmers). Mindanao also has a large proportion of landless agricultural workers—estimated at over a million, or about a third of all farm workers.
37. Despite the promise of agriculture, until now a number of constraints have caused high underemployment rates and low wages in Mindanao. Limited job creation in agriculture has had economy-wide implications. Because agricultural growth has not been strong, millions of workers have turned to the informal services sector, where jobs are low-pay, low-skill, and low-productivity. Services generates 44 percent of Mindanao's economic output, but half of the jobs are informal, for example in petty retail trade, public transportation, and personal services. The picture that emerges is of workers who escaped an unproductive agricultural sector in depressed rural areas, many in conflict, and are vying for better-paying jobs in urban areas, where there are not enough such jobs.
38. Current constraints to realizing the transformative potential of agriculture relate to poor policies, investment deficits, and institutional shortcomings. Among the drivers, and causes, of poor sector performance are insecure and disputed property rights, ineffective farmer organizations, fragmented agricultural research and tenuous research-extension linkages, limited access to and low quality of agricultural services, and continued weaknesses in the devolution of services to LGUs. There are also problematic gaps in rural infrastructure, especially farm-to-market roads and irrigation systems. Access to capital is a continuing problem. Finally, there is an extensive unfinished agenda of complementary reforms, primarily relating to agricultural price and trade policy distortions.
39. Historically, a number of government policy distortions have penalized agriculture in Mindanao. Up to the 1980s, import substitution policies in support of local manufacturing kept the exchange rate overvalued. High effective protection and tax rates on agriculture significantly eroded agricultural competitiveness. High tariffs also pushed up the cost of living, as rice and other food commodities had to be sourced from within the country at higher prices rather than from nearby Sabah, where food and oil are much cheaper. Maritime cabotage restrictions and domestic shipping oligopolies, together with the lack of investment in ports, stifled trade. That was a disincentive for farmers to generate surpluses that could have been exported—a failure to capitalize on Mindanao's comparative advantage in agriculture.
40. A rural development agenda for Mindanao would need to focus on getting the basics right for smallholders, who are the majority of farmers. Smallholders can only work with large farms and connect to markets and agribusinesses if their crops are more productive. Drawing on international experiences with good practices,<sup>30</sup> to be effective a rural development agenda would need to address

<sup>29</sup> Of which 30 percent came from the farm (crops/livestock), fishery and forestry sectors (primary sector) and the balance (30 percent) from, various industrial and services sectors that add value to farm produce.

<sup>30</sup> Even in the 21<sup>st</sup> century, agriculture is still a fundamental means of sustainable development and poverty reduction, especially in developing countries (World Bank 2013). Agriculture alone will not be enough to eliminate poverty, but it has proven to be a uniquely powerful impetus for reaching that objective.

first the basic constraints on by smallholders and advocate for investing in the education and health of farming households. Together, human capital development and more secure property rights could help raise the current low returns to labor and land.<sup>31</sup> This could be the catalyst for other investment to raise productivity and, in the process, generate savings.

41. Better land security and minimum savings could help to improve access to formal credit. Responsive agricultural research, more closely connected with extension agencies, and expanded access to irrigation can improve yields and crop diversity to raise the financial returns on their limited but productive assets. At the same time, expanding farm-to-market roads (FMRs) are essential to connect farmers to markets and to become more competitive. Such interventions and enabling conditions can be delivered more efficiently and effectively if farmers are well organized. Finally, complementary measures in the farm and non-farm sectors, including simpler regulations and providing appropriate insurance and social protection that reduce the impact of shocks (e.g., weather, health, and conflict) could be part of a rural development strategy (Figure 10). For the significant number of landless rural workers, the creation of non-farm employment would be important.

FIGURE 10: Smallholders and rural development jobs strategy



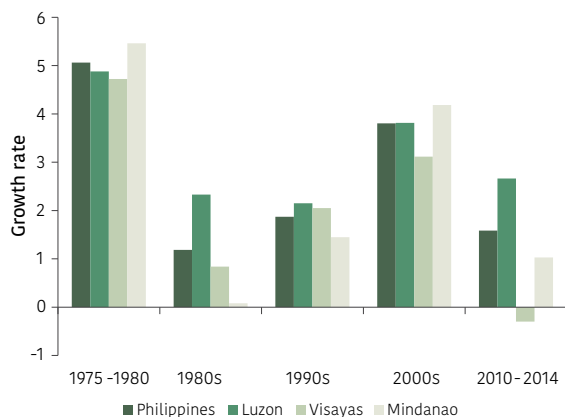
42. It will be necessary to prioritize and sequence interventions to promote higher productivity among smallholders in Mindanao. While ideally all of the ingredients of the basic rural development package will apply, some areas in Mindanao will need more support on one issue than others. Priority could go, for instance, to areas of high poverty by piloting approaches that use both national and community-driven approaches.

<sup>31</sup> The resolution of land disputes and measures to equitably secure title to land encourages economic efficiency while respecting traditional land allocation practices is fundamental to development in Mindanao. However, addressing these issues will involve difficult political negotiations (for example, land issues are an important driver of conflict). Therefore, there is a need to adopt approaches that will harmonize the technical and political dimensions of enhanced land security.

## Speeding Up Agricultural Productivity Growth

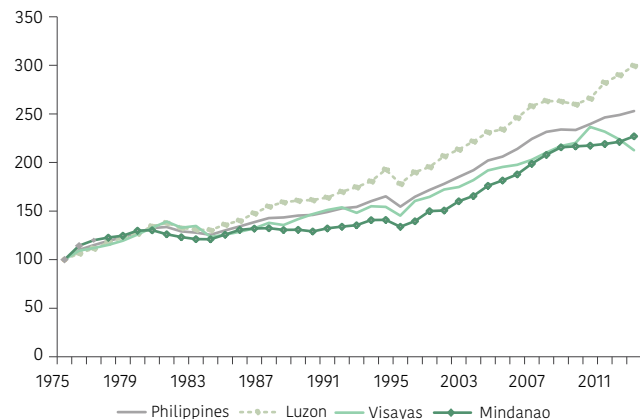
43. Despite its natural advantages, Mindanao's agricultural performance has been mixed. In only two of the five decades since the 1970s (Figure 11) has average agricultural growth in Mindanao been faster than in the rest of the country.<sup>32</sup> As a result, the increase in its agricultural value-added since the 1970s has been 36.3 percent less than in Luzon (Figure 12). Moreover, among the top five crops of the Philippines (banana, coconut, corn, rice, and sugarcane), only the first two have the highest yield in Mindanao (Figure 13). Compared to neighboring countries with similar conditions, Mindanao's agricultural productivity is low (Figure 14).

**FIGURE 11:** Agriculture value-added growth in Mindanao, 1975–2014



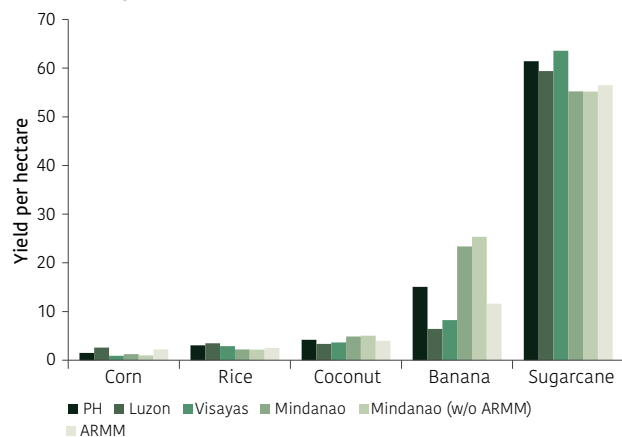
Source: PSA

**FIGURE 12:** Index of agriculture value-added, Mindanao, Luzon, and the Visayas, constant 2000 prices, 1975–2011



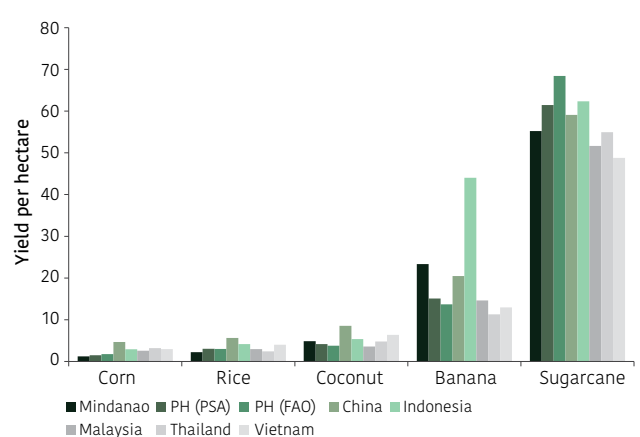
Source: PSA

**FIGURE 13:** Average productivity by crop, Mindanao, Luzon and the Visayas, 1990–2013



Source: PSA

**FIGURE 14:** Productivity by crop, Mindanao and neighboring countries, 1990–2013



Sources: PSA and Food and Agriculture Organization (FAO)

<sup>32</sup> The series begins in 1975 (earliest available data). High growth in the 1970s reflected dividends from the Green Revolution, which increased rice yields through modern varieties. The slump in the 1980s and 1990s reflected armed conflict and uncertainties arising from the impending implementation of the Comprehensive Agrarian Reform Program (CARP). Higher growth in the 2000s reflected lagged gains from more focused attention to Mindanao during the Ramos administration (1992-98) and more certainty around property rights following land distribution and implementation of agriculture venture agreements. Still, growth potential was not realized in the 2000s because of "half-baked" agrarian reform that did not provide extension service and rural public goods to farmers. In the 2010s, slower growth likely reflected exogenous factors such as climate change (e.g., super typhoon Pablo, known internationally as Bopha) and El Niño in 2010 and 2015.



## Securing Property Rights

44. Land as a core factor of production is of immense importance with serious implications for job creation. Expanded access to land provides the means to generate investments, create jobs, and raise productivity. Streamlining land governance with rational approaches is central to more fully and sustainably utilizing productive land in Mindanao. Apart from the usual problems that arise when property rights are insecure, conflict-affected Mindanao also suffers from severe land disputes that have resulted in violence. As will be discussed fully in chapter 8, two factors explain the prominence of land disputes: (1) the legacy of resettlement and land programs from the 1900s to the 1980s, which mainly affects the Moros; and (2) the magnified effects of overlapping legal systems, which largely affects indigenous people.
45. In addition to the problems caused by the protracted armed conflict, land governance in Mindanao, has several serious deficiencies. Some of the bases for property rights insecurity in Mindanao relate to (1) its unique history; (2) overlapping rights, exacerbated by unique sociogeological features; (3) the complexities of land titling and registration, title issuance, issuance of Certificate of Land Ownership Awards (CLOAs) and unregulated use of agriculture venture agreements; (4) limited access to public land for investment; (5) weak development of Certificates of Ancestral Domain Title (CADT) lands; and (6) the existence of dual land markets.

## Weak Farmer Organizations

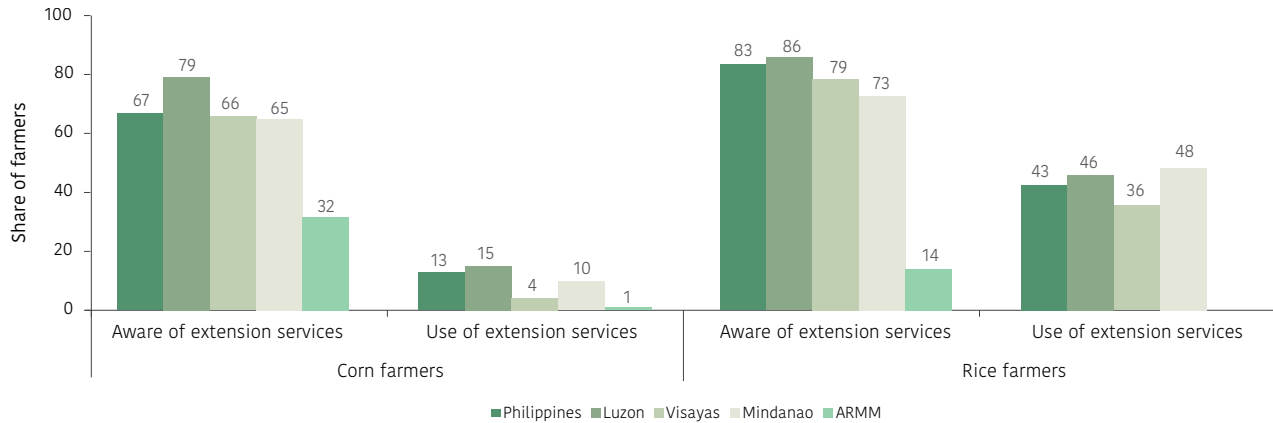
46. Farmer organizations can encourage collective action and contribute to smallholder-led agricultural transformation. However, there appear to be few successful farmer organizations in Mindanao, which may help explain why farmers and fisherfolk there are poor. Such organizations, often cooperatives, often suffer from poor governance, inadequate regulation, and lack of support from other stakeholders. Conflict makes it even harder for farmers to organize themselves because of high transaction costs, in particular between communities. The lack of organizations also limit the option of entering into agriculture venture agreements (AVA) with agribusiness firms. Without farmer organizations the reach of government lending programs is limited. To fill the credit gap, suppliers and buyers often provide financing to smallholders in exchange for lower prices.

## Research and the Extension System

47. Integrated agricultural research closely linked to enhanced extension services could do a great deal to raise agricultural productivity. That is unlikely given the current research system:
  - The multilevel organization of national agricultural research is complex and fragmented. For example, three departments (the Department of Science and Technology, DoST; the Department of Agriculture, DoA; and the Department of Environment and Natural Resources, DENR) all have roles in creating agriculture-related technology. The DoA agency coordinating research is the Bureau of Agricultural Research (BAR), but how effective it does so is questionable.
  - There is a lack of both coordination and synergy among government institutions that provide extension research and of private sector participation. For instance, the BAR and the DoST's Philippine Council for Agricultural Resources, Research, and Development could be working together to identify research priorities.

48. What agricultural research there is has rarely been targeted to practical applications in the field. Spending on research has gone up substantially since 2010 when the BAR increased its funding for national programs on rice, maize, and high-value commercial crops. However, not all of what has been budgeted has been spent, and research is largely supply-driven with little participation by the private sector in areas that could create commercial value,<sup>33</sup> and agricultural R&D expenditures are rarely monitored and evaluated. The usefulness of research might be higher if there was less focus on rice and more on other crops. More generally, research is fragmented into commodity programs; it fails to address gaps in value chains; and there is little if any effort to incorporate climate change adaptation into the research and extension agenda.
49. Extension services can help farmers to raise productivity, but they currently reach very few farmers. Extension services disseminate best practices in the use of new advances, such as high-yield and climate-change-responsive seeds, and in improved agricultural techniques. They can help farmers to diversify into higher-value crops and meet new production and environmental standards. They can also advise on possible nonfarm income sources. In Mindanao, only 10 percent of corn farmers and 48 percent of rice farmers use extension services (Figure 15). Among reasons for the low uptake are the remoteness of many farms from extension services and their lack of resources. Poor transport and communication infrastructure, not to mention conflict, hinder the effective delivery of services and the monitoring of the results and of the quality of services (see Menz, Johnson, Puerto, Predo, Carusos, and Aspera 2014).

FIGURE 15: Awareness and use of extension services, percent, 2015



Source: PSA

50. The quality of extension services in Mindanao has been questioned. The 1991 Local Government Code (LGC) devolved responsibility for frontline agricultural services to LGUs,<sup>34</sup> but fragmentation, lack of funding, and unclear guidelines and allocation of responsibilities undermined extension services.

<sup>33</sup> The BAR favors field-based research; the Council supports the research of academic institutions, which is more oriented to publication than practical applications.

<sup>34</sup> In June 1992, the extension service budget, personnel, onsite research, facilities, and other assets, previously under the DoA, were transferred to LGUs. Devolved activities were (1) services for livestock, poultry, and dairy industries, devolved from the Bureau of Animal Industry; (2) control and prevention of pests and diseases that affect farm crops, from the Bureau of Plant Industry; (3) services for fishery and aquatic resources, from the Bureau of Fisheries and Aquatic Resources; (4) services related to effective use of soil, land, and water resources, from the Bureau of Soils and Water Management; and v) establishing agricultural cooperatives, from the Bureau of Agricultural Cooperatives and Development (Magno 2001).

The mandate of national government agencies shifted from service delivery to policymaking, planning, coordination, and technical support. However, until 2004, the DoA had no platform to operationalize the LGC, although efforts have been made in the last 15 years to better deliver extension services.<sup>35</sup>

51. Many LGUs lack the financial and technical capacity to provide extension services. This prevents them from regularly training extension workers on new developments in agricultural science and technology. Technical personnel are also scarce in poorer or remote LGUs, where extension service staff often have other duties, such as collecting taxes. This problem is particularly severe in the ARMM, where just 32 coconut extension workers serve 100,000 farmers and farm laborers working on 300,000 ha. Moreover, because extension workers tend to be knowledgeable only about a single crop, such as rice, they cannot help farmers diversify into other crops. To some extent, too, extension services have been politicized.<sup>36</sup> Finally, local extension offices are autonomous, with no vertical or horizontal linkages to each other, the Agricultural Training Institute, research institutions, or public colleges and universities.
52. Higher and better-quality investments in agricultural research and development (R&D) could bring about technological changes that could support productivity growth. Improving the institutional design, spending more on R&D, and expanding R&D focus beyond rice could contribute to both the much-needed productivity growth and to the country's food security objective. However, because knowledge gained through research has little value if it does not reach farmers, it will be crucial to ensure the efficiency of education, research-extension linkages, and provision of extension services. It would also be useful to give priority to research that addresses identified gaps in promising and competitive value chains, and to incorporate climate change adaptation into the research and extension agenda.
53. The national government, led by the DoA and its regional offices, can help reinforce local government extension services and improve the coordination of agencies delivering services. For example, through the Mindanao Rural Development Project (MRDP), the DoA developed protocols and systems (e.g., cost-sharing arrangements, technical standards, and capacity building) to equip LGUs with the necessary technical competencies to provide extension services. One priority is to rationalize services spread over several national agencies. Other priorities are covering more crops and areas, supporting delivery of services by colleges and universities, building a corps of national and regional subject matter specialists to train provincial and academic faculty on extension work, and upgrading DoA regional offices to support service delivery and coordinate national and local services (e.g., road planning, training, and marketing).
54. All stakeholders need to work together to add value to extension services for farmers in Mindanao. The role of DoA regional offices in managing extension services could be supported by creating provincial interagency committees to (1) identify gaps in extension services and optimal ways to fill them; (2) reallocate scarce resources to priority crops, using the Provincial Commodities Investment Plans; and (3) reviewing budget allocations with municipal governments to ensure adequate delivery. Mindanao's universities and colleges with agricultural programs could go a great deal more by

<sup>35</sup> It was 2004 before the DoA had a framework for partnerships with local governments.

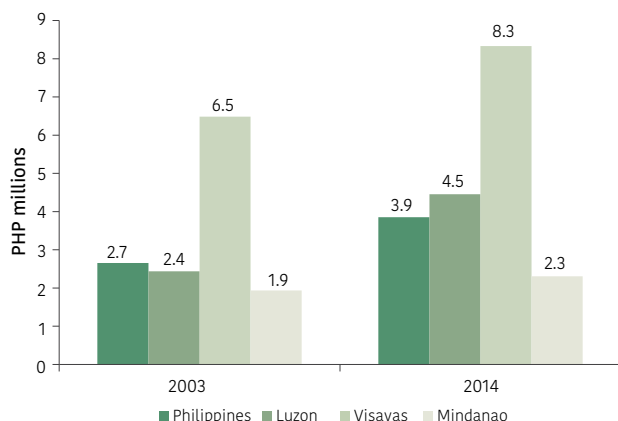
<sup>36</sup> After the devolution of extension service, the quality of service declined significantly in several areas, especially in Mindanao, as merit-based appointments were replaced by patronage-based appointments.

ensuring that all institutions with the ability to deliver extension services have a formal mandate through agreements with the Commission on Higher Education, national government agencies, and local governments. They could focus funding and human resources to support extension services that provide training in practical agricultural skills and create a future pool of agriculture specialists. NGOs, civil society organizations, successful farmer organizations, and the private sector can also help to enhance extension services through improved incentive, coordination, and participation mechanisms. For example, they could support establishment of more rural farm schools (Mindanao has only one), provide vouchers to farmers for privately-delivered extension services, and tap more productive farms to provide farmer-to-farmer mentoring and apprenticeship programs.

## Rural Infrastructure Deficits

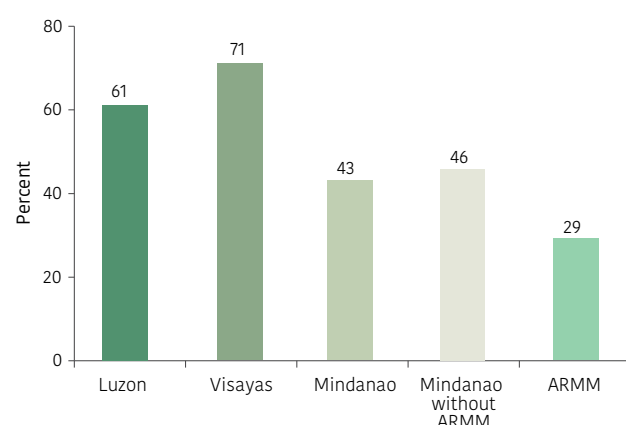
55. There is continued demand for more and better FMRs. This has been confirmed by preliminary impact assessments from the Philippine Rural Development Program (PRDP), which show robust direct benefits to farmers—not only because of reduced travel time and costs, greater trader competition, higher farm gate prices and farm incomes, and expanded agricultural services, but also because of easier access to health and educational services. Spending more to close the FMR gap, together with adequate operations and maintenance (O&M) funding, could help increase farmer incentives and profitability, which in turn could increase crop yields, diversification of crops and livestock, and farm incomes.
56. Although irrigation services now cover a wider area, irrigation in Mindanao still trails that of Luzon and the Visayas and needs more investment, especially for crops other than rice (Figure 16). Only 43 percent of Mindanao's irrigable farm area was irrigated in 2015, compared to 61 percent in Luzon and 71 percent in Visayas (Figure 17). At only 29 percent, ARMM had the lowest ratio. Dependable irrigation helps raise yields and diversification into higher-value crops, which can creates job throughout the entire value chain. For instance, in North Cotabato, moving from rainfed to irrigated rice not only doubled the yield but more than doubled the number of full-time jobs per ha.<sup>37</sup> Insufficient irrigation also helped worsen the impact of El Niño in 2015, forcing five provinces to declare a state of emergency.

**FIGURE 16:** Regional budgets (per hectare) of non-irrigated irrigable land, 2003 and 2014, PHP millions



Source: Department of Budget and Management, PSA, and National Irrigation Administration

**FIGURE 17:** Irrigation development by region, 2015, percent



Source: NIA

<sup>37</sup> Full-time job is defined as working eight hours a day, six days a week, for a total of 312 days. See Digal (2016) for a discussion of the rice jobs value chain.

Irrigated farms do not always fare better, however, because many irrigation systems have been in use for over 50 years and need major rehabilitation and repair. Moreover, insufficient O&M funding can greatly reduce the effectiveness of irrigation.

57. **The government is now allocating more funds to irrigation.** Funds are largely devoted to a more cost-efficient strategy of rehabilitation and restoration, with smart expansion to new areas near existing schemes. The 2016 budget included PHP 6.3 billion for new irrigation projects for Mindanao. The government has also been pursuing the transfer of irrigation management from the National Irrigation Administration (NIA) to irrigator associations (water users) and rationalizing NIA functions. From 2011 to 2014, new service areas covered 164,230 ha, allowing farmers to increase cropping from once a year to up to five times every two years. However, the cost of extending irrigation to all unserved areas is immense. Fully irrigating the remaining 534,000 hectares in Mindanao as of 2015 would require PHP 158 billion (1.2 percent of GDP). Priority should therefore be given to ARMM and Region XII, which have high potential but the lowest irrigation coverage. Prioritizing irrigation projects can be made more inclusive by involving farming communities.
58. **All irrigation investments need to emphasize sustainability.** As water becomes scarcer with increasing population and urbanization, it is urgent to thoroughly assess water sources. In the short to medium term, ground water irrigation needs to be developed, with the use of least-cost shallow-tube wells expanded. Deep-tube wells can be harnessed for high-value crops like vegetables, while over the long term, water-impounding systems can be developed for rice and other crops. Sustainable management will be necessary to ensure good maintenance and reduce the need for repeated rehabilitation. That will depend on allocation and timely release of sufficient funds for regular and major operations and maintenance O&M activities and incorporating climate-resilient design and features in rehabilitation and restoration.
59. **Adjusting service fees for irrigation systems could improve incentives.** Irrigation service fees should be based on the quality of the services (in the past, farmers have had to pay regardless of quality and even if the service does not reach them, unless their harvests are 40 cavans / ha or less). Abolishing the fees would reduce the funds available for O&M, thus threatening the sustainability of irrigation services and functionality of the irrigation systems (NIA regional and irrigation management offices depend on the fees to finance O&M, including salaries of most staff), and also reduce funding of the organizational development activities of irrigators associations. However, with careful discussion, access to irrigation could be maintained for the poorest farmers by providing vouchers to purchase services as a cost-sharing arrangement.
60. **Better management of irrigation is also important.** Although 96 percent of irrigation associations have O&M contracts under the NIAs irrigation management transfer program, others need to be built up so they can enter into such contracts and take a larger O&M role. This could be complemented by rehabilitation and restoration of irrigation systems. Modifying procurement regulations to allow qualified associations to procure and manage simple complex civil works (current rules only allow communities to act as project service providers) could improve delivery of services. The Government Procurement and Policy Board is currently drafting an amendment to this policy.

## Fundamental Problems Affecting Access to Capital

61. Expanded access to capital is vital to transforming Mindanao's rural areas. Capital is essential for farmers to begin planting, improve productivity, shift to high-value crops, and move up the value chain to post-harvest, processing, and marketing—all with positive impacts on their households.
62. The small scale of farms and their low productivity, together with insecure land rights, limit the access to and availability of collateral and amplify the high risks of providing financing for smallholders.<sup>38</sup> Although one-third of the economy in Mindanao is dominated by agriculture, farmers struggle to attract financing, whether informal or from banks. This largely reflects national trends where, despite mandatory lending targets and a range of initiatives to expand agricultural lending by private financial institutions, the agricultural credit portfolio has marginally declined over the past five years. Thus Mindanao as a region faces general challenges in mobilizing necessary financing from the private sector (discussed more in chapter 7). Mindanao's extensive conflict areas pose specific challenges because security risks and instability deter investors and financiers and also dis-incentivize farmers.
63. The current system of mandatory lending targets is not stimulating lending by banks to the agriculture sector.<sup>39</sup> The government could consider reforming the agricultural credit guarantee program currently operated by the Land Bank of the Philippines. The current program has limited capital and operational challenges that limit its ability to mobilize financing, especially from larger financial institutions. Crop insurance is another essential element where reform would be important. The Philippines Crop Insurance Corporation needs to expand the range of crops covered, review reinsurance options, and enhance its own financial position. Banks also need to be educated about agricultural lending, especially value chain financing approaches. Reforms on the financing side would need to be hand-in-hand with the efforts to boost productivity and improve producer capacity.

## Complementary Farm and Nonfarm Reforms

64. Complementary reforms could enhance the role of agriculture in job creation and poverty reduction. Many of these are national reforms, such as efforts to eliminate constraints on production and reduce import barriers that would have a greater impact on. For example, legal restrictions that prevent farmers from diversifying into more profitable crops need to be eliminated, such as Banana Hectare Law (Letter of Instructions [LOI] 58 of 1973 and LOI 790 of 1979), Section 36 of the Agricultural Land Reform Code (RA 3844 of 1963), and the Coconut Cutting Law (RA 8048 of 1995). If the market were left to determine

<sup>38</sup> While the share of smallholders who borrow from formal sources now comprises about 48 percent in Mindanao, about half from formal sources, they suffer credit constraints, mainly because formal financial institutions find it too risky to lend to subsistence smallholders too risky because lack of information on credit history and the credit risks of commercial smallholders prevents banks from accurately assessing qualifications for credit. Also, lending to agriculture entails high transaction costs, as smallholders are in dispersed rural areas with low population density. As a result, banks impose a number of requirements to ascertain creditworthiness, but because they raise compliance costs, they dissuade many smallholders from even attempting to borrow from banks. Guarantees could reduce risk aversion in agriculture lending. The Agricultural Guarantee Fund Pool (AGFP) is expected to encourage more private financial institutions to extend credit to commercial smallholders who are considered high-risk. But even though it can cover loan defaults, not all banks are responsive to the AGFP; large financial institutions still prefer to lend to less risky sectors where loans can be secured with collateral. The lack of insurance and reinsurance products for smallholders also contributes to bank discomfort with smallholder lending. Despite government subsidies, the Philippine Crop Insurance Corporation operating challenges contribute to the lackluster insurance penetration rate.

<sup>39</sup> Banks still prefer to use alternative modes to comply with the agriculture loan quota imposed by law, such as financing eligible securities, loans, and credit in which proceeds are used exclusively for agriculture and agrarian reform activities.



the best use of land and the most profitable crops to plant, farm incomes could soar. Also, significant investments in health, education (lifelong learning), and social protection are needed to raise human capital, which is vital for a more productive farming sector.

65. **Postharvest facilities need to be enhanced to complement directly agricultural reforms.** This calls for expanded private investment in milling, cold chains, storage, and drying facilities, with the public sector ensuring an enabling environment and effective complementary infrastructure. To a large extent, these value-adding activities will come more naturally once the basics are assured.
66. **Price distortions in agricultural products are being eliminated.** Large subsidies on seeds and fertilizers have been replaced by targeted programs to help farmers access to inputs based on private sector development approaches—although price distortions, especially on prominent commodities like rice, corn, and sugar, still prevent farmers from diversifying and raising real income, and consumers from having more food security because prices are still artificially high. But a universal rice subsidy managed by the National Food Authority (NFA), previously known for poor targeting and high costs to the budget, has been replaced by a better-targeted and more cost-efficient conditional cash transfer program. The Philippines has done a great job in still producing 90 percent of its rice requirement despite fast population growth and no comparative advantage on rice. Now is the time to balance the policy of rice self-sufficiency with the more important policy of food security so that *all* Filipinos can benefit.
67. **Further removing import barriers to agricultural goods would help reduce prices for consumers—including many farmers who are net food buyers.** Replacing the import quota for rice with an appropriate tariff would offer adequate incentives to rice farmers, discourage the currently wide illegal importation of rice, and promote agricultural diversification. The government could remove any remaining limits on private imports on rice, and the NFA could concentrate on building up stocks to buffer emergencies and on disaster mitigation programs. Simulations demonstrate that moving away from quantitative restrictions and reducing tariffs would lower rice prices and significantly reduce poverty.<sup>40</sup> The benefits of rice reform would be larger in Mindanao than in the other island groups because so many more of its people are poor. Finally, reducing tariffs on other food products, such as corn (35 percent), sugar (50 percent), poultry (40 percent), pork (30 percent), and flour (10 percent) would also ensure greater food security for the poor.

<sup>40</sup>

Eliminating the import quota on rice would lift 424,000 people out of poverty. Converting the quota into a lower tariff of about 25 percent would lift 647,000 people out of poverty. On the other hand, a more restrictive quota would raise rice prices by 10 percent and push 393,000 people into poverty. These estimates are based on data from Cororaton, Clarete, and Sharma (2013).



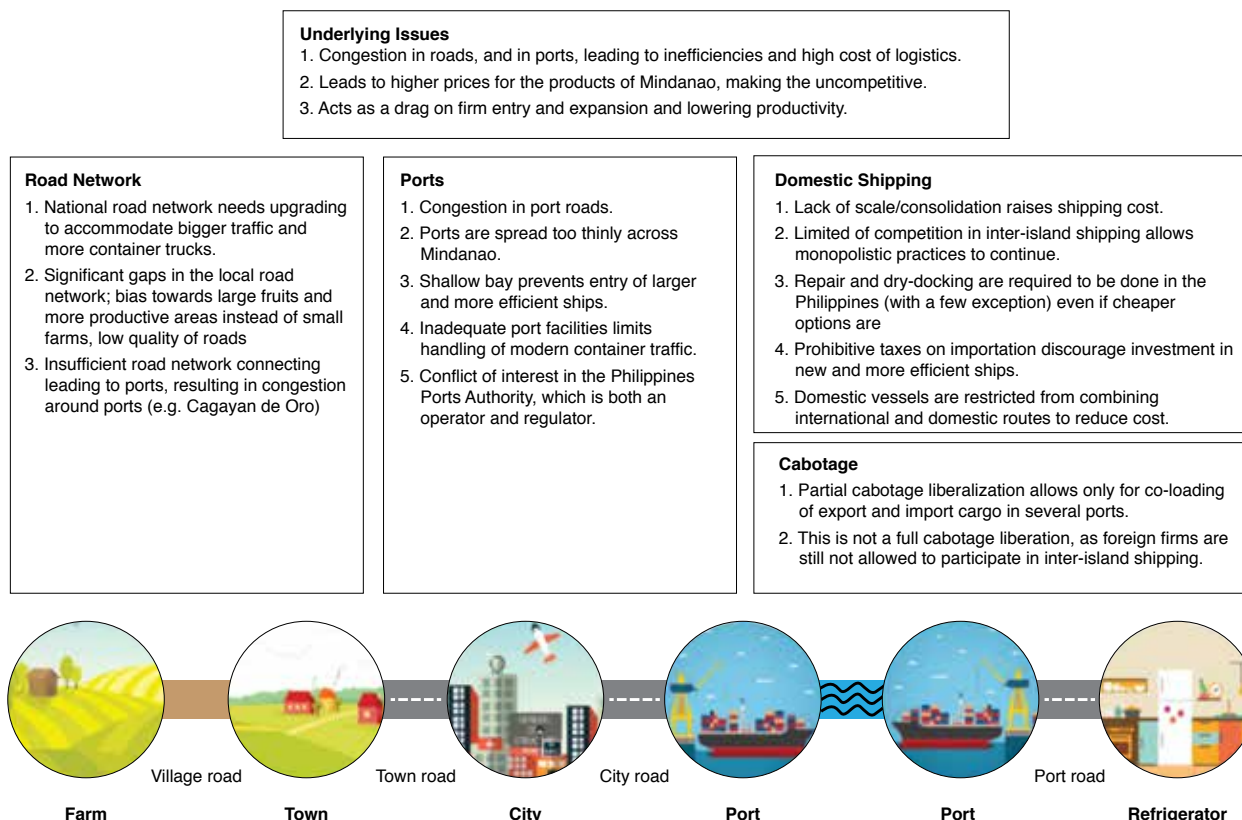
## BUILDING UP LOGISTICS<sup>41</sup> AND TRANSPORT CONNECTIVITY

68. Lowering logistics costs would benefit Mindanao's agriculture value chains significantly. An efficient logistics system is essential if Mindanao's potential to become a global supplier of basic and value-added produce is to be unleashed. Ensuring a seamless logistics network from farm to markets will entail (1) connecting farms to towns by investing in village roads; (2) connecting towns to ports by investing in major roads; (3) promoting competition in the domestic shipping industry; (4) liberalizing cabotage; (5) modernizing the major ports; and (6) streamlining export and import procedures. Because the logistics chain is only as good as its weakest link, partial reforms will not lead to lower prices and better service. For instance, reforming domestic shipping and cabotage without modernizing ports and improving the roads will not lower shipping cost; shipping lines will not upgrade to larger ships to increase scale if cargos movement will still be delayed on the road and at the port.
69. Improving connectivity from farm to market would have numerous positive effects on development. Without that farmers must deal with higher input costs and lower prices for their produce. Because they few marketing options, their lack of bargaining power further reduces prices. Poor roads may also limit access to extension services, and lower the quality of the produce that does reach markets due to multiple handling required by the need to use for a single shipment a variety of transport modes, from animal-drawn carts to truck. Thus, poor connectivity reduces both the scope of farmers to diversify into higher-value perishable crops and their ability to invest in productivity or quality improvements. Without good roads, much produce is wasted because transporting it would lead to a loss.<sup>42</sup> Improved connectivity also benefits rural societies more generally by facilitating the entry of social services to villages and encouraging higher school attendance. In fact, in the Philippines, road investment complemented by education investment has a significant direct and indirect impact on the welfare of the poor (for an extensive discussion see Balisacan and Pernia 2002). Agro-enterprises

<sup>41</sup> This section draws in part from Tanjangco and Galang (2016).

<sup>42</sup> For example, around Mindanao, coconut water is dumped to lighten the coconuts carried by horses or people. In Sulu, because of poor roads and the high cost of shipping, many fruits are left to rot on farms despite high urban demand (e.g., mangosteens).

FIGURE 18: Farm-to-market logistics issues in Mindanao



with limited connectivity have higher costs for collecting produce, higher physical and product quality losses, and thus greater difficulties in achieving the scale required for efficient use of processing facilities. Consumers relying on these producers are confronted by higher food prices, reduced scope for dietary diversity and good nutrition, and increased exposure to food safety risks.

## The Importance of Rural Roads

70. Many small farms are not well connected to markets. In 2010, 26 percent of rural *barangays*<sup>43</sup> in Mindanao—45 percent in the ARMM—were not connected to a national road (Figure 19), a much higher proportion than in Luzon or the Visayas. Given Mindanao’s mountainous terrain, there is also a higher share of similarly affected *sitios*.<sup>44</sup> Moreover, some 22,491 meters of bridges need to be rehabilitated. There is a high correlation between a *barangay*’s lack of access to a national highway and municipal poverty; a 1 percentage point increase in the percentage of *barangays* with no access to a national highway is associated with a 0.2 percentage point increase in the incidence of municipal poverty.<sup>45</sup> Poor village roads in Mindanao lead to higher transportation costs and losses of up to 2.5 times more than if the roads were in good condition. For example, the difference between good and bad roads

<sup>43</sup> A *barangay* (village) is the smallest political unit.

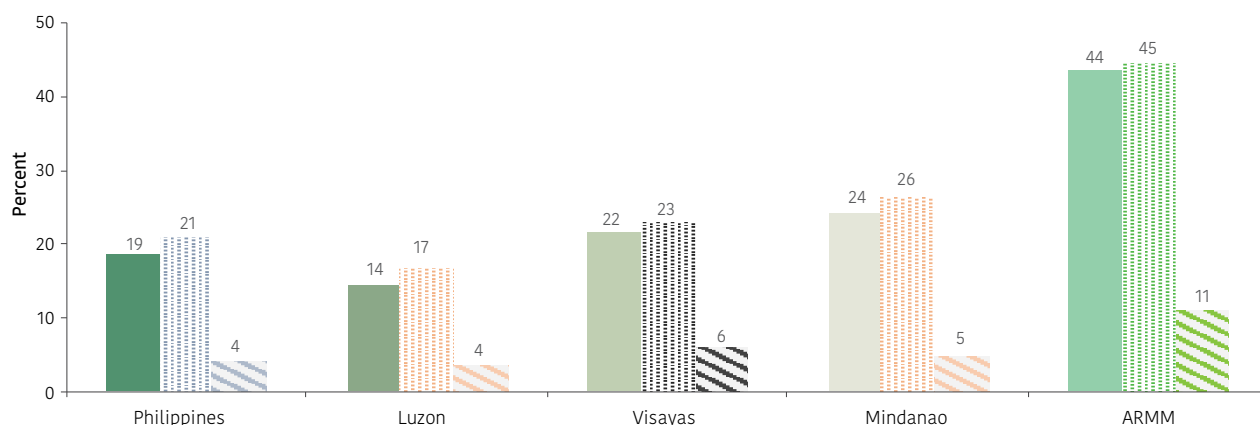
<sup>44</sup> A *sitio* is a small, usually remote part of a rural *barangay*. There are no data for sitios.

<sup>45</sup> This finding is based on a double log regression with regional dummies and a control for altitude. The dependent variable is the 2012 incidence of municipal poverty and the independent variable is the 2010 proportion of *barangays* in a municipality with access to a national highway. This negative relationship is consistent (and significant at 10 percent) at the regional level, except in ARMM, which has the reverse sign but is insignificant.

is associated with costs of 20 to 27 percent higher for Cavendish bananas in Davao del Norte and 140 percent for rice in North Cotabato. Similarly, farmers in the municipality of Senator Ninoy Aquino in Sultan Kudarat province can only transport two to three sacks of coffee to market per trip using motorcycles or horses, compared to 116 sacks using a seven-ton truck if good roads were available.

71. Though in the past few years various programs have made more funds available for road construction, there is still a lack of broad planning and coordination between programs. Also, current annual budget allocation processes often allow only short segments of roads to be rehabilitated or upgraded.
72. Clear technical allocation criteria for rural road construction in Mindanao is crucial. Allocations based on production criteria (Visual Soil Assessment score, absolute yields in metric tons, or total farm size) favor high-yield areas and farms that are well-connected to supply chains, such as bananas in Davao del Norte, oil palm in Maguindanao, and pineapple in South Cotabato. By contrast, allocating road funds on the basis of equity would favor areas of high poverty incidence, areas where more *barangays* are not connected, and areas that are populated by indigenous peoples, such as Mt. Matutum in South Cotabato, where they grow Arabica coffee, and Bukidnon, where they grow vegetables, cassava, and coffee. The Philippine Rural Development Program is exploring tools to better identify rural roads, such as satellite mapping and crowd-sourcing technology to provide detailed roadmaps down to the village level, which can be overlaid with poverty and production maps to evaluate the criteria used in road funding allocations. Uploading these maps on public websites and posting them in all provincial, municipal, and *barangay* halls significantly improves transparency in village road allocation. The Mindanao Development Authority can take the lead in coordinating this reform. The efforts at increasing transparency should be complemented by incentives, such as using matching grants and requiring solid network plans before funds are released.

FIGURE 19: Rural Barangays not connected to a national highway, by region, 2010, percent



Source: PSA

## The Need for Management Reforms and Resources

73. Because there are different funding sources for village roads, effective coordination and a central inventory system is needed. Responsibilities for national, provincial, city, and municipal roads are clearly defined by law, but providing village roads is more complex because of different approaches and funding sources, such as regular FMRs, PRDP FMRs, bottom-up budgeting, and even some LGUs. Both top-down (based on plans) and bottom-up (based on community demand) approaches are used to determine road needs. This complexity could be relieved by better coordination between government agencies and establishing an inventory system for all roads in Mindanao. LGUs will need incentives to encourage better planning and resource allocation for road construction. They will also need technical support in conflict-affected areas, which often lack the personnel and skills required to deliver basic services.
74. As the budget envelope increases, the government can begin a sub-village road investment program to connect *sitios* with a population of at least 500 to a main road. On average rural *barangays* in Mindanao comprise seven *sitios*. Assuming that 60 percent of *sitios* are not connected to any other road<sup>46</sup> and each requires a simple 2 km one-lane road, the estimated cost of connecting all *sitios* is PHP 172 billion (1.3 percent of GDP). Connecting remote villages in areas affected by armed conflict can help to minimize the grievances that help sustain the insurgency. However, a broader rural road network needs to also consider that some communities, including those of indigenous people, may not wish to be connected to the outside world. Building roads in areas under the effective control of armed groups might also be a challenge that will demand exceptionally close coordination.
75. In some cases, alternatives to roads are needed, which would require relaxing procurement regulations to allow nonstandard community procurement. Given Mindanao's mountainous terrain and numerous reserved areas, building village roads may not always be feasible. In such cases, alternative means of transport, such as horses, cable lines, and pathway clearing, could suffice.<sup>47</sup> For example, B'laan Arabica coffee growers on Mt. Matutum in South Cotabato need only horses to bring upland coffee down to the consolidation center in the midland, but need roads to connect the midland to the town center of Polomolok.<sup>48</sup> Similarly, market information could be enhanced by allowing farmers to procure community satellite phones (cheaper than erecting cellular towers), with which they can check market prices before deciding whether to sell.

## Defects in Urban Road Connections

76. Road transport connections to and within urban areas were poorly planned. Until the early 1990s, infrastructure funds were largely devoted to building road networks that would connect Mindanao plantations to major ports to supply Manila, Cebu, and foreign markets. Moreover, development plans were formulated for administrative regions (there are six in Mindanao) and there was no Mindanao-wide

<sup>46</sup> In Mindanao, because of their remoteness, more than half of *sitios* are assumed to be isolated.

<sup>47</sup> The slopes of many mountain farms are steeper than 18 percent, so using animals and animal-drawn carts, which are more flexible and adaptable to the terrain than vehicles, may be more appropriate than using a road. In protected forest areas, building village roads might encourage or intensify farming and encroachment.

<sup>48</sup> As assets animals can serve as collateral in emergencies (i.e., death, sickness), for school enrollment, or as payment for farm inputs, especially during crop failures.



plan. By neglecting networks within Mindanao, this planning approach discouraged intra-Mindanao trade. In recent years, however, there has been significant progress in improving the national road system. The Department of Public Works and Highways share of investment rose 30 percent in 2016, more than double the share from 1998 to 2010. Today, 79 percent of national roads are paved compared to 54 percent a decade ago, cutting intercity travel time and lifting trade and tourism. Nevertheless, right-of-way issues (reflecting insecure property rights) have slowed progress, and even less progress has been made on local roads, because LGUs have serious capacity and budget constraints. Paved road densities average 7.3 km per 10,000 square km for national roads and 11.3 km per 10,000 square km for the known<sup>49</sup> local road network in Mindanao. In contrast, Luzon has densities of 10.5 km for national and 13.2 km for local roads.

77. At present, many national road segments are hard-pressed to accommodate increasing traffic, especially container traffic, efficiently and safely. Rising congestion is particularly evident on main thoroughfares around Davao, General Santos, Cagayan de Oro, Iligan, Bukidnon, and Zamboanga, and in port catchment areas. The quality of secondary roads is also inadequate for large trucks, which soon results in road damage. It is taking years to finish major repairs and widening projects (e.g., the Bukidnon-Davao road). These problems have come at a huge cost to trade. For instance, it takes trucks 9 hours to travel the 288 km from Davao City to Cagayan de Oro, compared to an estimated 6 hours over well-maintained roads. This translates into a 33 percent tax on productivity.
78. Roads leading to ports are jammed with traffic. This is especially serious in Davao and Cagayan de Oro, where the public ports are located in the city center, where the roads are already congested. In Cagayan de Oro, port roads are narrow, construction of the planned bypass road is moving sluggishly, and large informal settlements make expanding roads difficult. The Mindanao International Container Terminal (MICT) just outside CDO is also putting pressure on the surrounding road system. The problems are similar in Davao, where traffic around Sasa and Panabo ports is severely congested during peak hours (for more discussion, see JICA 2014b), as is the Zamboanga port. To a large extent, the underlying problem is poor urban planning.

## Priorities for Improving Urban Roads

79. Among the short-term priorities for urban roads are better planning, upgrading roads in and around ports, and briskly moving forward major road projects that are underway. It is crucial that the Mindanao Development Authority (MINDA) and LGUs take the lead in coordinating all road projects in Mindanao and ensuring that they follow strict criteria based on production (the efficiency criterion) or poverty (the equity criterion). Geotagging and mapping all roads in the [openroads.gov.ph](http://openroads.gov.ph) platform would improve both management and transparency. The priority for making ports more accessible should be constructing bypass roads in Cagayan de Oro, Davao, and Zamboanga. In addition, enforcement of a comprehensive traffic management plan, which could be crafted in coordination with the MDA and affected LGUs, could speed truck movements. Finally, Faster progress could be made on major projects already underway, such as (1) the 12 km, PHP 200 million CDO bypass and access road, now nearing completion; (2) the 44.8 km north-south Davao City bypass road; (3) the PHP 5 billion Panguil

<sup>49</sup> Because village and farm roads are not recorded systematically, their true extent is not fully known.



Bay Bridge; (4) the northern Mindanao corridor highway from Surigao del Norte to Misamis Occidental; (5) the central Mindanao corridor highway from Cotabato City to Surigao del Sur; and (6) 12 missing road links around Mindanao identified by the MDA.

**TABLE 3: Estimated costs of priority urban road projects**

Infrastructure investment needs in urban Mindanao	Parameters	One-time investment (over six years)	Recurring investment	Annualized investment	
		Cost (PHP billion)	Cost (PHP billion)	Cost (PHP billion)	Percent of 2015 GDP
Upgrading current road standards		464		77	
National roads - upgrading gravel roads to concrete	1,875 km to upgrade at PHP 37M per km	69			
National roads - upgrading asphalt road to concrete	1,689 km to upgrade at PHP 35M per km	59			
Local roads - upgrading gravel to asphalt	14,533 km to upgrade at PHP 22M per km	323			
Rehabilitating all bridges with poor/bad condition	22,491 linear meters to rehabilitate at PHP 0.5M per lm	11			
Upgrading all bridges from temporary to permanent	2,117 linear meters to upgrade at PHP 1M per lm	2			
Increasing access		91		15	
Widening prominent truck routes to ease logistics	4 major routes to upgrade (ZAM-BUT, GenSan-DVO, COT-DVO, CDO-DVO)	6			
Financing projects in the pipeline	Big infrastructure projects like the Davao Sasa port modernization, Mindanao river basin flood control project, Cagayan de Oro bypass access road, etc.	85			
Raising quality			2	2	
Increasing the budget to raise overall quality and maintenance of roads	100 percent quality raising factor from estimated DPWH MOOE budget of PHP 3.5 billion		2		
Total		555	2		
Annual investment requirement				94	
Grand total over six years				566	

Sources: DPWH, PSA, and WB staff estimates

80. Depending on the resources available, the medium- and long-term program could focus on upgrading and maintaining the road network already in place. That means ensuring that all national roads made of asphalt, gravel, or dirt are concretized; expanding national roads in high-volume areas (e.g., within 25 km of a major city) to at least two lanes in each direction; building diversion roads in the major cities; setting minimum turning requirements that can efficiently and safely cater to 40-footer container trucks on national roads traversing mountainous areas (e.g., the Bukidnon-Davao road); and upgrading local roads to at least asphalt.<sup>50</sup> The total estimated costs for completing all these projects in six years (Table 3) is about PHP 565 billion (4.3 percent of 2015 national GDP), or about PHP 94 billion a year (0.7 percent). This level of spending would be similar to the spending patterns of fast-growing East Asian countries three decades ago when they were at the same income level as Mindanao.

<sup>50</sup> A few exceptions apply in mountainous areas where gravel is more appropriate.

## Shipping and High Trade Costs

81. The Philippines has higher export transaction costs than its neighbors. In the 2016 *Doing Business Report* (World Bank 2016b), the Philippines does generally poorer on trading across borders than Indonesia, Malaysia, Thailand, and Vietnam. The Philippines ranks ahead of Vietnam on processing time, but is last in terms of the number of documents required and in the cost to export. For companies operating outside the Philippine Economic Zone Authority (PEZA), exporting a 20-foot container containing 15 mt of cargo takes six documents and costs about US\$509 (PHP24,100) (including domestic logistics costs). The process can take more than 14 working days, 2 of them devoted to domestic transportation and handling. These high transaction costs particularly penalize SMEs which may lack connections with officials to speed approvals and may not be able to afford customs brokers or freight forwarders to handle processing.
82. The growth of agribusiness is suppressed by the high cost, low quality, and poor safety record of domestic shipping.<sup>51</sup> The average port-to-port cost per nautical mile in the Philippines is US\$1.47, compared to US\$0.77 in Indonesia and US\$1.36 in Malaysia.<sup>52</sup> It is also more expensive to ship domestically than internationally. The Manila-Davao route, for example, costs US\$0.97 per nautical mile (nm); the Manila-Bangkok route costs only US\$0.40. Direct ship calls from international ports to Mindanao ports are few (especially in CDO and Zamboanga), because most foreign-bound vessels go via Manila, which raises the cost of shipping to Mindanao by 30–50 percent.<sup>53</sup> As a result, logistics account for 24–53 percent of wholesale prices in the Philippines, but less than 20 percent in East Asian countries.<sup>54</sup> For the Philippines, shipping and port-handling costs account on average for 35 percent of logistics costs, 8–30 percent of the wholesale price, and 5 percent of the retail price. In Mindanao, these costs are likely to be higher.
83. The high cost of shipping in part reflects the small scale. Economies of scale in shipping are derived not from operating costs—the costs of operating a small or a large vessel do not differ much—but on the carrying capacity of the vessel. Scale in the Philippines, and even more so in Mindanao, is small because of (1) minimal consolidation at the farm level; (2) inadequate roads and postharvest facilities that hinder consolidation there, and (3) the proliferation of ports (691 ports, including 13 base ports and 107 terminal ports) that spread the market thinly.
84. High trade costs are also a function of inadequate port facilities. Except for MICT and the new Davao International Container Terminal,<sup>55</sup> Mindanao ports need significant upgrading to accommodate modern container cargo and larger vessels. Because many do not have quay-side cranes, ships must

<sup>51</sup> The Philippines trails its neighbors in various logistics performance and connectivity indices. Moreover, in 2004–2012 the country had the highest maritime casualty rate in the region (ASEAN-Japan Transport Partnership database).

<sup>52</sup> One problem with these estimates, which are averages based on available data, is that they do not compare similar products. A better approach would be to get the costs of shipping the same product for multinational companies (such as Nestlé or Unilever) that have operations in the Philippines, Malaysia, and Indonesia. This could form part of future analysis.

<sup>53</sup> Shipping directly from Davao to Hong Kong rather than Manila would save 38 to 48 percent. Similarly, direct shipping from General Santos could save 38 to 57 percent (IFC 2012).

<sup>54</sup> Although one reason for high cost of shipping in the Philippines is its geography, Indonesia, which is a much bigger archipelago, has lower unit shipping costs.

<sup>55</sup> Only MICT and DICT offer cargo-handling services as efficient as those in Manila and Cebu ports. MICT cargo-handling services meet international standards (25 box moves/hour/crane). Similarly, DICT can do 25–28 moves/hour/crane. (In both cases this assumes that containers are ready for loading, loading lists are submitted promptly, and electronic data from previous ports is accurate).

carry their own cranes, which takes up cargo space. Structural berth deficiencies prevent the ports of Davao, General Santos, and Zamboanga from installing shore-based cranes (see also World Bank 2014b). Many ports also lack conveyor belts, cold storage facilities, reefer plugs, bulk storage for grain (silos),<sup>56</sup> and other timesaving equipment, such as reach stackers and bagging machines. Berth depth is also a problem. As the world's vessel fleet is upgraded to larger ships, major ports in the Philippines must begin to accommodate deeper vessel drafts. Many ports, like CDO and Zamboanga, are already operating near full capacity, with little or no room for expansion because of their location in city centers; encroachment on port areas by shipping facilities, such as container yards; and informal settlements that have sprung up around the port. For these ports, in the long run relocation is the only feasible option.

85. These inefficiencies heighten turnaround time and hence shipping costs. On average, domestic vessels take 60 hours to turnaround in Davao and 75 hours in General Santos, compared to just 38 hours in Manila. Turnaround times for foreign berths in Cagayan de Oro, Iligan, Nasipit, Surigao, Davao, General Santos, and Zamboanga are all more than 38 hours.

### Inefficient Regulation Pushes up Costs

86. Until recently, regulations made it hard for new firms to enter the industry. Firms wishing to operate a commercial domestic shipping service had to first obtain a certificate of public convenience (CPC) and give incumbents advance notice of their market entry and an invitation to a public hearing in which incumbents could contest the feasibility of the new service. At the very least, the regulation made it possible for incumbents to process to delay the entry of a new competitor and add to its startup cost; at worst, incumbents could use the CPC process to block entry altogether. Cumbersome and costly CPC procedures and their lack of transparency also deterred new firms from entering the market. However, in March 2014 the Maritime Industry Authority (MARINA) issued new regulations to streamline the CPC process and eliminate the requirement to inform incumbents of new market entry. This has reduced CPC processing time by some 40 percent because most applications are no longer contested. A new "special processing window/express lane" has also been created to bring CPC processing down to within nine days for particular types of vessels. By halving processing time, vessels can be deployed more quickly and more profitably.
87. Regulations require that some services to vessels be done in the Philippines even though cheaper options are available elsewhere. Currently, domestic vessels must dry dock and undergo repair in domestic shipyards, unless they have an exemption.<sup>57</sup> Dry docking abroad (e.g., in China) can be up to 50 percent cheaper for large vessels (World Bank 2014a). Even if transportation time and costs are factored in, it can still be cheaper to dry dock a vessel abroad.
88. The cabotage law restricts foreign shipping companies from serving domestic routes even if they can provide better services. This prevents the creation of combined domestic-overseas routes (e.g., Hong Kong-Manila-Davao) that could reduce transshipment costs. However, the 2015 Foreign Ships Co-loading Act (Republic Act 10668) partly relaxed the restrictions by allowing foreign-flagged vessels

<sup>56</sup> Loading 5,000 tons of grain, for example, takes one day if the port has silos and 10 days without (JICA 2014a).

<sup>57</sup> Presidential Decree 1221 requires Philippine-flagged ships, even those engaged in international trade, to dry dock in the Philippines, unless they get an exemption.

to make direct calls on other Philippine ports to pick up and drop cargo, primarily in order to lower logistics costs for importers and exporters operating outside Manila and Cebu.<sup>58</sup> With the reform, the Philippines is expected to attract more foreign ships to serve secondary ports that do not have sufficient trade volumes for regular ship calls—but to ensure that these ships come, the capacity of Mindanao ports needs to be upgraded. Further liberalization is needed before Mindanao can see significant impact on prices.

89. Prohibitive taxes also discourage investment in more efficient ships. In 2012, the government clarified that firms chartering vessels need to pay value-added tax (VAT) and tariff on the value of the vessel. The previous practice was to exempt chartering from these taxes. The change makes chartering for short periods very costly.<sup>59</sup> By limiting access to the global charter market, domestic shipping companies cannot quickly adjust to changes in market demand and bring in more efficient ships.

## Agency Contributions to High Costs

90. The Philippine Ports Authority (PPA) has a serious conflict of interest. As regulator, the PPA approves and sets cargo-handling rates and other port charges (Asia Foundation 2011), but as operator, it also gets 10 percent of domestic cargo-handling rates and 20 percent of foreign. PPA also is well-placed to limit private port development to protect its own ports and operators. Recognizing the problem, the PPA is now drafting regulations to transfer full management of ports to the private sector, charging operators a fixed annual fee.
91. The proliferation of regulatory agencies further adds to external trade costs and time. More than 40 national agencies have some responsibilities for overseeing trade in the Philippines. For example, 11 different offices of the DoA set agricultural import criteria, among them the Bureau of Plant Industry (BPI) for plant products, the National Food Authority for rice and corn, the Philippine Coconut Authority, the Bureau of Animal Industry for animal products, and the National Meat Inspection Service. Products already processed for human consumption fall within the purview of the Bureau of Food and Drugs (BFAD). Export requirements are also handled by several agencies, especially for regulated products. For instance, fresh fruit exporters have to obtain clearances and permits from the DoA's BPI, the Department of Health, and the National Plant Quarantine Service. However, there is little information available and hardly any coordination between agencies; nor is it clear which clearances need to be obtained in central offices in Manila or in Mindanao local offices.
92. Many agencies have little or no presence in Mindanao, forcing traders to go to Manila or a regional center to complete the requirements. For example, obtaining a Bureau of Customs (BOC) custom client number (CCN), initial accreditation of some agencies (e.g., BFAD), Bureau of Internal Revenue (BIR) approval for an importer's customs code (ICC), or approval from the Philippine National Police to transport controlled chemical substances all require application in Manila. Moreover, the approval process in regional offices varies considerably. For exports, the processing of requirements and

<sup>58</sup> Severe port congestion in Manila in 2014 prevented imported goods from reaching Mindanao and delayed shipment of exports from there. Mindanao would not have been affected if shippers could bypass Manila.

<sup>59</sup> Vessel charters allow domestic firms to lease a ship for a specific period to test the feasibility of new routes or use new vessel types without shouldering the full cost outright. The current tax regime on vessel chartering limits the willingness of firms to charter vessels because they are highly unlikely to recover the additional taxes during the short charter period.

accreditation appears to depend on the ability of the Philippine Exporters Confederation (PhilExport) regional offices and their relationship with the BOC regional offices. In SOCCSKSARGEN (Region XII), when all documents are complete, PhilExport immediately issues a certification and the BOC regional office quickly grants approval. On the other hand, because of delays in BOC approval, in the Davao Region (Region XI), accreditation can take from a month to a year, depending on firm size (preference is given to large firms).

93. **Institutional fragmentation and inadequate food safety regulation and standards contribute to the poor Philippine SPS track record for exports.** A major problem for is the rejection of exported products for SPS reasons. Many countries, among them the United States, Australia, and Japan, regularly reject or detain Philippine produce caring pesticide residue, toxins, or bacteria.<sup>60</sup> Philippine exporters also report problems in securing timely export SPS testing results. In particular, traders are concerned about the quality of the Department of Agriculture's export and import laboratories. Upgrading these laboratories, along with improvements in quality assurance and development infrastructure, would increase the ability of exporters from Mindanao to compete and venture into new markets. The Department has identified over 170 public laboratories that lack central oversight, equipment, proper maintenance, training for personnel (in part due to weak budget incentives), consumables for testing produce, and limited compliance with International Organization for Standardization standards to achieve global recognition. There is also a lack of consistent policies to accredit private laboratories.
94. **Restrictive regulatory practices and inefficient management encourage bribes to facilitate trade.** Traders claim that they pay much more than the de jure costs to speed up the process. For example, exporters often face longer processing time if they do not pay grease money.<sup>61</sup> In 2014, the Export Development Council (EDC) conducted a survey on the cost of exporting in Manila. In 2015, the World Bank expanded its survey to CDO in Mindanao and it is now being conducted in Davao City. The Mindanao survey finds that in contrast to Manila, where corruption is minimal, Mindanao exporters have to pay more bribes to speed up transactions. Because of the limited availability of shipping, exporters would rather pay up than risk missing a shipment schedule. In Cagayan de Oro, for unregulated commodities, total de jure cost per transaction averages PHP 4,389 and total de facto cost ranges from PHP 6,575 to more than PHP 8,000. For regulated commodities, exporters reportedly have to pay about PHP 3,000 more in un-receipted costs per transaction. These findings are corroborated by anecdotal evidence from exporters.

## Policies to Lower Shipping Costs

95. **Increasing the scale of port operations could greatly reduce shipping costs.** This requires a holistic package to build better port-related road networks, modernize ports to accommodate larger and more efficient vessels, and liberalize cabotage and other barriers to competition to entice more efficient shipping operators. Trade-offs arising from cargo consolidation, such as city road congestion, can be mitigated by improving port access roads (e.g., bypass roads—see above). Two options can be considered:

<sup>60</sup> For instance, in 2010, in terms of countries with the most frequent agri-food import rejections, the Philippines ranked 13<sup>th</sup> in Japan, 7<sup>th</sup> in Australia, and 12<sup>th</sup> in the United States (Institute of Developing Economies-Japan External Trade Organization 2013).

<sup>61</sup> Examples of grease money are payments to speed processing time, minimize intentional delays, and prevent physical inspection of cargo.

96. One option is to consolidate more cargo, whether domestic or foreign, at the MICT in Tagaloan, near Cagayan de Oro,<sup>62</sup> as the gateway to all Mindanao. MICT has one of the most modern port facilities in Mindanao and has room for expansion. It is strategically located with easy connection to Visayas and Luzon. In fact, most ships can reduce costs by docking in northern Mindanao rather than sailing around the island to reach General Santos, Cotabato, and Davao on the southern coast. Recognizing its potential, Unilever, Nestle, and other firms have built warehouses and distribution centers. To making Tagaloan the gateway, it will need to expand the number of berths, invest in modern port equipment, and expand the road network considerably to efficiently connect Tagaloan to other regions—a must before firms would consider spending more on efficient trucking services.<sup>63</sup> At the same time, city diversion and bypass roads are needed to reduce congestion in Metro Cagayan de Oro, because consolidation will significantly increase traffic.
97. Another option is for Cagayan de Oro to specialize in domestic cargo while Davao specializes in foreign cargo. CDO has a clear advantage in domestic trade, and Davao has the potential to emerge as a hub for foreign trade. The Davao port system (DICT and Sasa ports) can be an international gateway because it is the largest consumer hub in Mindanao, is home to major agricultural exporters, and ships call directly to Japan, Singapore, Hong Kong, South Korea, and Taiwan. With more investment and policy reforms, Davao can become the transshipment hub for the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) region. Like the previous option, this will only be successful if complementary reforms in roads, port modernization, and shipping liberalization are pursued in parallel.
98. Consolidating domestic cargo around these ports could increase scale to the level of Manila and Cebu and reduce costs significantly. The 2016 domestic cargo traffic for the government ports of Davao, Cagayan de Oro, MICT, General Santos, and Zamboanga totaled 10.7 million metric tons inbound, slightly larger than the traffic in the Southern Luzon ports, and 6.77 million metric tons outbound. Export and import cargo in the five ports equals 8.9 million metric tons inbound and 5.4 million metric tons outbound, which is higher than Cebu's inbound cargo of 3.2 million metric tons and outbound cargo of 1.2 million metric tons. Consolidation could reduce shipping rates in Davao from PHP44,000 per container to a level closer to Cebu's PHP32,000. Moreover, larger scale would increase the availability of direct routes, further reducing costs.
99. In addition to consolidation, ports could be made more efficient and trade costs reduced, through higher investment and better regulation. The investment needs of major ports (CDO, Davao, General Santos, and Zamboanga) are substantial, so a decision on whether to consolidate the operations of the many other ports on the island would be important. Without consolidation, the investment budget will need to provide for immediate installation of quay cranes, cold storage, reefer facilities, and other equipment and facilities to reduce service time. Higher repair and maintenance budgets in PPA, Cebu Port Authority (CPA), and independent port authorities for port structures and regular dredging works would avoid more expensive rehabilitation or reconstruction work.

<sup>62</sup> Cagayan de Oro ports account for only 30 percent of total Mindanao domestic cargo.

<sup>63</sup> Consolidation and improving road network are endogenous. For example, now that there are better roads to Zamboanga, ship calls to smaller cities like Pagadian have been decreasing.



100. Getting the private sector more involved in port operations would enhance competition and improve efficiency. Privatizing ownership, management, or operation of PPA/CPA-owned ports can encourage modernization. Privatization efforts should focus on the major base ports to improve the quality of their service. Privatized services might include port management, investment in equipment, or cargo handling. At the same time, private commercial ports that complement public ports need to be supported. The private ports through which high-value processed foods and crop exports (e.g., fresh and processed fruits), tend to have better port facilities with phytosanitary treatment and testing that is not usually available in public ports.
101. Removing constraints on competition would reduce shipping costs and improve services and safety standards. Eliminating licensing requirements for domestic vessels to ship goods to foreign ports would enable local shipping companies to partner with foreign companies, which would give them access to better prices for the purchase or lease of new ships, a larger market, and state-of-the-art shipping management and information systems. Because safety standards are more strictly enforced on international routes, this would result in an upgraded domestic fleet and fewer maritime accidents. Most importantly, it would allow operators to maximize the cargo load of ships with an optimum mix of domestic and export cargo. Clarifying that the VAT tax does not apply to the whole value of chartered vessels would enable firms to lease ships temporarily to test out new routes or new shipping technology. Removing the requirement to dry dock and repair domestic ships exclusively in the Philippines would increase the competition domestic shipyards face and reduce costs for domestic shipping operators. For the largest vessels, eliminating this requirement could save up to 50 percent of dry-docking costs. And shifting port tariffs from a percentage of cargo-handling fees (which in part determines PPA revenues) to a fixed annual charge would reduce the conflicts of interest inherent in the PPAs dual role as regulator and operator.
102. Allowing foreign shipping companies to operate domestically would also enhance competition. International evidence suggests that opening up the domestic shipping industry to international competition can improve efficiency. For example, in New Zealand, freight rates dropped by 25 to 50 percent following cabotage liberalization in 1995. For certain types of cargo (mostly containerized), the cost of shipping via larger and more advanced foreign-flagged vessels is lower, while the need to transfer cargo between international and domestic vessels could be reduced. Cabotage liberalization also can increase adherence to international safety standards and good practices, introduced technological advances, and reduce the acquisition costs of new and safer vessels.
103. The legal obstacles to removing restrictions on cabotage are significant. The 2015 Foreign Ships Co-loading Act (RA 10668) allows foreign ships to load and unload import and export cargo along domestic routes after being cleared at the port of entry. This is expected to reduce costs for importers and exporters, and decongest ports. However, full cabotage liberalization would require a constitutional amendment to eliminate the restriction on foreign ownership of shipping, perhaps relegating the decision to impose restrictions to congress or the president using the biannual foreign investment negative list. A more gradual approach would begin with changes that require only executive action, such as simplifying procedures, granting more special permits, and promoting time and bareboat charters. Special permits could be given more often to ancillary and adjunct cargo and to high-impact

routes, which can help lower shipping costs and improve efficiency—two reasons that can justify the public interest criterion for special permits. Time and bareboat charters could be promoted to facilitate the access of domestic firms to better ships and more innovative foreign maritime technologies and practices. Chartering lowers the upfront investment costs for deploying better and more efficient ships, particularly those that comply with international safety standards.

## Regulation, Efficiency, and Costs

104. There is considerable potential for reducing trade costs by simplifying regulations and improving transparency. Full implementation of the National Single Window (NSW) automated system, especially for small traders on Mindanao, and ensuring the flow of government data would significantly reduce the regulatory burden on traders. Enhancing the NSW could facilitate clearances by all relevant government agencies (which now number about 42) via a single gateway/website, as would full integration of the system with the BOC declaration processing system. The government can also explore extending the DoA and BOC risk management functionality to other agencies.
105. Publishing information on all trade procedures, processes, fees, rules, regulations, and agreed performance standards would improve transparency. The Department of Trade and Industry (DTI) has launched the Philippine National Trade Repository (PNTR) for this purpose. However, many PNTR functions require enhancement, such as the commodity search function that lays out specific requirements for each type of product to be imported. Providing detailed information on export and import procedures on the BOC website<sup>64</sup> would make it possible to monitor the actual cost of trading across borders. Moreover, creating a simple, user-friendly trade portal, similar to those established in Laos and now being rolled out in Cambodia and Myanmar, would benefit traders.
106. There is also potential for eliminating redundant regulatory steps. For example, enabling BOC divisions to have access to export declarations online would make it feasible to eliminate the requirement that exporters submit a printed copy to different divisions. An online system would also remove the need for traders to travel to major cities to get approvals, thus reducing transaction costs—and opportunities for corrupt practices. Also, devolving decision making and responsibilities for logistics-related regulations to regional and port offices, while improving communications to facilitate their coordination, would reduce costs for traders in Mindanao.
107. Finally, increased resources and changes in procedures would improve compliance with quality and with SPS rules. Modern IT systems and scientific analytical techniques can be used to manage biological risks. Quality assurance gaps can be closed by introducing trade traceability and technology-enabled regulatory services to enable the exchange of SPS data with trading partners. Key reforms include (1) inventorying current bureau laboratory capacity and funding; (2) focusing efforts on improving compliance rates for key crops, e.g., reducing offshore market pest finds on Philippine bananas; and (3) analyzing data from exporters to reduce resources for inspecting compliant traders and focus on those that are high-risk.

<sup>64</sup> The DTI's Export Marketing Bureau has a general *Guide to Philippine Exporting Procedures* (<http://www.dti.gov.ph/emb/index.php/exporting-essentials-2/export-procedures>), but like the BOC website, it does not contain any cost or time standards.

# 6

## IMPROVING POWER AND ICT INFRASTRUCTURE

### 6.1 Ensuring Adequate Power Generation, Transmission, and Distribution<sup>65</sup>

108. Daily power outages are a huge cost to businesses, which consistently cite unreliable power supply, after logistics problems and conflict, as one of the three most binding constraints on investing in Mindanao. In 2015, in major cities scheduled power outages due to insufficient generation averaged three hours a day (Table 4). Occasional unscheduled shutdowns and maintenance of power plants can add up to four hours,<sup>66</sup> and transmission repairs due to bombings can take weeks.<sup>67</sup> Besides disrupting work, power outages and fluctuations can damage machinery and equipment. The total cost of power outages is huge: perhaps PHP42 billion (0.3 percent of Philippine GDP) in 2015 in Davao City,<sup>68</sup> and PHP 600 million for businesses in Zamboanga City for three months during the peak of the 2013 Mindanao power crisis.<sup>69</sup>

### Problems of the Power Sector

109. The bulk of power generation in Mindanao for about 50 years has come from hydroelectric plants built, owned, and operated by the government's National Power Corporation.<sup>70</sup> Private sector participation in power generation was discouraged by fixing hydroelectric power at a very attractive price of PHP2.9 per kwh. Since no new capacity was coming on line, the island came to rely on a collection of smaller, oil-fired generators, often mounted on barges, to meet peak demand and

<sup>65</sup> This section draws largely from Townsend (2016).

<sup>66</sup> For example, in early 2016, a seven-day corrective maintenance of a unit of the Therma South coal-fired plant in Davao City led to daily brownouts lasting three to four hours (Lacorte 2016).

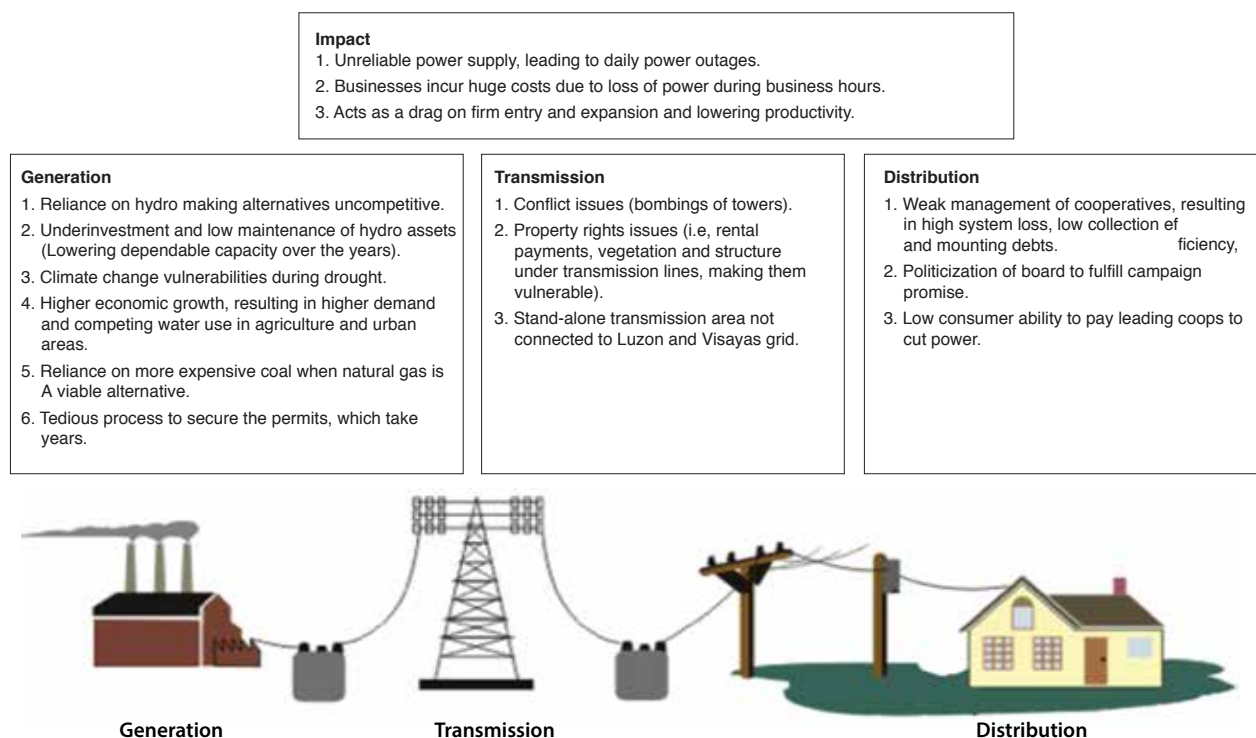
<sup>67</sup> For example, the November 2015 bombing of transmission lines in Marawi City shut out power from the Agus-1 and Agus-2 hydroelectric power plants for more than two weeks (Manar 2015).

<sup>68</sup> The chamber of commerce estimates the hourly cost of power outages at PHP 80 million, as reported in the Inquirer article by de Quiros (2016). The cost for 2015 assumes two hours of power outages a day x 260 work days x PHP80 million = PHP41.6 billion.

<sup>69</sup> This is double the amount of business tax paid by Zamboanga businesses in 2014. A major hospital spends an additional PHP 600,000 a month on generators (<http://www.zamboangachamber.com/home/articles/172--the-cost-and-effect-of-the-power-crisis-on-businesses-and-residents-of-zamboanga-city>).

<sup>70</sup> Until coal power plants began operations in 2016, state-owned hydroelectric resources plants provided about half of installed capacity, with 36 percent provided by diesel, 10 percent by coal, 5 percent by geothermal, 2 percent by biomass, and 0.5 percent by solar.

**FIGURE 20: Mindanao's power issues**

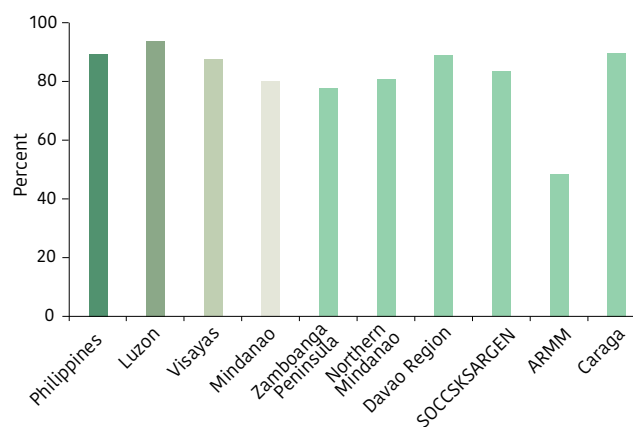


**TABLE 4: Duration of Outages in Mindanao Cities, hours per day, 2015**

Rank	City	Average hours of power outage per day (2015)
1	Marawi	7
2	Cotabato	4
3	Zamboanga	4
4	Cagayan de Oro	3
5	Davao	2
6	General Santos	1
7	Butuan	1
8	Iligan	1

Source: World Bank. 2016. MJR city level analysis

**FIGURE 21: Share of households with electricity, regions in the Philippines, percent, 2014**



Source: Annual Poverty Indicators Survey (APIS)

provide back-up during drought. Businesses addressing the issue by buying their own generators, and the government commissioned oil-fired generators to address the supply deficiencies. However, the unit cost of oil-fired power can be more than twice the cost of power from the grid, which reducing Mindanao's competitiveness generally.

110. Decades of overreliance on hydroelectric power, inadequate maintenance, and underinvestment in other power sources has limited the growth in capacity. Meanwhile, economic growth in the past decade heightened demand for power and pressure arose because of agricultural and urban

competition for water use. As a result, excess capacity during times of peak demand fell below zero. The problems reached a climax during the severe El Niño-induced drought of 2010–2011, when blackouts affected much of Mindanao. El Niño also exposed the overuse of hydroelectric resources, because little attention had been given to storing water in case of drought.

111. **Power transmission is vulnerable to sabotage and complicated by unclear property rights.** From January 2015 to April 2016, 21 transmission towers were bombed.<sup>71</sup> Repairs on half of these were impeded by landowners blocking access to the site, claiming the government had not paid rent for decades.<sup>72</sup> Many transmission lines, such as those connected to the Baloi substation in Lanao del Norte, are also vulnerable to vegetation and structures placed underneath them by landowners, presumably to extract rents by creating transmission problems.
112. **Poor management of electric cooperatives (ECs) impairs distribution.** Power distribution in Mindanao is administered through four private distribution utilities (in Davao, Iligan, Cagayan de Oro, and Cotabato); 25 ECs that are connected to the grid; and seven ECs in outlying islands. ECs and their customers have inherited a decades-old situation of bad management and counterproductive contracts, as when long-term fixed contracts have been awarded without competition. These problems are widely recognized and are often being addressed, but it will take years to clear up the situation. Even with a generation surplus that began in 2016, many areas of Mindanao may continue to suffer from power outages because of high systems losses, low collection efficiency, and mounting debts (Table 5).<sup>73</sup> More broadly, EC management and operating problems of Mindanao ECs will continue to block full development of the power sector, including efforts to achieve universal electrification; currently, despite improvements in recent years, electrification is 80 percent in Mindanao—the national average is 89 percent—and just 49 percent in ARMM (Figure 21).

**TABLE 5: Electricity problems and costs by region**

Region	Systems loss (%)	Outstanding loans (millions PHP)	Average outstanding loans (millions PHP)	Collection efficiency (%)	Number of ECs
Zamboanga Peninsula	17	637	255	92	4
Northern Mindanao	9	1120	140	98	8
Davao Region	13	383	192	86	3
SOCCKSARGEN	12	431	172	98	5
Caraga	11	804	115	99	7
ARMM	33	331	83	49	7

Source: National Electrification Administration (NEA).

Note: Data accurate as of December 31, 2015.

<sup>71</sup> Sources: <http://newsinfo.inquirer.net/756953/bombing-of-power-transmission-towers-continues-in-mindanao>, <http://www.bworldonline.com/content.php?section=Nation&title=two-ngcp-towers-in-north-cotabato-bombed&id=126271>, and <http://www.mindanews.com/top-stories/2016/04/19/two-ngcp-towers-bombed-in-north-cotabato/>.

<sup>72</sup> For instance, a damaged tower in Ragain, Lanao del Norte, which was bombed on December 24, 2015, was unrepaired for more than a month as the National Grid Corporation of the Philippines (NGCP) awaited resolution of the right-of-way issue between the landowner and Transco, the government entity that owns the transmission assets (Saulon 2016).

<sup>73</sup> Some ECs in Mindanao would like to disconnect from the grid because of collection problems. It is said that for some ECs local politicians control the board or coerce it to supply electricity free, supposedly to fulfill campaign promises. In ARMM many WX customers refuse to pay electricity bills (Antonio 2012).



## Effects of the Power Crisis

113. The power crisis led to a steep rise in power supply. Private investors have begun to build new generation facilities, mostly coal-fired plants, which should add 1,610 MW by 2020 to double the installed capacity and ensure adequate supply at least until 2023 if growth is low (DOE and MinDA 2014). Some investors have not even waited for the government to approve of power sales agreements. The increased market competition has then driven down the prices offered to ECs. While the supply response to the power crisis could rapidly turn shortages into surpluses, increased reliance on coal power raises environmental and economic risks (Box 2).

### BOX 2: The impact of coal-fired plants in Mindanao

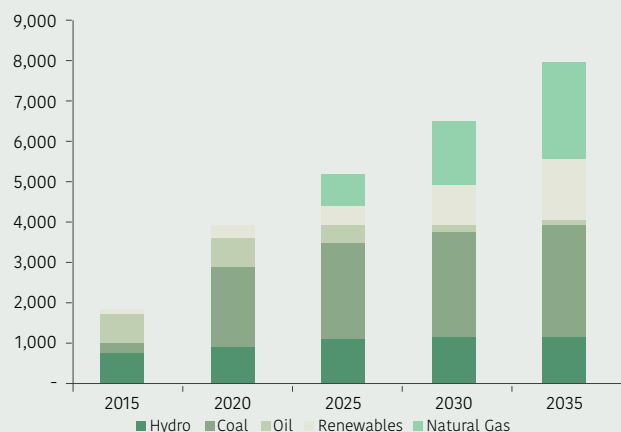
The continuing rise in coal-fired power plants raises serious economic and environmental concerns. While efficient coal plants are the least-cost approach to baseload generation in Luzon and major Asian markets, the sizes of plants to serve the Mindanao market are too small to achieve comparably low prices. Moreover, the rapid increase in capacity in Mindanao means that initially some new units will run at relatively low capacity, pushing unit costs above those of natural gas-fired plants in mid-cycle and peak operation. The coal plants will also reduce the potential to attract least-cost investments in more efficient gas-fired capacity and in renewable energy.

Heavy reliance on coal-fired plants will have severe environmental consequences. A coal-intensive business as usual case would imply a rise in sulfur dioxide, nitrogen oxides, and particulates in areas where coal-fired power plants are situated, resulting in smog, acid rain, and health concerns. In this scenario, if installed coal-fired generation should exceed 4,800 MW by 2035, CO<sub>2</sub> emissions will jump from about 2 million tons in 2015 to as much as 25 million tons by 2035. Yet by that time per capita consumption of electricity in Mindanao would still be only about half the projected national average—and one-quarter of per capita consumption in China today. Without limits on coal-fired plants, Mindanao's CO<sub>2</sub> emissions would amount to 21 million tons per year, compared to only 6.3 million tons if Mindanao is to make a proportional contribution to the Philippines Paris conference commitments for carbon emissions.

Aggressive policy actions could encourage greater reliance on natural gas and renewables. A scenario that assumes increasing inflows of climate investment funds to support renewables, using coal only for efficient baseload operations, introducing more power generation from natural gas, and retiring existing oil-fired capacity could substantially reduce CO<sub>2</sub>-emission to about 16 million tons per year by 2030 — still much higher than the Paris commitment and underscoring the fact that the coal build-out underway now will lock in emissions for years to come.

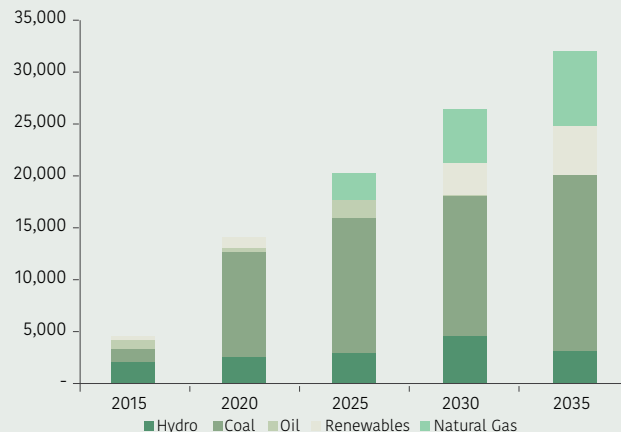


**FIGURE B.2.1: Mindanao capacity additions, MW, 2015-2035**



Source: Townsend 2016.

**FIGURE B.2.2: Mindanao Energy Output, GWh, 2015-2035**



114. The government, with MinDA leadership, has moved decisively to address Mindanao's power problems. In July 2012, the Mindanao Power Monitoring Committee was created to coordinate policy reforms and investment in new generation capacity. Some rehabilitation work is in progress at the Agus and Pulangi hydroelectric power complexes, but Agus needs more work. A web-based, one-stop facilitation and monitoring center was created to fast-track renewable energy project applications. A Mindanao power data portal was launched to monitor the power situation. In transmission, the National Grid Corporation of the Philippines (NGCP) is investing in better networks and studying the feasibility of connecting the Mindanao grid to the integrated Luzon and the Visayas grid via Negros and Misamis Occidental, where there are already broadband submarine cables. Together with the government, NGCP is also working to improve transmission tower security. Meanwhile the government is encouraging better EC management of distribution through reforms in composition of the boards, more detailed financial and management reporting, more transparency about EC credit status, and tighter but more efficient regulation—all supported by budget support for expanding electrification. These efforts have had some success. However, the attempt to establish an Interim Mindanao Energy Market (IMEM) to attract more energy supplies into the grid, did not succeed, in part because the ECs cannot afford oil-fired power.

## The Importance of Planning and Policy Changes

115. For generation, long-term supply planning should start today and bureaucratic requirements should be rationalized to speed investment. While the generation shortfall is expected to be relieved as of 2016, a deficit could return as early as 2020 if Mindanao growth accelerates and suppressed demand starts sourcing from the grid<sup>74</sup> as demand catches up with new supply. From 2015 to 2030, the Department of Energy (DOE) estimates that Mindanao needs 910 MW of new capacity<sup>75</sup> in addition to committed

<sup>74</sup> In a high-growth scenario, where peak demand increases by an annual average of 9.1 percent, the critical supply period will be reached at 2020, when 150 MW of baseload plants will be required. This will require 4,930 MW in addition to committed projects to meet peak demand and reserves through 2030 (source: DOE and MinDA 2014).

<sup>75</sup> This comprises 210 MW of baseload (e.g., coal, geothermal, run-of-river hydro, and nuclear) and 700 MW of midrange (e.g., natural gas and diesel gas turbine).

power projects.<sup>76</sup> Long-term planning is being facilitated by the MDA and DOE based on the Mindanao Energy Plan 2014–30. This could be facilitated by rationalizing the complex bureaucratic procedures for building a generating plant. According to DOE, it takes on average of three to five years before a power plant is put up, in large part because LGUs (LGUs) take so long to issue the necessary permits. Over the medium term, Mindanao could expand its generation portfolio to cheaper and cleaner power sources. For example, rural and off-grid electrification could be enhanced by investing in solar energy, supported by feed-in-tariff subsidies, and a public-private partnership could be established to develop a floating terminal for liquefied natural gas. The government has identified the area around the Phividec Industrial Park, which hosts the MICT, near CDO as the least-cost location for such a terminal.<sup>77</sup>

116. Amendments to policies and regulations could greatly strengthen the power sector. Greater private sector development of least-cost energy sources could be encouraged, for example, by restructuring the Agus and Pulangi hydro contracts and operating protocols to bring prices up to where they would reflect the true economic value for mid-cycle and peaking requirements in Mindanao. This policy would lay a firm foundation for investments in least-cost generation to ensure that there is enough reserve capacity to carry Mindanao through droughts. Diversifying Mindanao's energy mix to cleaner and more sustainable sources over time would free up scarce water to irrigate farms and supply growing cities. With a sustained surplus within reach, a wholesale electricity spot market could be established in Mindanao, which could make power rates more competitive. Increases in power generation would have much more economic impact if steps are taken to protect power system assets from sabotage; to improve management of ECs (depoliticizing the boards and privatizing some ECs that could be better managed by the private sector, leading to greater accountability and a more results-oriented design for electrification subsidies; and to encourage distribution companies to optimize the portfolio mix of coal, natural gas, large hydro, and renewables through more competitive procurement of power. In the absence of competition, the Energy Regulatory Commission (ERC) needs to avoid approving expensive power supply agreements. Finally, subsidies to poor consumers (lifeline rates) could be enhanced by better targeting and more transparency.

## 6.2 Creating Internet Services<sup>78</sup>

117. Efficient and affordable Internet service has the potential to transform Mindanao, as it has transformed Manila. Telecom liberalization in the 1990s paved the way for the IT business process outsourcing (IT-BPO) industry,<sup>79</sup> one of the main drivers of growth in the Philippine economy. In 16 years, the industry, centered in Manila, has created over a million direct and five million indirect jobs in real estate, construction, finance, telecoms, and trade. Through strong multiplier effects, it contributes some 10 percent of GDP. It is now expanding aggressively to secondary cities; Davao has emerged as

<sup>76</sup> As of 2016 aggregate capacity of committed power projects was 1,854 MW—1,610 MW of coal, 16.7 MW of oil-based, 131.8 MW of hydro, 55 MW of biomass, and 40 MW of solar (MinDA 2016).

<sup>77</sup> This location has vacant land for an anchor power plant, access to power transmission capacity, benign marine characteristics, and concentrated industrial demand.

<sup>78</sup> This section draws mainly from Mirandilla-Santos (2016a).

<sup>79</sup> The Philippine IT-BPO industry includes contact centers, back office services, data transcription, animation, software development, engineering development, and game development. Since 2000, it has grown at exponential rates. In 2015, it employed over 1.2 million workers and generated US\$22 billion in revenues.

Mindanao's IT-BPO hub,<sup>80</sup> and CDO is identified as a potential destination. In 2015, there were 104 IT-BPO firms in Davao and Cagayan de Oro, with total employment of 35,389. Other major cities, such as General Santos and Iligan, are marketing themselves to attract IT-BPO firms.

## Internet Negatives

118. Not only is Philippine internet speed among the slowest in the region and the most expensive in the world, it has very little value for the money (Figure 22).<sup>81</sup> Moreover, there is no guaranteed speed, and quality is worse in Mindanao than in Luzon because of latency problems because traffic has to be routed to Manila and back to Mindanao, jitter, and packet loss.<sup>82</sup> Internet speeds in Mindanao are much lower than in the rest of the country and significantly lower than in Metro Manila (Table 6).<sup>83</sup> In cities in Mindanao, average Internet speeds range from 141 kbps in Marawi<sup>84</sup> to 2.4 mbps in Cagayan de Oro, compared to 3.6 mbps in Makati.<sup>85</sup> It appears that Davao users have to pay about 1.5 times more to get the same speed as Makati, and Marawi users have to pay 26 times more. A dedicated line can cost up to 20,000 per month for each addition 1 mbps of speed, compared to PHP 700 for a residential line with no speed guarantee.

**TABLE 6:** Average internet speeds in major Mindanao cities

Rank	City	Average download speed (mbps)
	Makati City	3.6
	Quezon City	3.5
	Cebu City	2.6
1	Cagayan de Oro	2.4
2	Davao	2.2
3	Iligan	2.1
4	Zamboanga	1.6
5	Butuan	1.3
6	General Santos	1.3
7	Cotabato	0.5
8	Marawi	0.1

Source: [www.testmy.net](http://www.testmy.net)

119. Should Internet services improve, there is considerable potential for the growth of IT-BPO firms in Mindanao. In 2012, about 60 percent of IT-BPO firms in Mindanao had fewer than 20 employees.<sup>86</sup> The Davao ICT Council suggests that IT-BPO jobs could easily double by 2019 if Internet and skills constraints are addressed. Many individuals have found Internet-based self-employment ("e-lancing").<sup>87</sup> For instance, Iligan has no IT-BPO firms but has the second largest e-lancing industry outside Metro Manila, earning PHP 342 million from 2010 to 2014 (see also Garcia 2014). Even cities in conflict-affected areas like Zamboanga, Marawi, and Cotabato could benefit from IT-BPO services. For instance, Cotabato

<sup>80</sup> The 2015 Tholons top 100 outsourcing destinations in the world ranked Davao 69th among 100 cities. Davao is also in the 10 "next wave" cities for the IT-BPO industry. This recognition has already helped it attract a number of large IT-BPO firms.

<sup>81</sup> Measured as the ratio of actual download speeds to the cost of the monthly data plan. See Mirandilla-Santos (2016a) citing Akamai state of the internet report, LIRNEasia, and TechInAsia.

<sup>82</sup> *Latency or round-trip time (RTT)*, usually measured in milliseconds, is the amount of time needed for a data packet to reach its destination. The more "hops" or stops the data packet makes, the longer the RTT. This affects applications such as voice over internet protocol (VoIP) and online games. *Jitter* is the fluctuation or variation of end-to-end delays from one packet to the next. Commonly referred to as "noise," it usually impacts real-time traffic such as VoIP. *Packet loss* is the percent of data packets that do not reach their destination.

<sup>83</sup> In the absence of official data, a third-party website (<http://testmy.net>) was used to collect Internet speed. Individual speed test results from each city are averaged. This method depends on the plan of each user who conducted the speed test. The plans are assumed to be fairly similar.

<sup>84</sup> Residents of Marawi have to go some 38 km to Iligan to send large files.

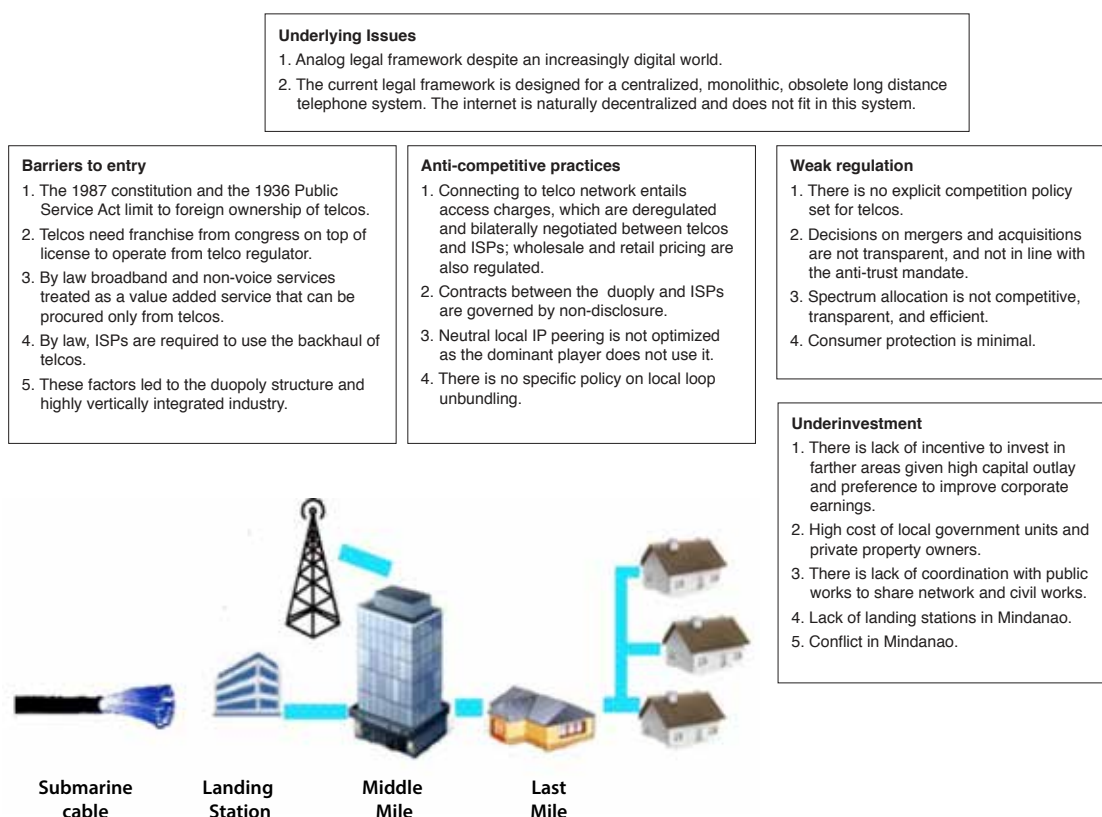
<sup>85</sup> Source: [www.testmy.net](http://www.testmy.net). 2012 is the latest data.

<sup>86</sup> Source: 2012 Census of Philippine Business and Industry.

<sup>87</sup> This refers to selling services to employers without a long-term commitment using online technology.

and Marawi have substantial Moro populations with some knowledge of Arabic, which could attract the Arab market. However, only one BPO firm set up office in 2011 in Cotabato, and it closed down after a year because of unreliable Internet and power supply, and lack of skills. Similarly, Zamboanga, whose people speak a Creole Spanish, Chavacano, could attract the Spanish market, but only three small BPO firms have set up operations, and one has now closed. The local ICT council cites poor Internet quality as a major constraints. The situation in Zamboanga is so bad that the two remaining BPOs and perhaps other major firms have to subscribe to two Internet service providers (ISPs), paying double to ensure a reliable connection.

FIGURE 22: Mindanao's internet policy and investment deficits



## The Value of Increasing Competition

120. In the Philippines the Internet is essentially a duopoly. Both the fixed and the mobile broadband markets are dominated by two players, one with 70 percent of the market and the other 28 percent. Both are vertically integrated: they control the international gateway facility (landing station for submarine cables), the backhaul (domestic cable backbone), the middle mile<sup>88</sup> (wholesale line), and the last mile (retail line<sup>89</sup>). This is in sharp contrast to the open access models found in other countries,

<sup>88</sup> The middle-mile transit is the second segment in the telecom structure, in which data from international gateways or landing stations are distributed for in-country transit.

<sup>89</sup> The duopoly typically allows small independent ISPs to serve new markets or missionary areas, but once the market matures, they often enter with predatory pricing to gain market share.

where different players operate different segments. The global best practice, full open access, is found in the United Kingdom and Singapore. Though other countries have varying degrees of open access, none is as vertically integrated as the Philippines.

121. Competition is deterred by the analog legal framework for the Internet, which has not caught up with the digital world.<sup>90</sup> The analog framework is based on a centralized, monolithic, and obsolete long-distance telephone system to govern the naturally decentralized Internet, which does not fit in this old system. The obsolete system encourages high barriers to entry, anticompetitive practices, weak regulation, and underinvestment in infrastructure.
122. The 1987 Constitution and the 1936 Public Services Act limit foreign ownership of telecom companies to 40 percent, even if the sector, being capital-intensive and technology-driven, could benefit from foreign participation. The 1936 act requires telecom companies to secure both a congressional franchise (even if some services do not directly serve the public) and a license to operate from the National Telecommunications Commission (NTC). Securing a franchise is a cumbersome and protracted process that dissuades new players from entering. The 1996 Telecoms Act, enacted on the eve of the Internet era, mandates that while certain value-added services such as data/Internet and related services may be provided by entities that are not franchised public telecommunications entities (PTEs), but NTC rules still require that non-PTE value-added services ultimately purchase Internet connectivity from PTEs. These services are not regulated. Moreover, only telecom companies can purchase data from international gateway facilities and distribute bandwidth. The law also requires ISPs to use telecom company infrastructure, and prohibits ISPs from building their own networks. The outcome? A duopoly structure that is highly vertically integrated. At the retail level, duopoly dominance has led to a substantial decline in the number of ISPs, from about 300 in the 1990s to just 10 in 2014.
123. The highly vertically integrated industry in the Philippines breeds anticompetitive practices, especially in Mindanao, where prices are highest and the speeds slowest. By law,<sup>91</sup> ISPs must use the backhaul network of telecom companies, and this entails access charges, which are not and negotiated by the telecom company and the ISP. Wholesale and retail pricing is also deregulated. This in effect authorizes the duopoly to charge monopoly prices and provide low quality service. Reportedly, some telecom companies charge exorbitant rates and their contracts have non-disclosure clauses. For example, according to industry observers, landing station bandwidth that costs US\$3 to 6 per mbps (if buying at least 1 gbps) are reportedly sold by telecom companies for US\$20 to US\$105 in Manila and up to US\$200 in Mindanao.<sup>92</sup> Moreover, unconditional Internet protocol (IP) peering, which allows customers from different ISPs to exchange local data traffic without leaving national borders, is not a universal practice even though the DoST has established neutral local IP exchange by the Department of Science and Technology (DoST). This is because the dominant player refused to engage in neutral, multilateral, and settlement-free peering with other telecom companies and ISPs, preferring instead to negotiate bilaterally negotiations and charge a fee to connect to its system. This further slows Internet speed, as data need to take a circuitous route halfway around the globe and back. Finally, there is no

<sup>90</sup> For more discussion, see World Bank (2016c).

<sup>91</sup> RA 7925 Art. IV, Sec.11.

<sup>92</sup> Anecdotal evidence from the Federation of International Cable TV and Telecommunications Association of the Philippines as cited in Mirandilla-Santos (2016a).

specific policy for local loop unbundling where incumbents give competitors access to their networks. The end result is that the duopoly pair are among the most profitable telecom companies in the world, with EBITDA<sup>93</sup> margins of 40–45 percent for the past few years.

124. The poor regulatory regime makes it difficult for the government to protect the interest of consumers. There is no explicit competition policy for telecoms; decisions on mergers and acquisitions are not transparent and do not conform to the antitrust mandate in RA 7925 and Executive Order 546;<sup>94</sup> spectrum allocation is not competitive, transparent, or efficient; and consumer protection by both the NTC and the DTI is inadequate in both form and substance. The lack of regulations to protect consumers has encouraged opaque, unilateral data usage caps set by the duopoly. To a large extent, obsolete laws (e.g., RA 7925) have rendered many provisions and penalties useless. For instance, telecom companies would rather pay the fine of PHP 200 per day than comply and lose monopoly profit.
125. Underinvestment in fiber optic cables and cellular towers, especially in Mindanao, has exacerbated Internet service problems. Civil works account for about 75 percent of the cost of a fiber optic corridor, and cellular towers can easily account for 50 percent of capital expenditure and some 60 percent of operating expenditure. Still, telecom companies prefer to prioritize raising corporate earnings over investing in remote areas like Mindanao. These problems are exacerbated by agency bureaucratic requirements (some LGUs are said to demand informal payments), demands from private property owners, and a lack of coordination with public works projects to share the network and the cost of civil works. In Mindanao, lack of competition translates to lack of interest in investing in a small market. For instance, apart from the backbone and the middle mile, Mindanao would benefit from its own landing station in Davao (the site identified by one of the duopolies) or Parang (the site identified by the BIMP-EAGA Submarine Terrestrial [BEST] Cable Project), but there are few incentives to encourage this. Moreover, even with additional landing stations, bringing that connectivity inland and distributing it across the region will be difficult, given the duopoly structure of Internet service delivery. Finally, because ICT infrastructure has to traverse rural areas to reach cities, it is readily sabotaged. This problem is quite severe in Cotabato, Zamboanga, and Marawi, where cellular towers have been bombed.
126. A series of coordinated national policy reforms is needed to reduce Internet cost and improve speed in Mindanao. The Philippines needs an updated digital strategy and a national broadband plan that emphasizes lagging areas like Mindanao. The strategy could identify policy reforms to lower cost and increase speed. The DICT can lead this initiative, with significant inputs from the private sector, the IT-BPAP, academia, and national and regional ICT councils. The MDA could begin coordinating with stakeholders to ensure that the strategy and plan capture Mindanao's ICT needs. It could also draft a Mindanao-wide broadband plan as input to the national plan.

<sup>93</sup> This refers to earnings before interest, taxes, depreciation, and amortization.

<sup>94</sup> "Creating a Ministry of Public Works and Ministry of Transportation and Communications" issued in 1979. For example, the dominant market player purchased a majority share in a competing company in 2011, which was approved by NTC as the final decision-maker in mergers and acquisitions. However, in its decision to approve the merger, no official documentation, such as position papers or comments by parties opposing the decision, was made available for public review. The NTC simply said it used public interest as the criterion for approval, without defining what in its view constituted public interest.



127. The legal framework must be changed to spur competition through open access. A first-best solution would be to amend the 1987 Constitution to remove the restriction on foreign ownership of public utilities and relegate this power to congress, where in light of new developments liberalization can be discussed more openly. If constitutional change is not feasible, a second-best solution would be to amend the 1936 Public Services Act and 1995 Telecoms Act to (1) remove the need for congressional approval to operate landing stations and the middle-mile backbone; (2) delink telephone and Internet services; (3) “unbundle” the industry to allow access of infrastructure and services separately;<sup>95</sup> and (4) limit the scope of public service to the retail stage, as is done for the power sector.<sup>96</sup> These changes would open up ownership of infrastructure and service delivery to greater competition by addressing negotiated pricing and nondisclosure agreements, which would in turn reduce access charges. Next steps to level the playing field would be for the government to (1) support open and neutral Internet exchange points like the Philippine Open Internet Exchange to allow more local peering; (2) establish a clear policy on local loop unbundling so that competitors can access the networks of incumbent operators; and (3) promote sharing the costs of infrastructure networks and civil works to encourage telecom companies to invest more.
128. Changes in the legal framework would be more effective if complemented by improvements in regulatory oversight. To ensure compliance, the new Philippine Competition Commission (PCC) and the NTC could be more proactive. Priorities for the PCC could be to (1) establish a clear competition policy for telecom companies; (2) review market structure and address any antitrust violations; and (3) enforce sanctions as needed. The NTC could set clear guidelines on spectrum allocation and make the process more transparent and consultative. Working with the DTI Consumer Protection Bureau, the NTC could enhance consumer protection by issuing regulations and penalize ISPs that misuse terms like “unlimited” service and deviate regularly from the published Internet speed. Finally, to improve transparency and service delivery the NTC can publicize in the open data portal the performance of ISPs.

## How Cooperation Can Contribute to Better Internet Services

129. Speeding up important ICT infrastructure projects in Mindanao would lower costs and up the speed of internet services. More public-private coordination and partnerships to reduce construction costs could spur investment in fiber-optic corridors. For instance, fiber-optic laying and road projects can be done simultaneously to share civil works expense and significantly reduce cost (by about half for telecom companies).<sup>97</sup> Where there is no private sector interest, the public sector could build the middle-line during public works projects and then lease the operation to the private sector under open and nondiscriminatory access at competitive prices. MINDA could lead this initiative as part of the formulation of a Mindanao broadband plan, in coordination with various local government units and regional offices of concerned line agencies such as the Department of Public Works and Highways. In addition, while subsidies are generally not needed given strong market demand, some depressed

<sup>95</sup> “Unbundled access” refers to policies where new entrants are allowed to use the incumbent’s facilities. Currently, the two largest players in the telecommunications industry own and control most of the existing internet infrastructure. Thus, the dominant companies dictate access of internet services in the Philippines (Mirandilla-Santos, 2016a).

<sup>96</sup> At present, only telecom companies with a congressional franchise may provide middle-mile service. This has allowed large companies to engage in uncompetitive practices.

<sup>97</sup> This is in line with the proposal of the DOST ICT Office (DOST-ICTO) to embed ducting in road widening and repair projects.

areas, such as ARMM, may need subsidies to entice more investment. Also, investing in new landing stations can further improve speed and lower prices significantly. Key locations for landing stations are Davao and Cagayan de Oro, in addition to the planned landing station in Parang, Maguindanao.

130. The regional government and the MINDA could improve Internet service in ARMM, and potentially the rest of Mindanao, by facilitating realization of the BEST cable project. The BEST cable system, with Parang, Maguindanao, as landing station<sup>98</sup> will directly link ARMM to Singapore, Malaysia, and Brunei without passing through Luzon, where most international landing stations are located. Because it is autonomous, ARMM has the power to regulate Internet service within its territory. The project could lower Internet cost in ARMM significantly and enable it to leapfrog into a modern information-based economy. Reforms already discussed would enable the rest of Mindanao to benefit.
131. Cutting LGU red tape would reduce the costs of laying fiber optic lines and building cellular towers. The number of requirements and the costs, plus informal payments, add to the already very large capital expenditure these activities require. Telecom companies must also deal with right-of-way issues, which often delay projects. Rationalizing requirements, making processes more transparent, reducing unnecessary costs, and addressing right-of-way issues by advancing titling and registration reforms (see below) could attract telecoms investors, especially in Mindanao. Similarly, national governments could reduce the bureaucratic requirements associated with issuing licenses. Finally, allowing LGUs to build their own backhaul and retail infrastructure in partnership with the private sector could be promoted.

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<sup>98</sup> The franchise for this landing station is provided by the ARMM regional assembly.

## SUPPORTING PRIVATE INVESTMENT

### 7.1 Preparing for a Skill-based Economy in Mindanao

132. Despite heavy demand, skills shortages are slowing expansion of the IT-BPO industry. The Davao ICT council estimated job vacancies at 5,500 in 2015, but the industry could not fill them although every year 20,000 students graduate from college<sup>99</sup> in Davao City and surrounding provinces.<sup>100</sup> Most applicants in Davao are rejected for lack of both soft<sup>101</sup> and technical skills.<sup>102</sup> This results in a supply gap of 70 percent in Davao's ICT sector and 40 percent in Davao's BPO industry.<sup>103</sup> In CDO, this is less of a problem because the industry is much smaller here. A shortage of engineers is also affecting manufacturing, construction, and utility firms in Mindanao.<sup>104</sup> The construction sector is hard-pressed to find civil, electrical, design, planning, and contract engineers. Manufacturing is seeking mechanical, chemical, and industrial engineers. Business chambers confirm a dearth of engineers in Mindanao, as the very few engineering graduates tend to leave Mindanao for jobs in Manila and overseas. As leading cities in Mindanao transform into manufacturing and high-skill services economies, skills will become even more important. The major reasons for these skills shortages are too little investment in basic education, inadequate training programs, and the migration of skilled workers.
133. Lack of investment in basic education makes it harder for students to learn and accumulate skills, both soft and technical. Enrollment in basic education, cohort survival, and completion rates are generally lower in Mindanao than in Luzon or the Visayas (Table 7). Inadequate and skewed distribution of educational inputs (teachers, classrooms, teaching materials, and Internet connections) partly

<sup>99</sup> Since 2010, the average number of graduates in the Davao Region (Region XI) is around 20,000 (CHED Higher Education Facts and Figures: <http://www.ched.gov.ph/central/page/ched-statistics>).

<sup>100</sup> High attrition rates are also a problem. A study by IBPAP and TeamAsia (2014) estimates the attrition rate of IT-BPO firms at 15 percent. In addition, about 18 percent of employees leave the industry as a whole each year (IBPAP).

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<sup>102</sup> For more discussion, see DOST-ICTO and IBPAP (2014).

<sup>103</sup> Estimates from Carillo (2013).

<sup>104</sup> For more discussion, see Department of Labor and Employment (DoLE), 2010.

**TABLE 7: Educational enrollment, completion, and cohort survival in Mindanao, 2013**

	Philippines	Luzon	Visayas	Mindanao
Cohort survival rate (2013)				
Primary	87	90	90	79
Secondary	77	80	78	70
Net enrollment rate (2013)				
Primary	95	96	96	93
Secondary	65	70	61	52
Completion rate (2013)				
Primary	87	90	90	79
Secondary	77	80	78	70
Student-Classroom ratio (2013)				
Primary	34	35	30	35
Secondary	49	48	45	47
Student-teacher ratio (2013)				
Primary	40	40	38	42
Secondary	34	34	34	35
Student-computer room ratio (2013)				
Total			1,262	1,249

Source: Department of Education (DepEd)

explains this poor performance (Maligalig and Caoli-Rodriguez 2010). In 2015, Mindanao was short by 80,000 teachers and 2,724 classrooms.<sup>105</sup> In 2012, 80 percent of Mindanao public classrooms were not connected to the Internet and lacked computers.<sup>106</sup>

134. **Migration contributes to the skills mismatch.** Most universities in Mindanao report that many of their students take courses like nursing, hotel and restaurant management, accounting, and maritime studies to prepare for jobs overseas. In fact, about 17 percent of their graduates find jobs outside Mindanao. Even vocational students leave Mindanao. All in all, about a third of Mindanawons find jobs in Luzon, the Visayas, or abroad, leaving Mindanao with a shallow pool of skilled workers.
135. **Joint public and private efforts are needed to increase the supply of high-skilled workers.** The IT and Business Process Association of the Philippines (IBPAP) and local ICT councils could work with government agencies like the Technical Education and Skills Development Authority (TESDA) and institutions of higher learning to provide scholarships, well-targeted training, and apprenticeship programs to potential IT-BPO workers. Government funding of scholarships could be reallocated to professions in short supply: currently, only 28 percent of the funds from the Commission on Higher Education (CHED) Student Financial Assistance program is allocated to priority engineering, math, or science courses. The collaboration between industry and selected schools in Manila to enhance the IT

<sup>105</sup> These figures are based on the Department of Education's prescribed student-teacher ratio of 25:1 and student-to-classroom ratio of 45:1.

<sup>106</sup> Data from the Department of Education.

curriculum, improve English proficiency and behavioral skills, and in some cases offer some full-time internships in participating companies, could be expanded to Mindanao. Universities in Cotabato, Marawi, and Zamboanga could also provide more Arabic and Spanish language courses to heighten the potential of these areas to cater to foreign markets.

## The Inequitable Distribution of Education and Training

136. **Unequal access to educational opportunities and training perpetuates income inequality and social isolation.** The data on average attainment masks the highly unequal distribution of educational resources, given Mindanao's mountainous terrain and the large number of Moro and indigenous people. For instance, educational outcomes are much worse in the ARMM. Moreover, training programs in Mindanao are generally targeted to more educated workers, leaving the less educated behind. Technical and vocational education and training (TVET) in the Philippines is regarded as complementary to basic education and about 95 percent of trainees in Mindanao have completed at least secondary education. Very few programs cater to trainees with less than secondary education, and most are short-term training courses that lead to certificates of competency, which employers hardly recognize. There is also little training related to agriculture, forestry, and fisheries, where most poor people work.
137. **Better TVET programming would open up opportunities for less educated and rural workers.** Based on an assessment of skills needed, training programs could be expanded for workers with only basic education. The regional offices of the DoLE, the Department of Education, and TVET could partner with local industry associations to determine which skills their industries need and how to design training programs to equip workers with those skills. Community-based training can be linked with the non-formal basic education programs the Department of Education offers to individuals who lack access to formal schooling. Here priority could be given to Moro and indigenous communities where functional illiteracy is higher. Training and other government programs could be better coordinated. For example, training could be linked with livelihood assistance programs or with employment facilitation services to match trainees with prospective employers. There are already initiatives that offer workers full-cycle employment support, which can be expanded in Mindanao if they prove to assist vulnerable workers.<sup>107</sup> Finally, investments in management and information systems would make it possible to evaluate the impact of programs on beneficiaries.
138. **In the long term, significant investment in basic education is needed to help students learn better and accumulate both technical and soft skills.** The K-to-12 program is intended to build the foundation. A three-part program could devote more resources to hiring teachers and building classrooms; increasing enrollment rates particularly among groups where functional illiteracy rates are high; and improve quality. Table 8 summarizes the necessary financing requirements, which total PHP684 billion (5.1 percent of 2015 GDP), or PHP114 billion annually (0.9 percent).

<sup>107</sup> Examples are the Department of Social Welfare and Development Sustainable Livelihood Program and DOLE's Job Start.



**TABLE 8: An illustrative investment program for Mindanao**

Education investment needs in Mindanao	Parameters	One-time investment	Recurring investment	Annualized investment	
		Cost (PHP billion)		Cost (PHP billion)	Percent of 2015 GDP
Closing the gap in classrooms and teachers		2	30	30	0.2
Building more classrooms	2,724 classrooms to construct at PHP 0.7M per classroom	2			
Hiring more teachers	79,731 teachers to hire at PHP 0.4M per teacher		30		
Achieving 100 percent enrollment rate		23	25	29	0.2
Building more classrooms	Given additional students, 34,072 classrooms to construct at PHP 0.7M per classroom	23			
Ensuring all children are enrolled	Cost of books, materials, etc. for the additional 1.5M students at 10 percent of the current regional budget		2		
Hiring more teachers	Given additional students, 61,330 teachers to hire at PHP 0.4M per teacher		23		
Raising quality			55	55	0.4
Increasing the quality raising factor	50 percent quality raising factor		55		
Total		25	110		
Annual investment requirement				114	0.9
Grand total over six years				684	5.1

Sources: DepEd, PSA, and WB staff estimates

## The Impact of High Minimum Wages

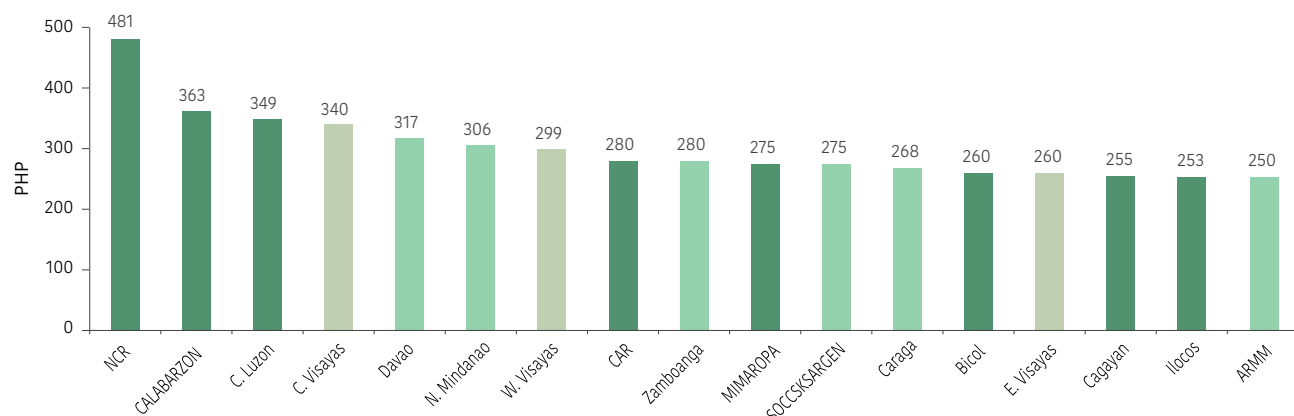
139. Minimum wages in Mindanao range widely. After Luzon and the Visayas, Davao and Northern Mindanao have the highest nominal minimum wages in the Philippines; ARMM has the lowest (Figure 23).<sup>108</sup> And while on average minimum wages and the median range in Mindanao are about the, the average minimum wage in Luzon is only 74 percent of the median range, and in the Visayas 88 percent (Figure 24).
140. The minimum wage in Mindanao is higher than in other countries in the region (Figure 25). Firms complying with the minimum wage requirements are therefore likely to find it difficult to compete in labor-intensive manufactures and tradable services with firms elsewhere in the Philippines or abroad.
141. Minimum wage requirements cover only about 10 percent of workers. Wage-earners account for only 46 percent of workers; and more than half of these are employed in informal firms that likely do not comply with labor regulations, and a fifth of workers in formal firms are hired informally, without written contracts, social security, health insurance, or protection from dismissal. Moreover, almost all businesses are exempted from the minimum wage law because they have fewer than 10 employees.<sup>109</sup>

<sup>108</sup> Across Mindanao's six regions, there are 27 different minimum wage rates, depending on sectors and firm size. A detailed discussion of labor policies is available in the *Philippine Development Report on Jobs* (World Bank 2013).

<sup>109</sup> Regional tripartite wage boards can grant minimum wage exemptions in their regions. Exemptions are not automatic; eligible firms have to file for them. Eligible firms include retail/service firms employing less than 10 workers, new businesses, and distressed business. According to DoLE, the exempted firms are still required to pay their employees no less than the poverty threshold. However, this is not explicitly written in wage orders. In practice, even if they do not apply, they are rarely inspected.

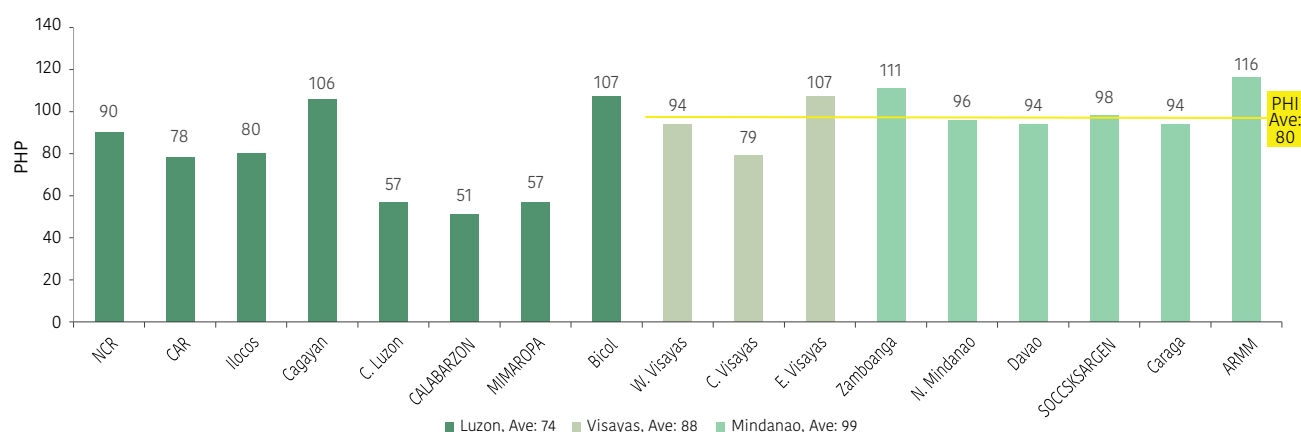


FIGURE 23: Minimum nonagricultural wages by region, PHP, 2015



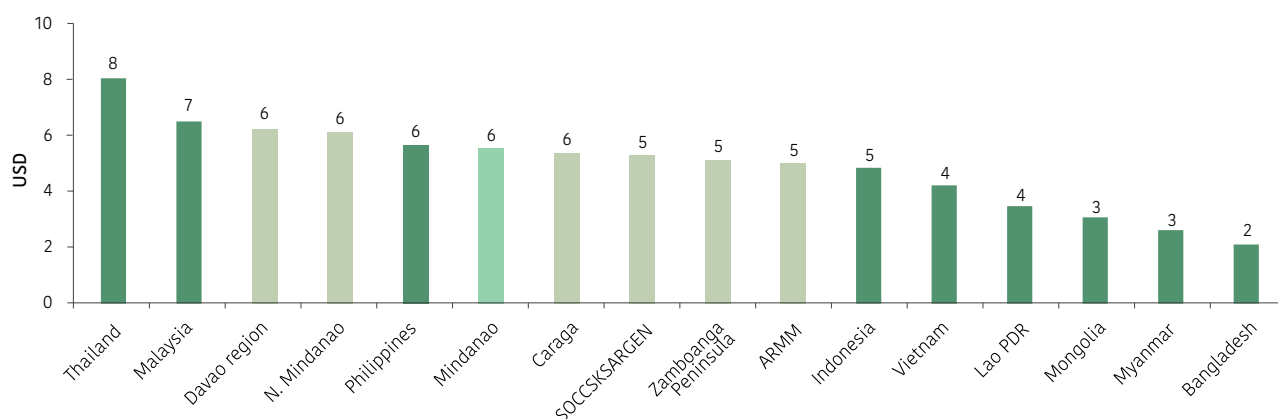
Sources: National Wages and Productivity Commission (NWPC) and World Bank staff calculations

FIGURE 24: Ratio of minimum-to-median wages by region, PHP, 2015



Source: NWPC and World Bank staff calculations

FIGURE 25: Minimum wages in East Asia, US\$, 2015



Source: NWPC

142. Minimum wage enforcement is limited, particularly in conflict-affected areas. That may be why firms do not report labor policies to be a major constraint to investment and job creation. Nevertheless, there may be some potential for increased coverage of labor regulations, given the growing use of the notorious 5-month rotating contract to avoid giving workers regular status. And as the formal sector expands over the medium term, minimum wage requirements are likely to become increasingly important.<sup>110</sup>
143. It appears that Mindanao's high minimum wages are associated with lower employment in manufacturing. Regression analysis using firm-level data from 1996 to 2008<sup>111</sup> found that the elasticity of manufacturing employment to the minimum wage in real terms is negative and significant across several specifications, with large firms the most affected (see annex tables).<sup>112</sup> This finding is similar to the one for the Philippines as a whole (see World Bank 2013).
144. With some adjustments, the minimum wage regime could be more useful. Reducing the number of to at most two per region (agriculture and nonagriculture) would improve transparency, and gradually removing all exemptions would expand coverage. In the interim, the policy that exempted establishments are still subject to a minimum wage equal to the poverty threshold could be clarified and enforced. This could increase the coverage of the minimum wage policy among workers in smaller firms and make it more effective as an anti-poverty tool.

## 7.2 Overcoming Burdensome Business Regulations

145. Cities in Mindanao, as in the Philippines in general, tend to have worse *Doing Business* indicators than other East Asian cities. For instance, the two best performers in Mindanao, General Santos and Davao, ranked 124<sup>th</sup> and 125<sup>th</sup> among 151 economies (Quezon City was 128<sup>th</sup>) in starting a business (Singapore was 1<sup>st</sup>, Thailand 59<sup>th</sup>, and Malaysia 71<sup>st</sup>). The ranking of Philippine cities differs in the Subnational *Doing Business Report* (SDBR), where the latest data are for 2011, and in the National Competitive Council report, which has data for 2014.<sup>113</sup> A number of reasons explain the high cost of starting and maintaining a business. First, many government agencies at both the national and the local levels are involved in starting a business, and several private sector providers (e.g., bookstore, banks, etc.) are also involved, but there is lack of coordination. Second, one-stop-shops and process automation are limited, especially in Mindanao where internet service is slow. Third, several steps, such as securing an import permit and getting Securities and Exchange Commission (SEC) approval, take several days because processing is done in Manila or in a regional center (e.g., SEC registration of Iligan firms is done in Cagayan de Oro, which is 90 km away). And fourth, most agencies have yet to shift from annual renewals of licenses to less frequent renewals, such as every three years for low-risk businesses.

<sup>110</sup> The ARMM rules governing labor markets are different but information on the labor rules is scarce: The ARMM has no obligation to report to the DoLE central office and national data do not usually include ARMM. Better coordination between DOLE-ARMM and DOLE central office could make more data available, and make it easier to evaluate labor market policies.

<sup>111</sup> This is the only available panel data at the firm level.

<sup>112</sup> Using the manufacturing data from the annual survey of Philippine business and industry, a small panel dataset of labor-intensive manufacturing firms is used to explore the effect of minimum wages on within-firm employment over time. The dataset is composed of 385 firms, all with at least 20 workers, surveyed from 1996 to 2008 from all three island groups. Regional minimum wage data are from the National Wages and Productivity Commission for 1990 through 2010. Minimum wages are expressed in real terms, using the published PSA national and regional consumer price indices. See Annex I for a discussion of the methodology.

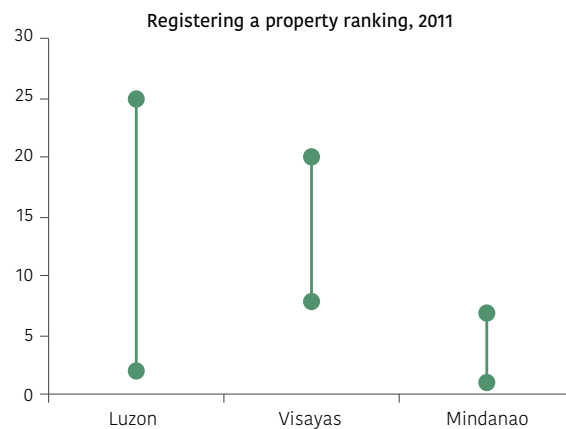
<sup>113</sup> The ranking of Philippine cities differs in the Subnational *Doing Business Report* (SDBR), where the latest data are for 2011, and in the National Competitive Council report, which has data for 2014.

**FIGURE 26:** Ratings on Starting a Business, Registering Property and Getting a Construction Permit, Mindanao, Luzon, and the Visayas, 2011



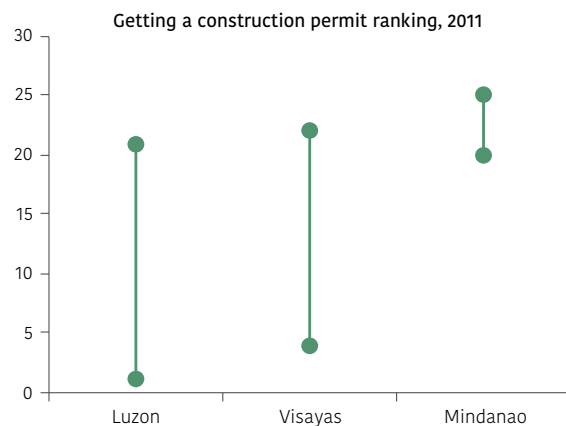
Source: IFC

Note: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.



Source: IFC

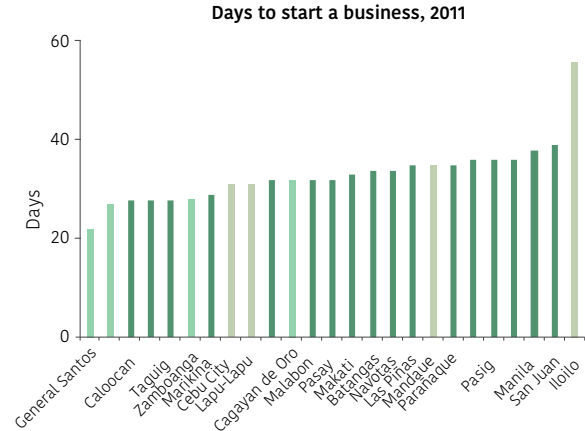
Note: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.



Source: IFC

Note: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.

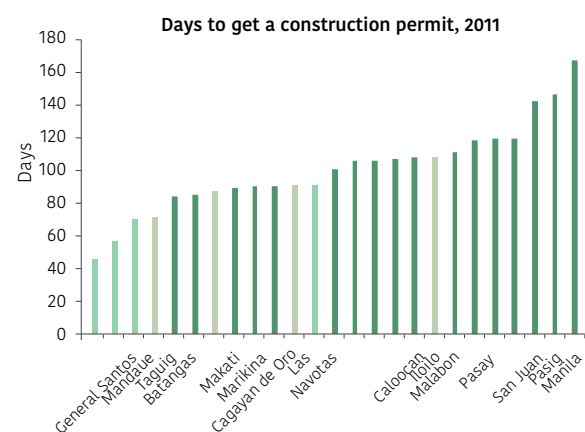
**FIGURE 27:** Days to Start a Business, Days to Register a Property and Days for Getting a Construction Permit, 25 Cities, 2011



Source: IFC



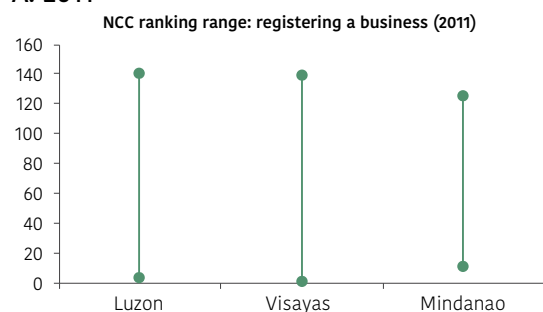
Source: IFC



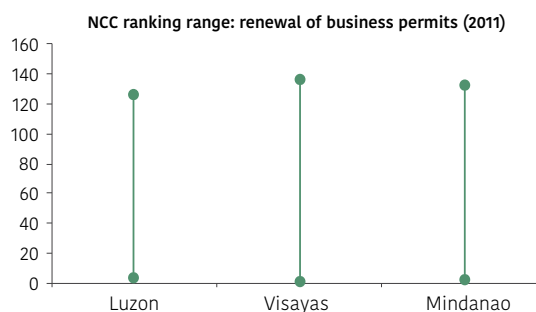
Source: IFC

**FIGURE 28: NCC Business Indicators for Mindanao, Luzon, and the Visayas, 2011 and 2014**

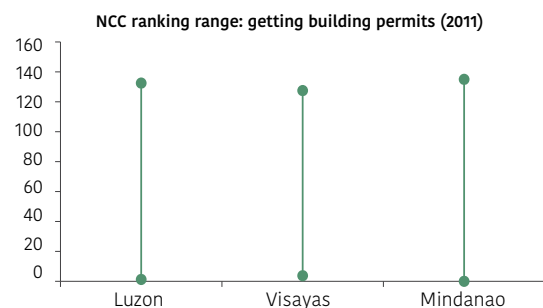
**A. 2011**



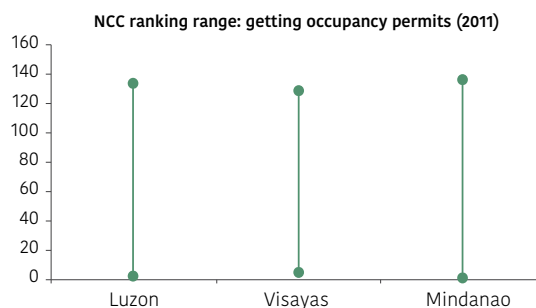
Source: National Competitiveness Council (NCC)  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.



Source: NCC  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.

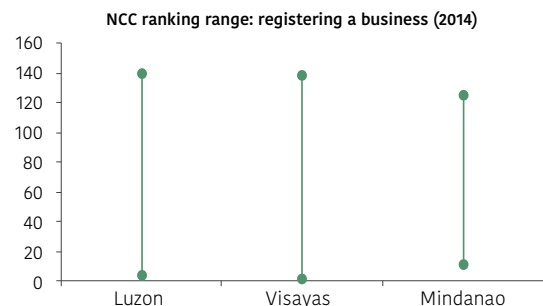


Source: NCC  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.

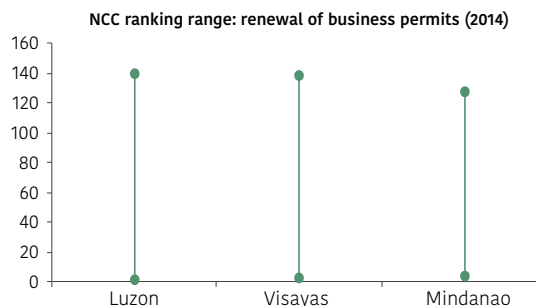


Source: NCC  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.

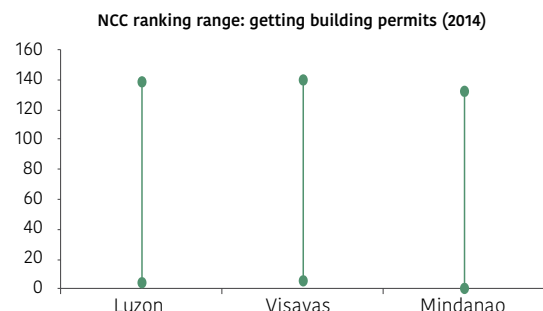
**B. 2014**



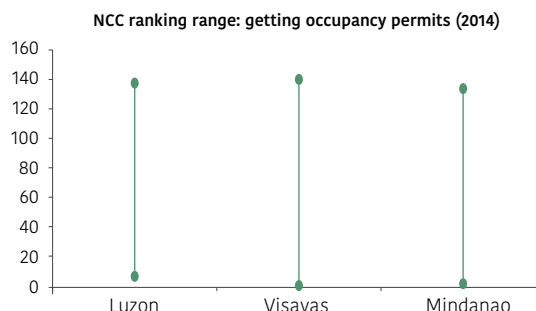
Source: NCC  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.



Source: NCC  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.



Source: NCC  
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Source: NCC  
Notes: Lines represent the range of rankings in various doing business indicators. A lower rank means better performance.

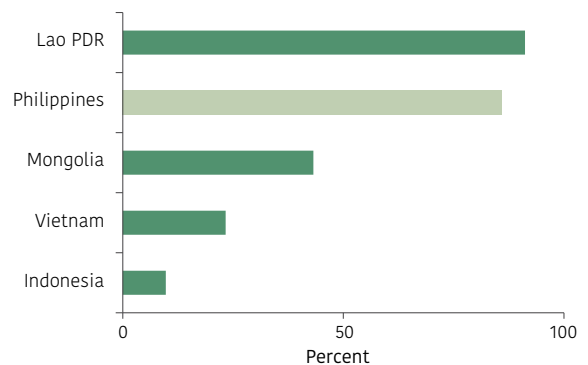
Source: PSA

146. Mindanao cities perform slightly better than those in Luzon and the Visayas in some indicators of the ease of starting a business reported by the SDBR for 2011 (Figure 26), where General Santos and Davao topped 25 cities in having the least number of days and procedures for starting a business (Figure 27). Mindanao's four cities also did well in ease of getting a construction permit: Davao ranked 1<sup>st</sup>, General Santos 3<sup>rd</sup>, Zamboanga 4<sup>th</sup>, and CDO 7<sup>th</sup>, all much higher than Quezon City (ranked 22<sup>nd</sup>). However, Mindanao cities performed poorly in registering a property, with ranks between 20<sup>th</sup> and 25<sup>th</sup>, due to slow turnaround at BIR regional offices and the local Register of Deeds (in CDO the average time spent at the Register of Deeds was 60 days, the highest reported). This may reflect poor land management in Mindanao (see below). Since the 2011 report, many cities have reformed their business procedures. In Mindanao, CDO, Davao, Butuan, Mati, and Ozamis have simplified the steps needed to secure a mayor's permit. Data from the National Competitiveness Council (NCC) indicate that in both 2011 and 2014 cities in Mindanao were roughly on a par with other Philippine cities in registering a business and obtaining permits (Figure 28).

## Impediments to Licensing and a Difficult Tax Regime

147. Applying for business licenses in Mindanao is tedious and often requires informal payments. Licenses must be renewed annually—more often than in other countries (Figure 29). Up to 18 licenses, permits, and forms have to be approved before a business can begin operations. There is little coordination among the many national and local government agencies and several private sector providers (e.g., bookstores, banks) involved. Firms report that they often have to pay bribes or give gifts to get permits and services. Modern technology such as the Internet is rarely used to reduce transaction costs, and there has been no

FIGURE 29: More licenses, more often: How the Philippines compares to neighbors, 2009



Source: Enterprise Survey 2009

- effort to reduce the number of personal appearances, steps, and requirements for routine transactions. And several steps, such as securing an import permit and getting Securities and Exchange Commission (SEC) approval, take several days because processing is done in Manila or in a regional center (e.g., SEC registration of Iligan firms is done in CDO, 90 km away).
148. Paying taxes is cumbersome in the Philippines, especially in Mindanao, given its poor Internet service and the limited capacity of firms to comply with national standards. In the 2016 global *Doing Business* report, the Philippines ranked 126<sup>th</sup> among 189 economies in paying taxes, among the worst in the ASEAN region. This is largely attributable to the country's high total tax rate,<sup>114</sup> equivalent to about 42.9 percent of profit — the highest in the ASEAN 5<sup>115</sup> — and to the number of payments per year — which at 36 is triple that in Malaysia, double that in Thailand, and five payments more than in Myanmar.

<sup>114</sup> The total tax rate measures the amount of taxes and mandatory contributions borne by a business in the second year of operation, expressed as a share of commercial profit. The 2016 *Doing Business* report uses the total tax rate for calendar year 2014. The total is the sum of all the different taxes and contributions payable after allowable deductions and exemptions. The taxes withheld (such as personal income tax) or collected by the company and remitted to the tax authorities (such as VAT, sales tax, or goods and service tax) but not borne by the company are excluded (World Bank 2016a).

<sup>115</sup> The ASEAN5 is comprised of Indonesia, Malaysia, Thailand, Vietnam, and the Philippines.

The time required to comply with tax requirements<sup>116</sup> in the Philippines was 193 hours a year, less than the 264 hours in Thailand and 234 in Indonesia, but far above the 118 hours in Malaysia. However, these figures do not adequately measure the full compliance costs for Filipino taxpayers, given alleged systemic corruption in the tax system. In Mindanao, business chambers say paying taxes is costlier for small firms because they have less capacity to maintain books and engage accountants. Thus, owners do the tasks themselves, incurring opportunity costs from filling up forms and standing in queues.

## Simplifying Procedures and Increasing Transparency

149. Some progress has been made both nationally and locally to make it easier to start a business. At that national level, four landmark memoranda of agreement (MOAs) were signed by nine national government agencies and an LGU in April 2015,<sup>117</sup> committing them to reduce the number of days needed to start a corporate business in Quezon City from 34 to 8 and the number of steps from 16 to 6. As of initiative is now being rolled out to other cities. At the local level, several cities have begun to streamline their business registration process through the RS4LGU project of the Department of Interior and Local Government (DILG),<sup>118</sup> in which cities methodically analyze and target steps for elimination in business registration. As part of the re-engineering process, some steps were deferred to post-licensing. Since 2010, 37 Philippine cities (10 in Mindanao<sup>119</sup>) have passed executive orders (EOs) to simplify business licensing. These cities reduced registration steps from an average of 45 to 3 and days from an average of 30 to 1. More successes are expected to follow as DILG rolls out the program to other local governments.
150. Davao and Cagayan de Oro are undertaking further reforms. Davao and CDO have introduced a one-step assessment of all business permit fees at the City Treasurer's office, instead of requiring visits to different agencies, and Bureau of Fire Protection officials are now stationed at Davao city hall to facilitate fire-safety evaluation clearances. As a result of its reforms, Davao has cut seven procedures, speeding up the start-up process by an average of 16 days. Moreover, *barangay* clearance and a certified true copy of a land title are no longer required when registering property.<sup>120</sup> CDO has completely computerized its business registration process using touchscreen terminals. It is now third fastest city in the country for registering a business,<sup>121</sup> and the fastest in Mindanao, at under an hour.
151. While such reforms significantly reduce the time and costs involved in starting a business, there are many more opportunities for simplifying procedures, for instance, (1) harmonizing and streamlining remaining procedures of national agencies and LGUs to avoid overlaps and redundancies (e.g., merging city and *barangay* business permits into one permit); (2) removing steps that can be verified by government offices at the back end (the recent policy directive that a SSS clearance is no longer

<sup>116</sup> The hours-per-year indicator "measures the time taken to prepare, file, and pay three major types of taxes and contributions: the corporate income tax, value-added or sales tax, and labor taxes, including payroll taxes and social contributions" (World Bank 2016a).

<sup>117</sup> The parties are the NCC, the Department of Finance (DOF), DTI, DILG, SEC, BIR, the Social Security System (SSS), Home Development Mutual Fund (Pag-IBIG), Philippine Health Insurance Corporation (PhilHealth), and the Quezon City LGU.

<sup>118</sup> In the Philippines, cities, municipalities, and *barangays* (villages) play a big role in the business registration process. In fact, about one-third of the registration steps are the domain of the LGU.

<sup>119</sup> Bislig, Butuan, Dipolog, El Salvador, Iligan, Mati, Ozamis, Samal, Surigao, and Tagum.

<sup>120</sup> Furthermore, the National Building Code is being revised to resolve apparent overlaps and contradictions and to address disaster risk reduction and climate change adaptation in building design/construction/maintenance/use/occupancy.

<sup>121</sup> The top two cities, Taguig (1st) and Valenzuela (2nd), are both in Luzon.



required when renewing business permits is a good example<sup>122</sup>); (3) reducing requirements whose purposes are not fully justified;<sup>123</sup> (4) fully implementing the PBR at the national level and the RS4LGU program for LGUs, training personnel on applying the rules effectively, and linking LGU access to the Performance Challenge Fund to compliance with RS4LGU monitoring indicators; and (5) reducing the frequency of renewals of government licenses, permits, and clearances for employment purposes, for example, from annually to once every three years, with compliance based on risk-based auditing principles rather than an extensive review of every applicant. Implementing some ideas may require a comprehensive review of all national and local laws and regulations.

152. Increasing the transparency of business regulations could reduce transaction costs. Mandating the prominent display of easy-to-understand process flowcharts and service standards in all government offices would reduce the time required to comprehend requirements. This would be based on a step-by-step guide, with a list of required documents and which offices to visit when and with what documents, and listing the address, working hours, and contact number for each office. A first step in this direction was the Anti-Red Tape Act of 2007,<sup>124</sup> which brought about the Citizen's Charter flowcharts now displayed in government offices. These could be improved for more completeness, accuracy, and accessibility.
153. The ultimate goal should be an efficient online or mobile registration system, with provision for online or mobile payments that minimizes the need for interacting with officials. This approach would not only save the time of both officials and businesses but also minimize opportunities for under-the-table transactions. In Mindanao, this reform needs to be complemented by improvements in Internet connections (see above).

## 7.3 Better Access to Finance

### The Financial Services Deficit

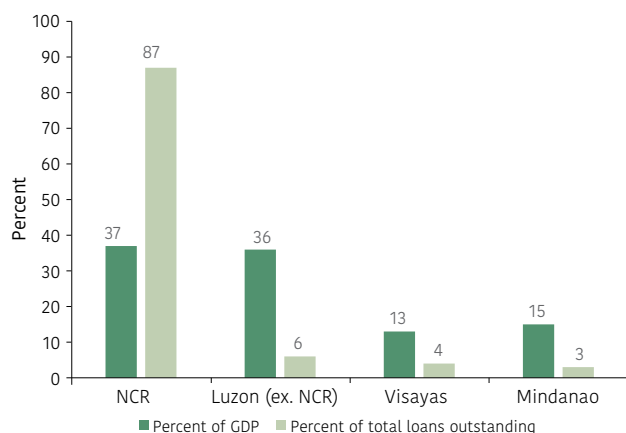
154. Mindanao contributes 15 percent of national GDP but receives only 3 percent of total credit granted in the country. In the Philippines 87 percent of credit granted by banks is concentrated in the national capital region. Mindanao's low share of credit compared to its GDP contribution is similar to the statistics in the Visayas and Luzon (Figure 30). Bank credit tends to be concentrated in metropolitan areas, which are also centers of economic activity. This pattern is repeated in Mindanao where, credit extended in Davao represents 27 percent of the regional total, and credit in Davao, CDO, and General Santos add up to 52 percent of the total. However, the statistics on the credit reported by banks may not fully reflect its geographical destination because many banks process loans, especially for large commercial borrowers, in their regional or main offices.

<sup>122</sup> Bislig, Butuan, Dipolog, El Salvador, Iligan, Mati, Ozamis, Samal, Surigao, and Tagum.

<sup>123</sup> This includes (1) reducing or abolishing the paid-in minimum capital requirement; (2) making the use of notaries and lawyers optional for startups; (3) moving toward a fixed registration fee that covers only administrative costs; and (4) removing antiquated mandatory practices of having the BIR stamp the company's invoice and account books.

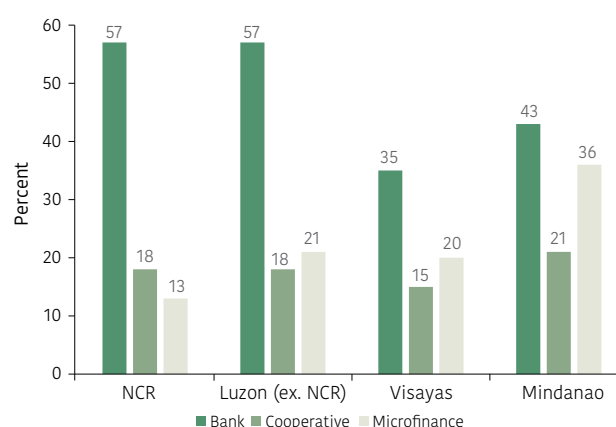
<sup>124</sup> Republic Act 9485.

**FIGURE 30:** Shares of total credit relative to GDP contribution compared, 2014, percent



Source: Bangko Sentral ng Pilipinas (BSP), 2014

**FIGURE 31:** Types of financial service used compared, percent

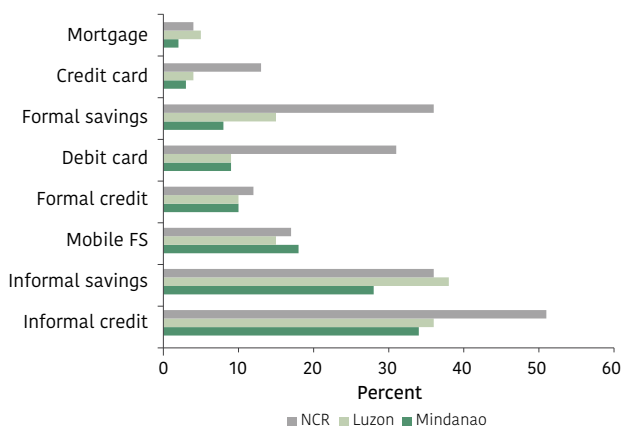


Source: National Baseline Survey on Financial Inclusion, BSP

155. Mindanao residents on average are less likely to use bank financial services and rely more on microfinance organizations and cooperatives: 43 percent report having used a bank, including ATMs the figure is 57 percent in Luzon, but 35 percent in the Visayas (Figure 31). In Mindanao, 36 percent of residents use microfinance organizations and 21 percent use cooperatives.<sup>125</sup> But 34 percent residents report using informal credit, and 28 percent have savings, which suggests possible demand for financial services (Figure 32).

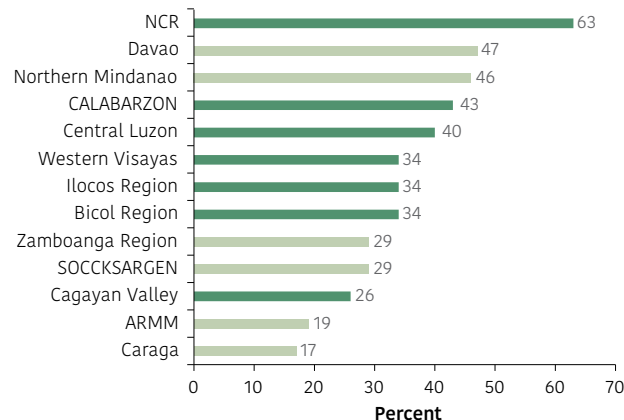
156. There is also substantial variation in access to financial services across the region. Nearly half of the residents in Davao (47 percent) and Northern Mindanao (46 percent) report that they have access to an account in a formal financial institution, which is higher level than in in most Luzon regions outside of NCR. At the same time ARMM and Caraga have the least access to formal financial services in the country (Figure 33).

**FIGURE 32:** Means of accessing credit compare, percent



Source: World Bank, 2015b. *Enhancing financial capability and inclusion in the Philippines – A Demand-side assessment*.

**FIGURE 33:** Adults with formal bank accounts, by area, percent



Source: World Bank, 2015b. *Enhancing Financial Capability and Inclusion in the Philippines – A Demand-side Assessment*.

125 BSP National Financial Inclusion Baseline Survey, 2015.

157. Trends in financial access are largely determined by the type of economic activity, particularly agriculture in Mindanao economy, and conflict. The main urban centers in Mindanao—Davao, General Santos, and CDO—have in recent years shown substantial growth, especially in credit, as economic prospects have improved. Yet, even though agriculture contributes 27 percent to regional GDP compared to 15 percent in the Visayas and non-NCR Luzon, the agricultural sector throughout the Philippines struggles to attract bank finance. Agricultural lending represents only 3 percent of the total national lending portfolio, although agriculture accounts for 11 percent of GDP and employs about 33 percent of the population. Despite mandatory lending targets and a range of initiatives for private financial institutions to expand it, the agricultural credit portfolio has instead declined marginally over the past five years even as total bank credit has gone up on average by 25 percent a year in nominal terms. Since a substantial portion of financing needs in Mindanao is agricultural, Mindanao as a region is having real difficulty in mobilizing financing from the private sector. In areas of conflict, too, security risks and instability deter investors and financiers.

### Specific Constraints on Financing in Agricultural and Conflict Areas

158. Agricultural businesses throughout the country have similar financing problems, but in Mindanao instability caused by conflict is an additional deterrent. All farmers the high risk involved in providing finance to smallholder agriculture, especially when land rights are not secure. While changes in national policies (see chapter 4), could increase lending to the agriculture sector nationally, several specific policies could help increase lending in the conflict-affected areas of Mindanao.
159. Financial inclusion and better access to financial services is one element of the broader development effort envisaged to lift economic performance in the ARMM. The National Strategy for Financial Inclusion (NSFI) adopted in 2015 creates a framework for efforts to boost financial inclusion throughout the Philippines. A range of policy and regulatory actions, financial education, and consumer protection programs and advocacy initiatives can improve prospects for financial inclusion in ARMM, but considering its specific challenges, there is also a need for interventions tailored to the region.
160. One possible approach is to integrate financially inclusive dimensions in support programs delivered in ARMM by the government and development partners. For example, the main financing mechanism in most programs is grants to beneficiaries. Although this is often appropriate, often there is also scope to experiment with alternative arrangements such as repayable grants, matching grants, and credit finance arrangements, for example in programs supporting enterprise development. A large proportion of the ARMM population must rely on more expensive informal credit than alternatives in the formal sector because formal providers are reluctant to lend to them. As the region recovers from conflict, there is a need to consider integrating market-based mechanisms to support development of local financial intermediaries and to facilitate a mind-shift among local residents and businesses toward financial sustainability and viability. There is potential for the use of mobile financial services and other innovations to better serve ARMM residents. Design of interventions might also take into account the fact that gender analysis indicates that men are less likely to use financial services, as is the national trend in the Philippines, but it is likely that conflict is an exacerbating factor in the ARMM.

161. Introducing of financial services must be accompanied by a significant campaign to improve financial education and awareness. There is growing empirical evidence that financial education and literacy programs are more effective when delivered at “teachable moments” in the use of financial services. There may be opportunities to introduce financial education as part of community development and cooperative support programs or conditional cash transfers linked to the use of funds, so that gradually people learn to rely on a range of financial instruments. The Cooperative Development Authority in ARMM already coordinates and support cooperatives in ARMM and could well take on this role.
162. Islamic finance and pilot programs to introduce Shari’ah finance are important elements of a financial inclusion effort in ARMM. The National Commission for Muslim Filipinos, the central bank (BSP: Bangko Sentral ng Pilipinas), Amanah Bank, and the Development Bank of the Philippines have worked with stakeholders and the legislature on a bill amending the legal framework for Amanah Bank to establish a legal basis for Islamic banking in the Philippines (World Bank 2015a). In parallel piloting approaches for Shari’ah-compliant microfinance is also recommended. Pilot projects would define product characteristics suitable for the Philippines context and help validate the feasibility of applying various models (World Bank 2016b). Moreover, piloting Shari’ah-compliant microfinance in parallel with capacity building and financial education would help prepare the ground for eventual integration of market-based and social models of Islamic microfinance.

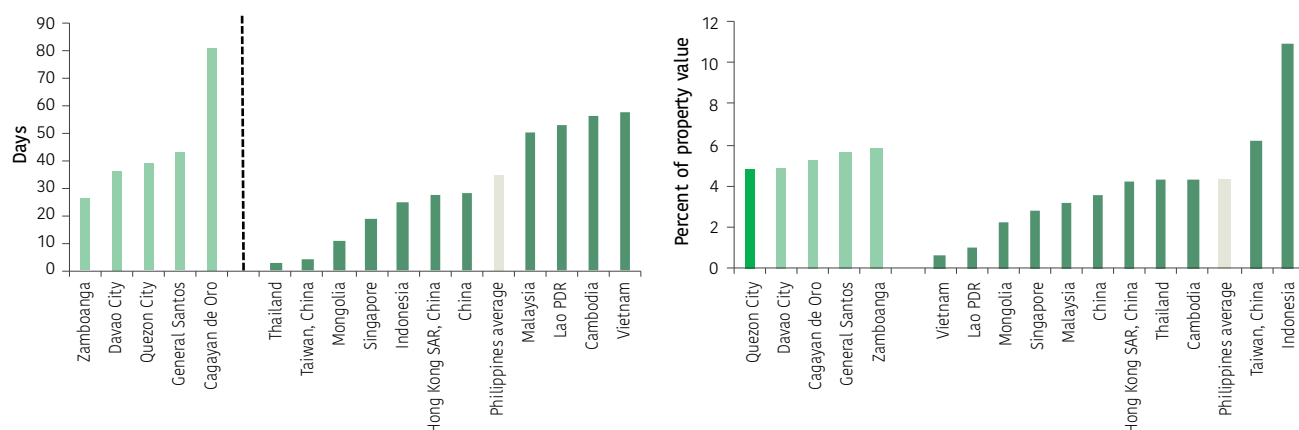
## 7.4 Improving Land Management Policy in Urban Areas<sup>126</sup>

163. Inadequate land use planning and zoning is impairing the quality of life in Mindanao’s fast-growing cities: City centers are becoming congested and polluted, and informal settlement enclaves are multiplying. Public administration is finding it hard to cope with the growing demand for services, and infrastructure investments and regulation of land use for housing, commerce, and industry is becoming more challenging to coordinate. While several Mindanao cities are beginning to proactively update their comprehensive land use plans, recent fast growth will require more regular updates—the Local Government Code mandates every five years.
164. About half of urban parcels lack titles, because titling is slow and there is no complete cadastral map. For a long time, titling was done mainly through the Miscellaneous Sales Patent, where the long-term occupant had to pay the value of the property based on the assessed value. This can be very expensive and cumbersome, particularly for those who have occupied the land for a long time. In 2010, the Residential Free Patent Act was passed, authorizing streamlined titling of residential lands. The DENR has over a hundred partnership programs with various LGUs to accelerate titling through the residential free patent option, but because they are not being done systematically, progress is slow.
165. The registry of land transactions does not reflect reality. Local registrars and assessors consulted estimated that 10 to 20 percent of transactions are not registered—mainly because of the high costs (formal and informal) of transferring<sup>127</sup> and registering a property. In 2011, the time and cost involved in registering a property in Mindanao’s cities were the highest in the Philippines (Figure 34). Moreover,

<sup>126</sup> This section draws largely from Eleazar and Hilhorst (2016).

<sup>127</sup> The cost is driven a number of taxes and fees: capital gains, transfer, and documentary stamp taxes, and registration and survey fees. Often, the magnitude of back taxes deters people from registering.

**FIGURE 34: Difficulties of Registering a Property, Mindanao and comparators, 2011**



Source: Doing business 2011

Note: Quezon City is the benchmark city for the Philippines. The countries are ranked from left (best) to right (worst) according to their distance to frontier scores, as published in the DB website.

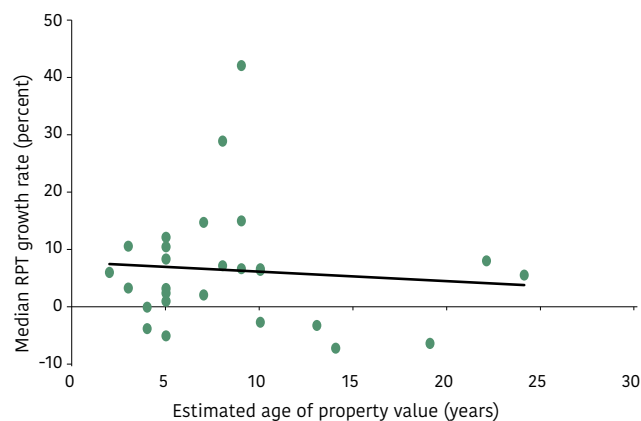
access to reliable and current information from the registry is costly. The Land Titling Computerization Project has ironically made accessing land records very expensive even by government offices fulfilling their mandates, and has contributed to delays in registering new titles and transactions. The result is missing, outdated, inaccurate, and costly land records that reduce incentives to develop land, hold back formalization, prevent SMEs from accessing formal credit, slow infrastructure projects with right-of-way issues, and complicate community mortgage programs for buying land.

166. LGUs are not maximizing the potential of property taxes to raise funds for local development. The collection efficiency<sup>128</sup> of major Mindanao cities ranges from 42 percent in Iligan City to 85 percent in Davao City. Many LGU records do not contain current property information, such as an inventory of idle land, because tax mapping is not done regularly; LGUs do not have access to the Registry of Deeds (RoD), making tax mapping difficult. Furthermore, as of March 2016, only 9 of 33 cities had updated their schedule of market values (SMVs).<sup>129</sup> Obsolete valuations are associated with lower real property tax collection (Figure 35), which is further depressed by the granting of tax exemptions, which in some cases is beyond the LGU's authority. On average from 2011 to 2014 cities in Mindanao collected only 0.2 percent of their GDP in real property taxes and hardly any on idle land tax (Figure 36); 76 percent of total revenues come from internal revenue allotments.
167. There are a number of ways to improve land use planning, e.g., (1) preparation of a physical plan for urban Mindanao; (2) ensuring timely updates of comprehensive land use plans; (i) more proactive development of zoning plans for all types of land after assessment of land tenure (agricultural, industrial, urban, conservation, etc.); (4) generation of a comprehensive database of land parcels describing categories, land use, and property boundaries, supported by a unified LGU land information system; and (5) over the medium term, enactment of a national land use code to guide local planning.

<sup>128</sup> This refers to actual as a percentage of potential collection. The real collection efficiency rate is likely lower because LGUs determine potential tax collection rather than an independent third party. Moreover, in most LGUs, the statement of collectibles and collections are not accurate because parcel records and tax maps, the bases of assessments and collections, are not accurate and complete.

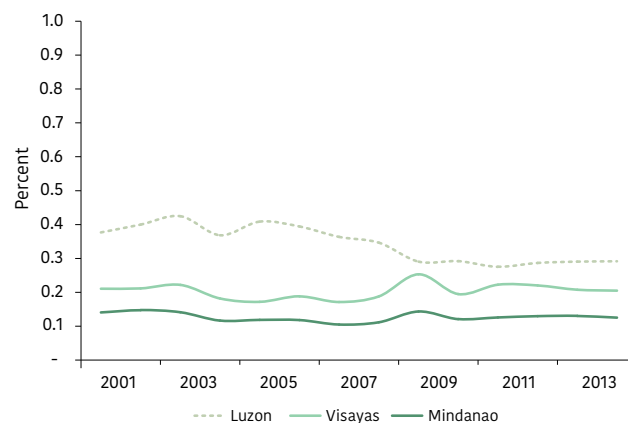
<sup>129</sup> Source: Bureau of Local Government Finance.

**FIGURE 35: Real property tax collection by age of property**



Sources: BLGF and Department of Finance (DOF)

**FIGURE 36: Property tax collection relative to GDP, Mindanao, Luzon, and the Visayas, 2001–13**



Sources: BLGF and PSA

168. There are also a number of ways to Improve titling and registration, e.g., (1) preparation of land tenure improvement plans as the basis for titling and other forms of tenure security; (2) rapid application of the residential free patent law; (3) further streamlining the RoD registration process by reducing fees, eliminating requirements with no clear rationale or that can be verified at the backend; (4) amending the contract between the government and the land computerization contractor to enable government offices to access registry information for free and the public at low cost; and (5) enforcing LGC Section 209, which mandates that RoDs provide local governments with annual abstracts of their registries.
169. Property tax revenues could be increased by creating a National Valuation Authority to centralize decisions about property valuation standards, which would increase transparency, ensure that properties better reflect market prices, and depoliticize the valuation process. Determining market values based on the valuation standards and actual collection of the property tax could remain with the local administration.



## ECONOMIC POLICIES TO REDUCE CONFLICT

170. Though the long-standing armed conflicts affecting parts of Mindanao can only be resolved by a political solution, economic policies can help reduce conflict. Dealing with historical injustices and recognizing cultural minorities is essential for peace and reconciliation. The government's peace and development roadmap sets out ways to overcome drivers of conflict. This section offers out a series of recommendations to tackle these drivers as a complement to a political solution.

### Five Decades of Violence

171. Violent conflict in Mindanao is complex and affects large areas. The state is engaged in peace processes with two groups: Moros fighting for self-determination, and communists fighting for ideology and against poverty and inequality.<sup>130</sup> Violence can occur between political dynasties, communities (Moros versus indigenous peoples, Christians, or other Moros), and clans, and with criminal, terrorist, kidnap-for-ransom, and other armed groups. Of Mindanao's six regions, conflict is most prevalent in the ARMM, the Zamboanga Peninsula Region, and the Caraga Region (see Figure 37). Almost 60 percent of Mindanao's 455 cities and municipalities and 13.6 million people (62 percent of the population) are directly affected by conflict.<sup>131</sup> In conflict areas, farmers often produce at subsistence levels and businesses remain small to escape notice.<sup>132</sup> About 63 percent of the people in areas affected by conflict live below the poverty line,<sup>133</sup> and of the Mindanao regions, ARMM has the highest poverty incidence. The provinces that became part of the ARMM decades ago were the richest region of Mindanao and are now the poorest.<sup>134</sup>

<sup>130</sup> Some groups, however, are now little more than extortionists fronting as a communist insurgency.

<sup>131</sup> Sources include the Bangsamoro Conflict Monitoring System (BCMS), supplemented by field consultations and research).

<sup>132</sup> Fear of kidnapping or extortion keeps businesses small and capital mobile. Most produce is sent to processing centers outside ARMM in places like Davao, Cebu, and Zamboanga. In 2015, there were only 13 large companies registered in mainland ARMM; they were engaged in agricultural planting and processing, or biomass energy production (data provided by the ARMM Regional Board of Investments; a large establishment is defined as one that employs at least 200 persons).

<sup>133</sup> World Bank staff estimates based on the BCMS, census of population and housing, and small area estimates of poverty.

<sup>134</sup> Growth in Caraga and Davao Region has been higher than in the ARMM due to less intense conflict, a more predictable conflict environment, and a mining boom.

172. Land disputes result in conflict.<sup>135</sup> Two factors explain the prominence of land dispute among Moros and indigenous people: (1) The legacy of resettlement and land programs from 1900s to the 1980s,<sup>136</sup> and (2) magnified effects of overlapping land law frameworks. The former largely affects the Moro people, the latter the indigenous people. Dispossession of the original inhabitants of Mindanao came in four waves: (1) from the end of Spanish rule in 1898 to the end of the Philippine Commonwealth in 1946; (2) the early years of the third republic, from 1946 to the late 1960s, (3) the martial law years from the 1970s to the mid-1980s; and (4) the comprehensive agrarian years, from the late 1980s to the present. Each was characterized by a policy instrument driven by the political and economic agenda of the central government at the time. The magnified effects of overlapping land legal frameworks grew from Mindanao's unique socio-geology that creates multiple rights over the same plot. The Philippines has eight separate land laws with significant overlaps and no clear rules of precedence that are the responsibility of five offices in four agencies, often without coordination.<sup>137</sup> The situation is exacerbated by unique socio-geological features that disproportionately impact indigenous people.
173. The complicated and overlapping land laws have resulted in competing but legitimate claims of various groups on the same pieces of land. In Caraga, large agribusiness and mining firms with legal instruments that justify their land claims have displaced indigenous people and small farmers who cannot defend their land rights because of poverty and little knowledge of legal procedures. Consequently, indigenous people in Caraga have become recruitment targets of the NPA, which has successfully exploited their grievance over unjust dispossession of their lands by the powerful local elite and large corporations (see also Quitariano 2016). Unless the land ownership uncertainty is resolved, violent conflict will continue.
174. These problems have resulted in massive land dispossession and violent conflict, especially in mainland ARMM and in the neighboring provinces of North Cotabato, Sultan Kudarat, and Lanao del Norte. Over time, land conflict has involved many parties: between Muslims and Christians, among Muslims, between title holders and traditional right holders, between firms and indigenous peoples, between LGUs, between clans or communities, and between private parties.
175. Land dispossession and conflict are aggravated by policies and developments that have disregarded traditional institutions based on communal ownership of land. Among them are (1) poor land administration and management that results in the grant of conflicting and multiple rights over the same plots (all with legal anchors though not necessarily seen as fair); (2) cadastral surveys that cause conflict because of formal approaches were used to dispossess holders of land; (3) land dispute systems favoring "confrontational" judicial mechanisms that ignore customary approaches such as mediation by leaders; (4) excessive accumulation of land by the new political elite and commercial interests in mining

<sup>135</sup> This section draws largely from World Bank and International Organization for Migration (2017). It also draws from LGI (2016). Floradema Eleazar is the main author under the guidance of Thea Hilhorst.

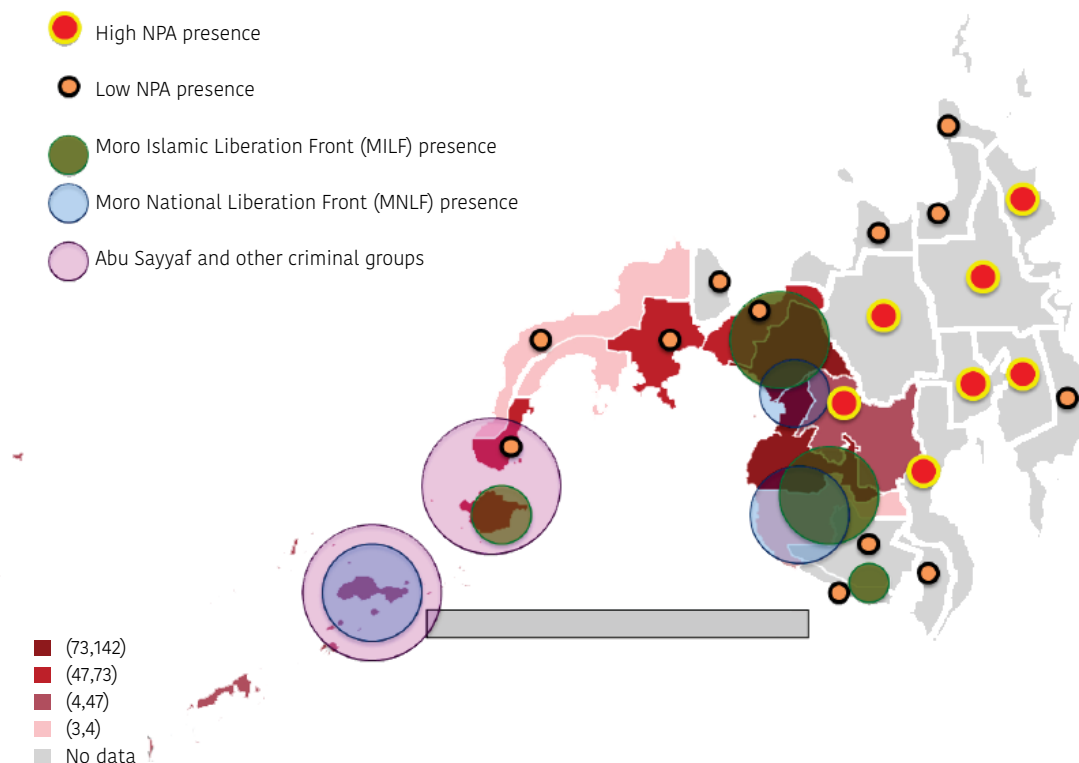
<sup>136</sup> Unlike the Spanish and American colonization of the Philippines, "colonization" of Mindanao by Manila was fairly recent, and there are people still alive who speak of how their land was grabbed.

<sup>137</sup> These are the Public Land Act of 1936 (Commonwealth Act 141), Forestry Code of 1975 (Presidential Decree 705), Comprehensive Agrarian Reform Law of 1988 (Republic Act 6657), People's Small-Scale Mining Act of 1991 (RA 7076), Local Government Code of 1991 (RA 7160), National Integrated Protected Areas System Act of 1992 (RA 7586), Mining Act of 1995 (RA 7942), and Indigenous Peoples' Rights Act of 1997 (RA 8371). They are implemented by the Land Management Bureau and Forest Management Bureau in the DENR, Land Registration Authority in the Department of Justice (DOJ), the Department of Agrarian Reform (DAR), and the National Commission on Indigenous Peoples (NCIP).

and logging; and (5) displacement of people due to violent conflict and environmental factors. Clearly, conventional solutions to land problems must be complemented, or even trumped, by solutions that address the core reason for grievances and are sympathetic to local customs.

176. Mass displacements have exacerbated the welfare impact of conflict. In August 2014 there were almost a million internally displaced persons in Mindanao, according to the United Nations High Commissioner for Refugees. Some 41 percent of the population in mainland ARMM and adjacent provinces have been displaced at least once, with many suffering far more often. Millions have migrated from Basulta and central Mindanao to safer areas in the Philippines and neighboring Sabah. The Malaysian Government estimates that in 2015 there were 470,000 Filipinos in Sabah (unofficial sources put the number at about a million, of whom 25 percent are considered “stateless” —, they do not have birth certificates or passports to prove their nationality – which reduces their access to jobs and services and increases their vulnerability to exploitation.
177. Violent conflict has had a major impact on growth and poverty levels throughout Mindanao. Concerns over security have depressed tourism and boosted the emigration of skilled workers. The reputational damage caused by insecurity even reduces investment in areas relatively unaffected by violence. These areas also bear the fiscal burden of coping with displaced persons. On the other hand, more peaceful areas have benefited from opportunities to process agricultural produce from conflict-affected areas, where processing facilities are rare. And many skilled workers from conflict-affected areas have migrated to other regions of Mindanao.

**FIGURE 37:** Conflict in Mindanao by type



Sources: *Behind the veil of conflict*, Bangsamoro Conflict Monitoring System (BCMS) 2011-2014, intensive consultation conducted to determine NPA presence

178. Economic policy can support the resolution of conflicts. The issues at the root of the conflict, in particular a deep sense of injustice that is a consequence of greatly unequal political and economic power, and longstanding grievances over land dispossession can only be resolved by a political settlement. It is clear, however, that poverty and economic hopelessness in conflict-affected areas help perpetuate conflict, as individuals without land or work opportunities are driven to join armed groups to survive or to seek social status. Discontent arising from social injustice and discrimination in the distribution of economic opportunity and development resources can also fuel violence. Thus, this report focuses on two major supports for peace: providing alternative income sources and improving the delivery of basic services, particularly in areas that have been neglected. Although such policies cannot on their own resolve conflicts, they can facilitate peace by creating economic opportunities and demonstrating that the government can be effective role in improving welfare.

## Creating Jobs for Normalization

179. Jobs address a basic cause of conflict, the lack of employment opportunities that drives many, particularly out-of-school youths, to desperation.<sup>138</sup> Youth inactivity is prevalent in conflict-affected areas, and particularly in Basulta, where 24 percent of working-age youth (national average is 16 percent) are idle. Having a good job also give a person a greater stake in the preservation of society. Job creation initiatives need to be managed carefully to avoid favoring one group over another, which could exacerbate tension rather than promote stability.
180. Targeted community cash-for-work programs can support stabilization.<sup>139</sup> The target groups should initially be people vulnerable to taking up arms, such as ex-combatants, out-of-school youth, and internally displaced people. After being piloted, programs could be expanded to other poor people to avoid the perception that they are rewarding participation in violence. Given the importance of social inclusion in forestalling violence, job creation schemes could give priority to programs that promote solidarity, such as group employment in public works and group borrowing for livelihood.<sup>140</sup> Programs that link former combatants with noncombatants can also usefully expand social networks and help social integration. The projects need to be labor-intensive, for example planting mangroves or building or rehabilitating village roads, irrigation facilities, and community water systems, community facilities such as *barangay* health centers and daycare centers, and dikes.
181. Globally, of all jobs programs entrepreneurship promotion programs like cash grants have proved to have the most positive effects.<sup>141</sup> Such programs, such as the USAID's Mindanao Youth for Development project have been implemented throughout the Philippines. The government's Comprehensive Local Integration Program provided training, living expenses, and cash grants for investment to 98 former

<sup>138</sup> The common response (40 percent) to a survey on what drives young people to join rebel groups was unemployment/idleness (World Bank 2011). A survey of government militia by the Institute of Bangsamoro Studies/Centre for Humanitarian Dialogue (2011) also showed that poverty and lack of employment options were the most common reasons for joining (33 percent). For ideological militant movements, however, the WDR (World Bank 2011) suggests that belief in the cause or a sense of injustice drove most people to join (46 percent) rather than unemployment or idleness (about 20 percent).

<sup>139</sup> Cash-for-work programs in the Philippines have been limited to emergency work given by the Department of Social Welfare and Development (DSWD) and the DOLE, and the Sajahatra Bangsamoro Program, which under DSWD provided cash-for-work for 11,000 beneficiaries identified by the Moro Islamic Liberation Front (MILF). The Department of Public Works and Highways mainly uses workers from outside the locality. There are also some direct donor-supported programs like the World Food Programme.

<sup>140</sup> See Walton (2010) for more discussion.

<sup>141</sup> See Blattman and Ralston (2015) for more discussion.

New People's Army (NPA) members who surrendered their arms); 145 Moro Islamic Liberation Front (MILF) combatants who were part of the ceremonial decommissioning in June 2015 also received a cash grant. A multifaceted small-grants program could be targeted initially to ex-combatants and idle youth and later expanded to other poor or at-risk people. The program could be designed to (1) provide cash grants to young people (at least two in each group) who submit a business plan; (2) assist preparation of business plans and offer sustained support or mentoring for one year; (3) be used for whatever the recipients deem most important for the success of their enterprise; and (5) allow sufficiently large groups to invest in equipment in rural areas. To improve its scope and market access, the program could be conducted in partnership with civic organizations in Mindanao that have the necessary experience and skills. The program could be managed like the 1995 Youth Entrepreneurship Program, which was created through the National Youth Commission (Executive Order 485). The Mindanao State University system, with campuses in ARMM, could provide support and training.

182. Cash-grant pilot programs need rigorous monitoring and evaluation before expansion. That might include (1) regular follow-up and tracking of beneficiaries; (2) having grant recipients report to local community organizations, such as the Out-of-School Youth Development Alliance; (3) devising a randomized control experiment to improve evaluation, and (4) releasing money conditional on performance—recipients might receive 75 percent of the grant up-front, and 25 percent after one year if they can present evidence of investment (not necessarily success).
183. Training should be part of jobs programs. While the Philippines has numerous training programs,<sup>142</sup> relatively few are in conflict-affected areas and they are not always relevant to labor market needs. In ARMM, for instance, there is no training on agriculture for the self-employed, even though the demand is high. Neither is there any training offered in life skills, which employers in ARMM prioritize over technical skills. To ensure maximum return, training programs in conflict-affected areas need to be socially appropriate, accessible, and relevant to the market.<sup>143</sup> The government, primarily through TESDA, could partner with the private sector at the outset to develop curricula relevant to the market. If the private sector cannot afford to hire trainees, the government could subsidize on-the-job training or apprenticeship programs. For workers whose goal is self-employment, training programs could be offered on agriculture, financial management, and business development. After such a course is completed, targeted cash grants could help with business startup or the purchase of equipment that training graduates need, such as tools or sewing machines.
184. Job promotion and entrepreneurship programs can enhance efforts to preserve Mindanao's rich diversity in cultures, ethnicities, and religions. Intangible cultural assets such as music and dance and tangible skills such as traditional boat-making, making traditional musical instruments, wood carving, jewelry making, and traditional weaving, can find markets both in Manila and internationally with the right type of support, such as training in business development and marketing. Expanding public appreciation of the cultural heritage of Mindanao, for example through media, education, and promotion by LGUs, could support such activities. Preservation and promotion of cultural heritage can also build mutual understanding and appreciation between Christians, Muslims, and indigenous peoples.

<sup>142</sup> These include the umbrella TVET programs and several other training programs not registered with TESDA, such as DSWD's Sustainable Livelihood Program and the DOLE JobStart Program.

<sup>143</sup> See Basic Education Assistance for Muslim Mindanao (2015) for more discussion.



185. Agricultural joint venture agreements, such as contract growing schemes, can be a good vehicle for heightening agricultural productivity in the region and the incomes of the poor. Because they have been fallow for decades, many production areas in conflict-affected provinces have high potential. The government could help organize partnerships between smallholders and agribusinesses that can provide capital, technology, and market access to increase farm productivity and market reach. Contract add-ons can help smallholders build capacity and gradually take over farm management. An example of an add-on is giving farmer cooperatives the contract for hauling and trucking services, security services, and even operations of a firm's cafeteria.

## Public Services and Sustainable Peace

186. Local governance in conflict-affected areas is often, although not uniformly, poor. Of the 123 LGUs in ARMM, only 37 (30 percent) passed the Department of Interior and Local Government's (DILG) 2014 Good Financial Housekeeping core assessment area (the national average is 91 percent) and none received the 2015 Seal of Good Local Governance (national average is 15 percent) award.<sup>144</sup> Fiscal resources are limited; many conflict-affected areas must rely on the national government for 99 percent of revenues. There is also probably spending inefficiently—the number of qualified audit reports tends to be high in conflict-affected areas. Only 4 percent of city and municipal treasurers in conflict-affected areas passed the national exams for treasurers (the national average of 16 percent), suggesting that these important positions are being politicized for personal gain.
187. A leading cause of poor governance is lack of political contestation. Entrenched political dynasties in some areas monopolize both economic resources and political power (for more discussion, see BrandLab 2011). While this is a problem throughout the Philippines, it is worse acute in conflict-affected areas, particularly ARMM, which is still highly feudal. Dynastic control of politics can deter investment and slow the pace of economic growth, and hence job creation. There is a strong correlation between low political contestability and poor socioeconomic welfare in Mindanao's conflict-affected areas (Querubin and Robinson 2014). But political competition is often associated with more violence, particularly during elections. Voters then face a difficult choice, because powerful clans provide security to their supporters.
188. Another concern for local governance is that in conflict-affected Mindanao economic activity is often either informal or illicit. Activities range from transactions in the informal land market, illegal logging and mining, and smuggling of goods up to drug trafficking and gun-running. Many local officials have little motivation to grow the formal economy because they profit heavily from the shadow economy. Perpetuating conflict is a useful smokescreen for avoiding central government scrutiny and giving space to powerful clans to run LGUs as personal fiefdoms. Vote-buying, which is common, aggravates the governance problem. A World Bank study found a robust negative correlation between vote buying and the delivery of primary health services in the Philippines (see Khemani 2013). Nevertheless, there are many examples of high-performing LGUs, including the current ARMM regional government, where progressive leadership has helped to improve the economy and delivery of services.

<sup>144</sup> To receive the Seal of Good Governance award, a local government must pass all three core assessment areas: 1) good financial housekeeping, 2) disaster preparedness, 3) social protection. For more information, see <http://www.dilg.gov.ph/reports-and-resources/seal-of-good-local-governance/12/>



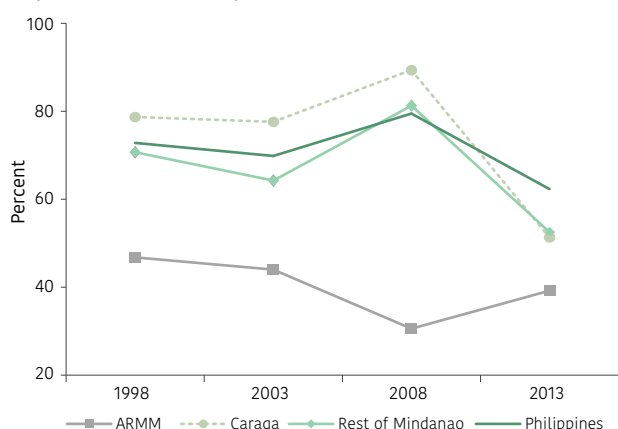
189. There are a number of ways to give LGUs better incentives to fulfill their mandates. These range from expanding performance-based and matching-grant programs key government services that link financing to results to enhancing the use of open data. For example, all ARMM regional agencies have begun to upload their budgets and project information on the Internet. ARMM DPWH took a step further by uploading a comprehensive map of all roads in ARMM to the DPWH e-ARMM portal ([dpwh-e.armm.gov.ph](http://dpwh-e.armm.gov.ph)). Once data are public, ARMM could partner with universities, civil society organizations and the private sector to analyze the data and work together to narrow service delivery gaps. This will help to turn transparency into accountability through constructive external scrutiny.
190. Decades of conflict have led to severe underinvestment in infrastructure. Until six years ago, government investment in roads, bridges, education, health, and other facilities has been minimal. Mainland ARMM, and Basulta even more, suffers severely from the lack of irrigation, village roads, and a network of primary and secondary roads to bring farm produce to cities. Roads also bring government services and economic opportunities to remote communities; road projects could prioritize village roads and inter-*barangay* roads that connect the interior and border zones of municipalities to rural centers and cities. Among Mindanao regions, at 30 percent ARMM has the lowest share of irrigated land. Serious gaps in roads connecting mining and logging sites to urban centers limit the potential of businesses in Caraga to engage in processing. Ports and shipping services are also expensive and inefficient. For instance, there is only one weekly trip between Jolo, Sulu, and Zamboanga, and that cargo is charged quadruple the rate on other inter-island routes. The combination of long distances and poor logistics means that conflict-affected areas like Basilan, Sulu, and Tawi-tawi are isolated from the mainland, leading to high shipping prices; tariffs are reportedly four times higher than for similar distances in Luzon and the Visayas.<sup>145</sup>
191. Educational enrollment, completion, and attainment rates are low in many conflict-affected areas. In the ARMM, in the 2011-12 school year only 23 percent of students who had been enrolled in grade 1 made it to grade 6; the national average was 74 percent. About 45 percent of secondary students made it to the fourth year; the national average was 79 percent. The average achievement test score for sixth grade students was 54 percent and for fourth-year high school students 37 percent; the national averages were 67 and 49 percent. In 2013 among ARMM people aged 10 and over in 2013 literacy was estimated at 86 percent (national average: 97 percent),<sup>146</sup> and functional literacy (critical for business employment) is also low. The lack of educational attainment reflects repeated cycles of armed violence that have damaged many education and health facilities; low levels of spending and poor governance in the delivery of services; and difficulties in finding qualified teachers, particularly for remote and insecure locations. Some Muslim and indigenous parents also feel that the national curriculum is irrelevant to their culture; the government is now introducing programs to address their concerns. Displacement, poverty, and prolonged insecurity have also reduced demand for schooling. Teachers in parts of the island provinces, for instance, only teach two days a week due to security concerns and remoteness. Based on data from the World Bank ARMM Education Public Expenditure Review (World Bank 2015c), school closures are prevalent and absence rates are high for both teachers (31 percent) and students (29 percent).

<sup>145</sup> The creation of a free trade zone and improved border services in Basulta would boost trade with Sabah, providing a market for Basulta's agricultural products and enabling residents to access basic commodities at about half of Mindanao prices. However, the Philippines has long refused to recognize the legitimacy of Malaysia's possession of Sabah.

<sup>146</sup> Source: 2013 Functional Literacy, Education, and Mass Media Survey (FLEMMS).

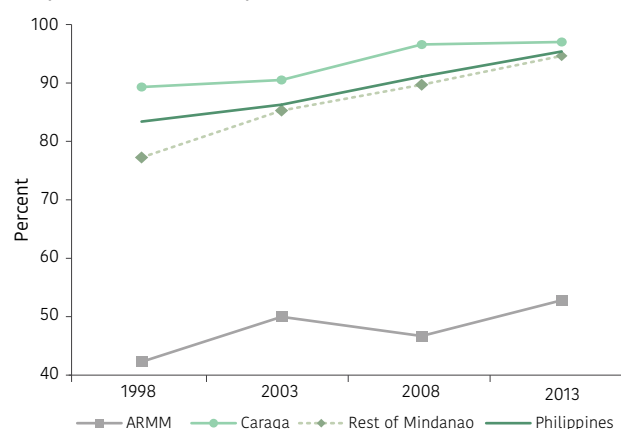
192. Besides devoting greater resources to education, reforms could strengthen management (DFAT Australia and World Bank 2015). Efforts to improve the integrity of payroll systems in the ARMM could include continuing to integrate and cross-reference payroll and the human resources information system (HRIS), building internal structures and procedures for human resource management, streamlining merit-based recruitment through appointment boards, and communicating these achievements to both ARMM citizens and the national government. A priority would be introducing incentives to improve teacher attendance, such as using the HRIS to check attendance during payroll processing. First steps are being taken to decentralizing control over education funds to the region; ultimately, all education funding should be channeled through the ARMM government budget appropriation. Decentralization could be encouraged by adoption of results-based regional performance budgeting that is acceptable to the national government. Efforts could be made to increase the role of civil society and communities in education planning and implementation by improving transparency (e.g. publishing budgets), strengthening control points (such as local school boards), improving feedback mechanisms, periodic surveys, and a publicized open data platform.
193. Health outcomes in the ARMM are also worrying. Maternal mortality is 67.4 per 100,000 live births, compared to the national average of 64.8. Only 3 in 10 1-year-olds are immunized, compared to the national average of 7 (Figure 38). Malnutrition is prevalent, and micronutrient supplementation is rare. Less than half of ARMM households have access to health care, and those that do have to deal with poorly staffed health centers. In general, 95 percent of pregnant Filipino women access antenatal care, but only 53 percent of ARMM women do (Figure 39). In 2012, only 37 percent of ARMM households had access to safe water and 23 percent access to a sanitary toilet; the national averages were 80 and 87 percent. As a result, diarrheal diseases are prevalent. Due to malnutrition, poor household environment and access to preventive health services, infectious diseases such as tuberculosis and other respiratory infections also remain a problem.

**FIGURE 38:** 2-year-olds who received all basic vaccines compared, 1998–2013, percent



Source: National Demographic and Health Survey

**FIGURE 39:** Pregnant women's access to health care compared, 1998–2013, percent



Source: NDHS

194. Much can be done to improve basic health in ARMM. The 2013 National Demographic and Health Survey (NDHS) in 2013 found that PhilHealth coverage in ARMM is only 44 percent, with self-paying members at 18 percent and coverage of the indigent at 16 percent. Coverage could be increased by

ensuring that poor households are aware of their membership, benefits, and entitlements, and where services can be found, and adoption of no-balance billing for indigents in government hospitals. The Department of Health regional allocation for health facility enhancement is less than 40 percent of what is necessary to cover all 120 rural health units. Other critical needs include more staff and availability of essential medicines, greater focus on maternal and infant health care (about 39 percent of children 5 or under are stunted, the second highest of all regions) and ensuring enforcement of the Responsible Parenthood and Reproductive Health Law.

195. Effective delivery of health and education services in conflict-affected areas will require innovative approaches. Traditional birth attendants can be equipped with competencies to provide proper antenatal, natal, and postnatal health care. Tele-medicine could link health facilities in isolated and disadvantaged areas to specialists outside the region. One-stop-shop medical-surgical missions could be provided regularly. To give indigenous children in remote *barangays* access to basic education, “hybrid schools” (buildings used as both schools and evacuation centers to avoid natural disaster or conflict) can be built in border zones. Finally, addressing the chronic absence of teachers, health workers and agricultural extension specialists in remote or conflict-affected areas may require incentive payments to encourage attendance, with third-party verification linked to the payroll.
196. The private sector and NGOs may provide some services, particularly where the local government is not functioning effectively or lacks capacity to meet demand. NGOs that specialize in providing certain services, for example infant immunization, provision of potable water and sanitary toilets, and mass feeding programs for children, could complement public programs. NGOs could also provide education, especially for women and vulnerable groups. An example in ARMM is the Magbassa Kita Foundation, Inc. (MKFI),<sup>147</sup> which could be expanded to provide a literacy program for Moro women. Where necessary, the delivery of core services (health, education, water supply, agricultural extension) could be outsourced to NGOs or the private sector through performance-based contracts.<sup>148</sup>

## Addressing Land Conflict

197. The forms of land conflict vary so much that they call for a variety of formal and informal land dispute settlement mechanisms. Measures to address land conflict can prosper only if they have solid political support, both nationally and locally. Formal mechanisms include the judicial and quasi-judicial systems of (1) national government agencies such as the DENR Land Management and Forest Management Bureaus, the Department of Agricultural Reform (DAR), the National Commission on Indigenous Peoples, and the Land Registration Authority; (2) regional government agencies such as DENR-ARMM, DAR-ARMM, and the Office of Southern Cultural Communities; and (3) local government conflict resolution bodies. Among informal nonstate bodies are customary or traditional dispute settlement mechanisms in Moro and indigenous communities, dispute settlement bodies managed by civil society organizations, and the MILF’s shadow Shari’ah courts.

<sup>147</sup> Source: 2013 Functional Literacy, Education, and Mass Media Survey (FLEMMS).

<sup>148</sup> ARMM is pursuing a similar approach to some extent through the delivery of education services by Building Resources Across Communities (BRAC) under the Australian Government’s BEAM-ARMM program.

198. In many cases of land conflict, formal government mechanisms need to either be more sympathetic to local customs or give way to informal mechanisms. While government is mandated to settle land ownership, it sometimes worsens conflict by imposing discriminatory policies, applying land-related laws ineffectively, and passes conflicting land laws that pit legal claimants against one another. The bureaucracy has limited coverage, is not immediately accessible, and insists on complicated procedures. The confrontational nature of litigation also goes against the local social preference for preserving harmony. These factors—plus the alleged involvement of some government officials in anomalous transactions—discourage claimants from embarking on official procedures. A major restructuring of land-related agencies in the Bangsamoro to make them more sympathetic to local customs is therefore necessary before the government can settle land disputes effectively.
199. Although non-state systems often enjoy local legitimacy, often they cannot resolve the underlying issues. They are typically low-cost and highly accessible, but because of their emphasis on keeping the peace, the core issue of a land dispute is often to be avoided, so that more is achieved in pacification than in issue resolution. These systems offer interesting lessons, but their sustainability and scalability to the rest of Mindanao needs further exploration.

### Specific Recommendations for Basilan, Sulu and Tawi-Tawi (Basulta)

200. The recommendations in this chapter apply to all conflict-affected areas of Mindanao, but Basilan, Sulu, and Tawi-Tawi (known collectively as Basulta) require special attention. A central feature of Basulta is its dual economy: the traditional rural economy and the shadow economy. Geographic remoteness and acute security challenges in Basilan and Sulu also heighten the peace and development challenge in those two provinces. Finally, significant outmigration to Sabah and other locations—and the limited likelihood of major private investment in the area through the medium-term—makes remittances particularly critical for the Basulta economy.
201. The traditional rural economy revolves around agriculture, fisheries, and informal services. The shadow economy is broadly defined to include all unregistered economic activities, such as smuggling of basic and commercial goods (e.g., rice, oil, sugar, other food items, electronics),<sup>149</sup> smuggling or trade of prohibited goods (e.g., drugs, weapons), human smuggling and trafficking, kidnap for ransom, informal land market and credits, and extortion of businesses (see also Lara and Schoofs 2013).
202. Given this unique context, development options for Basulta should also be unique. One option may be to convert Basulta into a free trade zone to reduce both tariff and nontariff barriers to trade. This could improve welfare because basic commodities are cheaper in Sabah. With zero tariff and few nontariff barriers, Basulta could return to a version of the barter trade that made it prosperous in the past. Another positive impact of the free trade zone could be reallocation of scarce government resources to combating illicit shadow economy activities rather than regulating the “coping” smuggling that Basultans resort to for survival.

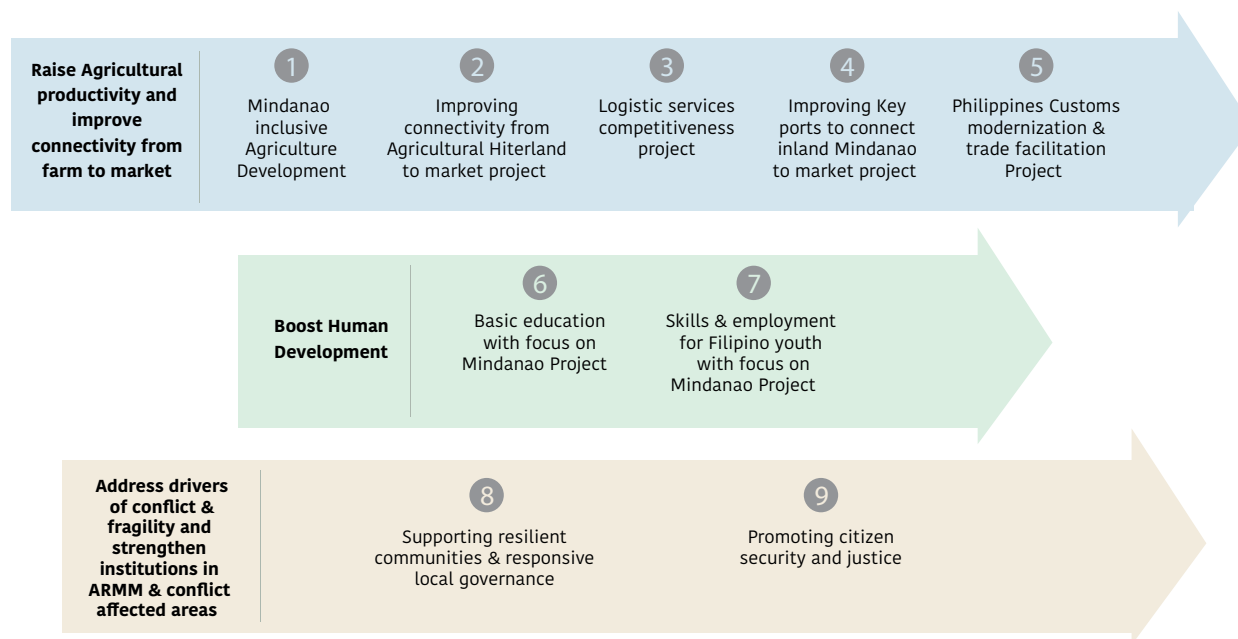
<sup>149</sup> Local and international players, allegedly including government officials, are involved in the smuggling chain. For a detailed discussion of rice smuggling in the Zamboanga and Basulta area, see Sarmiento (2016).

203. Regularizing consular services for almost half a million Filipinos in Sabah could help them get better jobs, access social services, and in the process increase remittances to help Basulta stabilize and grow. Due to the Philippines' claim on Sabah, no consulate cannot currently be established there. Instead, the Philippine Embassy in Kuala Lumpur provides a mobile consular service several times a year that processes birth certificates and passports. Given the large number of irregular migrants, this service could be made more frequent. Increasing it will require close coordination of numerous government agencies. These agencies could form a task force to make monthly visits to areas in Sabah where there are sizable numbers of Filipinos. With passports, irregular and otherwise stateless Filipinos could attend school, access health services, and get better jobs. They would also be better protected from exploitation and discrimination. The remittances they send back, estimated at US\$190 million a year, could be instrumental in helping Basulta, and Mindanao, stabilize and grow.

## HIGHLIGHTS OF THE PROPOSED STRATEGY FOR MINDANAO REGIONAL DEVELOPMENT

204. This section outlines proposed interventions following a strategic approach to ensure spatial focus, pinpoint targeting of beneficiaries, and appropriate sequencing and linking of priorities. This strategy for regional development in Mindanao builds on dialogue with the Philippine government and stakeholders in Mindanao and on the government's Strategic Framework for Mindanao Peace and Development. The main goals are to (1) raise agricultural productivity and improve farm-to-market connectivity; (2) boost human development; and (3) address drivers of conflict and fragility and build up institutions in ARMM and other conflict-affected areas. The World Bank engagement for Mindanao will be based on this strategy (Figure 40).

FIGURE 40: Components and planned interventions of the strategy for Mindanao Regional Development





## Heighten Agricultural Productivity and Improve Farm-to-market Connectivity

205. Raising agricultural productivity and reducing transaction costs by expanding into more inclusive value chains would require a hybrid solution—an agro-spatial approach, fostering productive alliances,<sup>150</sup> while enhancing agriculture-based livelihoods. Attention should center on selection of product clusters in the poorest and most conflict-affected areas while ensuring linkages to Mindanao’s main agricultural processing and trading hubs, urban centers, and mobilizing the combined resources of government, private industry, academic/ training centers, financial institutions, and NGOs. For communities, (re)-building social cohesion will be crucial, as will support for dispute resolution mechanisms and legal aid to resolve land-related disputes. This would also enhance urban functions in rural development; access to finance by integrating Islamic financing principles; and increasing the number and quality of jobs on and off the farm. This could deepen the integration of the domestic food market and strengthen export competitiveness.
206. A priority in improving roads should be farms and agricultural centers to ports and streamlining related logistics services. Most of Mindanao’s population depends on farming to earn a living, but most have small farms in areas with no transport connectivity so they are cut off from markets and trapped in poverty. Roads to farm gates are often in poor condition; because they are not mapped, strategic planning is difficult. Low volumes and poor roads discourage formal trucking services especially when the terrain is mountainous and rolling, often aggravated by natural calamities and accidents. Urban roads to ports are already highly congested. Identifying the missing local roads could make clearer the path to linking farmlands to strategically located cargo consolidation centers with cold storage facilities that are part of a logistics network. That would ultimately support smaller farming communities in better managing harvests and minimizing wastage, and facilitate transport connectivity to markets, urban centers, and beyond via strategic ports. Consolidating at agricultural centers will lead to more full-truckloads; reducing unit transportation costs and increasing volumes can attract more logistics and transportation services. The capacity of national roads connecting the main cities should be expanded and inter-city linkages will be particularly important if ports are to be rationalized.
207. If the connectivity of agricultural products to supply chains is to improve, logistics services will need to be of higher quality. Interventions would be directed to optimizing inbound (e.g., agricultural inputs) and outbound logistics in the main commodity corridors, and addressing needs of specific supply chains, e.g., cold chain facilities, container yards, and warehouses. Typically, consolidating logistics facilities close to ports or inside regions would need to involve public-private partnerships (PPPs) to facilitate direct import and export from Mindanao. An important element would be automation of regulatory requirements for the provision of logistics services to the regions, including agri-laboratories, customs clearances, export permits, and vessel registration. The main gains will be in the quality and reliability of farm-to-market supply chains resulting in fewer product losses due to spoilage; higher-quality exports, and better access to markets and new revenue sources. Improvements may also result in lower freight costs and a higher logistics labor content.

<sup>150</sup> Productive alliances: *horizontal alliances* among smallholders to coordinate production and sell collectively; which incentivizes *vertical alliances* between (organized) producers and at least one buyer engaged in provision of a good in a specific value chain based on a commercial agreement—often involving a bundling of services.

208. There is potential to consolidate port cargo to increase economies of scale and modernize customs procedures. The traffic at Mindanao is fragmented among public ports at CDO, Davao Sasa, General Santos (Gen San), Zamboanga, Nasipit, Ozamiz, Iligan, Surigao, Dapitan and numerous smaller ports because shipments move to the nearest seaport due to poor road connectivity and infrastructure limitations at the main gateway ports. The lack of infrastructure investments is particularly evident at CDO and Davao Sasa, where damaged quays and lack of berth space have led to construction of private ports and diversion of a substantial volume of containerized traffic to the new port facilities.
209. With regulatory reforms and a coordinated plan for port development, facilities at the dominant gateway ports could eventually complement initiatives by public and private partners, positioning Mindanao as a well-connected agri-logistics hub in South East Asia. Economies of scale in consolidating cargo encourages private investment in ports; and longer berths that can accommodate ever-larger vessels are an incentive for shipping lines to use the ports more often. Increased services also lead to higher connectivity and more frequent calls, and ultimately to more competitive freight rates.
210. Modernizing customs to complement transport and logistics reforms will be crucial. While customs is administered nationally, problems identified in the center are often much more severe in the regions. Adopting international standards, eliminating red tape, and installing modern automated systems can therefore have a major impact on traders by (1) improving the transparency and consistency of how customs regulation operates; (2) enhancing inter-agency collaboration in facilitating trade; (3) slashing opportunities for the inappropriate use of discretionary powers; and (4) better monitoring activities and client service standards.

## Boost Human Development

211. Efforts to boost human development need a dual-track strategy: First address first basic education, then address skills and employment programs. These initiatives will ensure that the people of Mindanao can take full advantage of the opportunities as they are created by greater agriculture productivity and improved connectivity.
212. Raising the quality of and access to basic education will ensure that graduates have the foundation for further skills development. Improving the quality of teaching and learning will entail building up teacher professional programs and improving the systems to support both teachers and students. Increased access will be driven by drop-out prevention activities as well as improvements in infrastructure management and in improving teaching and learning materials and equipment to make staying in school more attractive. Efforts are also needed to fulfill the promise of school-based management by strengthening school-level planning and monitoring (e.g., giving more responsibilities to local school boards, school governing councils and parent-teacher associations) and ensuring that school-level accountability and transparency mechanisms function. Adjusting the current funding formula and improving local government financial support to public schools could be an effective and efficient way of channeling critical resources to where they are most needed. Complementing these efforts will be an adult learning program focused on the ARMM, where many adults are illiterate or at most completed only minimal basic education, to provide adults 15 years or older the reading and writing skills that will enable them to continue further training for employment. This means increasing access to programs and learning materials that meet the specific needs of the targeted group of learners.

213. The second component of the human development strategy will address building jobs skills and the bridge to employment for youth through vocational training, second-chance education, and employment facilitation and career coaching. This can build on TESDA's community-based training and enterprise development scheme, which has shown promise in preparing youth for jobs in Mindanao and in particular expanding TESDA initiatives for agricultural training and other activities with high-potential in ARMM (e.g., halal food processing). Vocational training initiatives should include interventions to boost the socioemotional skills of youth, especially in conflict affected areas, and adoption of proven on-the-job training models. This will also reforms to ensure that the Alternative Learning System provides more job-relevant training. Finally, this set of initiatives will include enhanced job profiling, employment referral, and career coaching to connect qualified youth to job opportunities, for instance through a larger role for DOLE's public employment offices. The collective impact of these enhanced programs will be to ensure that Mindanao youth are prepared to access the jobs generated by other elements of the strategy.
214. An important element will be to promote employment for vulnerable youth in poor and conflict-affected areas. To capitalize on increasing skills for agricultural development, in Mindanao, the geographical focus of the agricultural and the skill development projects would be aligned. To address the functional illiteracy problem, especially in ARMM, priority would be given for the Alternative Learning System for Moro and IPs with higher incidences of functional illiteracy, and perhaps also to ex-combatants. Finally, vulnerable youth and young ex-combatants in conflict-affected areas would be specifically targeted group to benefit from vocational training and enhancement of skills the labor market demands.

### Addressing Drivers of Conflict and Fragility

215. The interventions seek to build resilience, opportunity, and equity across Mindanao. Recognizing that a large part of Mindanao is affected by conflict and fragility, the focus will be on interventions that can help to break the cycles of insecurity and reduce the risk of their recurrence. They should facilitate a virtuous spiral of restoring confidence in collective action and transforming institutions so that they can then provide a sustained level of security, justice, and jobs. Ensuring accountability how funding is used and the quality of services delivered will be reviewed regularly against the goals, with mitigation or remedial measures in place to resolve inconsistencies.
216. Differentiated engagement strategies will be applied as needed, with some actions for areas with clear potential for growth and private investment, and others for conflict-affected and poverty-stricken areas to support peace-promoting socioeconomic development interventions. For the conflict-affected population the speed of interventions is of the essence. The rapid provision of assistance to conflict-affected populations is essential to alleviate suffering, deliver a peace dividend, and build confidence. Quick results can build the foundation for transformational changes in the medium term. For certain areas of intervention, initial support will be provided by Trust Funds to continue confidence building.

217. Differentiating implementation modalities and ensuring sensitivity to conflict in design and work on the ground will be crucial. Modalities will need to be adapted to the regional and local context and different types of institutions, including national and local government agencies, the ARMM government, perhaps the Bangsamoro Transitional Authority and future Bangsamoro government, and MILF-MNLF institutions. As appropriate, proposed interventions for a given sector will from their inception an analysis of specific drivers of conflict and fragility to ensure that there are activities to address these drivers, and that proposed interventions will not have unintended counterproductive effects. Overall, a minimum of security is essential for making possible the realization of many interventions.
218. Capacity building and a focus on including and supporting vulnerable groups will be an essential feature of the interventions. A long-term perspective on building up local institutions will part of the planning. Building capable and legitimate institutions is vital for breaking repetitive cycles of violence. Promoting initiative and inclusive decision-making and resource allocation to involve citizens and non-state actors will broaden ownership, enhance the adequacy of interventions, and generate trust in the peace and post-conflict processes. Projects will be designed ensure support to vulnerable groups, including ex-combatants, communities impacted by conflict, and indigenous peoples.
219. Confidence can only be restored and social cohesion strengthened in conflict affected areas if local governance is responsive and there is peace-promoting catch-up access to basic socioeconomic community infrastructure. Interventions would give priority to socioeconomic infrastructure using participatory planning at the local level building on lessons learned from the long history in the Philippines of participatory development, community empowerment, and community-driven initiatives, including in the ARMM and other conflict-affected areas. This would have the additional benefit of strengthening social cohesion in the community level, which is crucial in a post-conflict environment. Successful Community-Driven Development (CDD) in the Philippines has proven to improve the delivery of basic services, and reduce poverty.<sup>151</sup> While national and international evidence has shown that CDD in general does not reduce the incidence of conflict incidence, that CDD increases interaction, participation, and among villagers, and between villagers and local leaders, and contributes to promoting social cohesion. However, a study from 2012 showed that in MILF controlled areas, levels of violence tend to decrease because of MILF participation in CDD process (Labonne 2013).
220. Through support to build up local governments, the ability of institutions to fulfill the social contract through inclusive, transparent, and conflict-sensitive delivery of services, LGU governance would be enhanced. The conflict-sensitivity of the design would draw from experience with the PAMANA program of the government, GIZ, and the AECID among others, as well as KC-NCDDP, the ARMM Social Fund, and Mindanao Trust Fund projects. The proposed interventions will also contribute to the implementation of agreements under the Annex on Normalization” signed by the government of the Philippines (GPH) and the MILF.<sup>152</sup> Interventions would strengthen the capacity of MNLF- and MILF-

<sup>151</sup> Successful use of CDD approaches in poverty reduction interventions in the Philippines was demonstrated in an Impact Evaluation from KALAHI-CIDSS showing an increase in per capita consumption, especially for households that were classified as poor (J. Labonne, Feb 2013).

<sup>152</sup> On January 25, 2014, the GPH and the MILF signed the Annex on Normalization. It defined normalization as “a process whereby communities can achieve their desired quality of life, which includes the pursuit of sustainable livelihood and political participation within a peaceful deliberative society.” It further notes that the aim of normalization is to “ensure human security in the Bangsamoro.” The Annex highlights, among other things, the need for programs to be community-based to reinforce social cohesion.

affiliated institutions, ARMM government, and LGUs at the barangay and municipal level, as well as perhaps the new Bangsamoro Transitional Authority.

221. While support would be provided for the development of communities impacted by conflict, normalization also requires specialized support to decommissioned combatants. Building upon previous experiences with decommissioned combatants, not only in the Philippines but also in Latin America, the Middle East and Northern and Sub-Saharan Africa, interventions would be directed to supporting the transition of combatants to civilians. A first crucial step would be to draw up the strategy and mechanisms for this. Support could also be provided for offering socioeconomic reintegration packages. For longer-term support and sustainable livelihoods, decommissioned combatants might be linked with agricultural development projects, as well as job skills training and employment facilitations. Finally, children of ex-combatants could benefit from opening up access to basic education in conflict-affected areas.
222. Given the scale and complexity of land conflict, promoting more equitable access to land will require support through the short, medium and long terms. Measures to address land conflict can prosper only if they have solid political support in Manila as well as Mindanao. As a first step, land conflict resolutions could be piloted in areas where land conflicts are frequent through, e.g., the proposed agricultural interventions. Experience in Mindanao suggests that hybrid institutions that marry the authority of the state and the social legitimacy of transitional institutions can be effective. In the medium to long term, successful pilots for efficient and community-acceptable land conflict resolution mechanisms should be scaled-up, building on experiences of the GPH, in collaboration with development partners like GIZ, USAID, and others. The alternative dispute resolution process could eventually be incorporated into a Bangsamoro Land Administration Law. In the short term, interventions could also promote understanding of the political economy governing land markets, and the intentions of those displaced and dispossessed by the conflict to return to their communities of origin after a Bangsamoro government is installed—that could cause anxiety in and possibly violence from current residents.
223. In the long term, supporting effective reforms of land administration and management both nationally and in Mindanao will be crucial, as will ensuring that they are put into effect.<sup>153</sup> Interventions would aim to (1) strengthen relevant institutions by clarifying their roles and responsibilities; (2) strengthen cadastral surveys and title registrations, using modern technology validated by community mapping, and (3) develop accountability mechanisms. If the Bangsamoro Basic Law passes, support could be given to designing a Bangsamoro land administration system. As international experience has shown, land administration can falter, especially in post-conflict environments unless there are clear commitments to good governance.

## The Value Proposition

224. The proposed strategic approach has many benefits over a simple project-by-project approach, notably its geo-spatial advantages. First, the spatial focus through the agriculture interventions can reach the poorest beneficiaries while also linking hinterlands to main markets and ports along key

<sup>153</sup> Congress already has before it a National Land Use Plan Act.

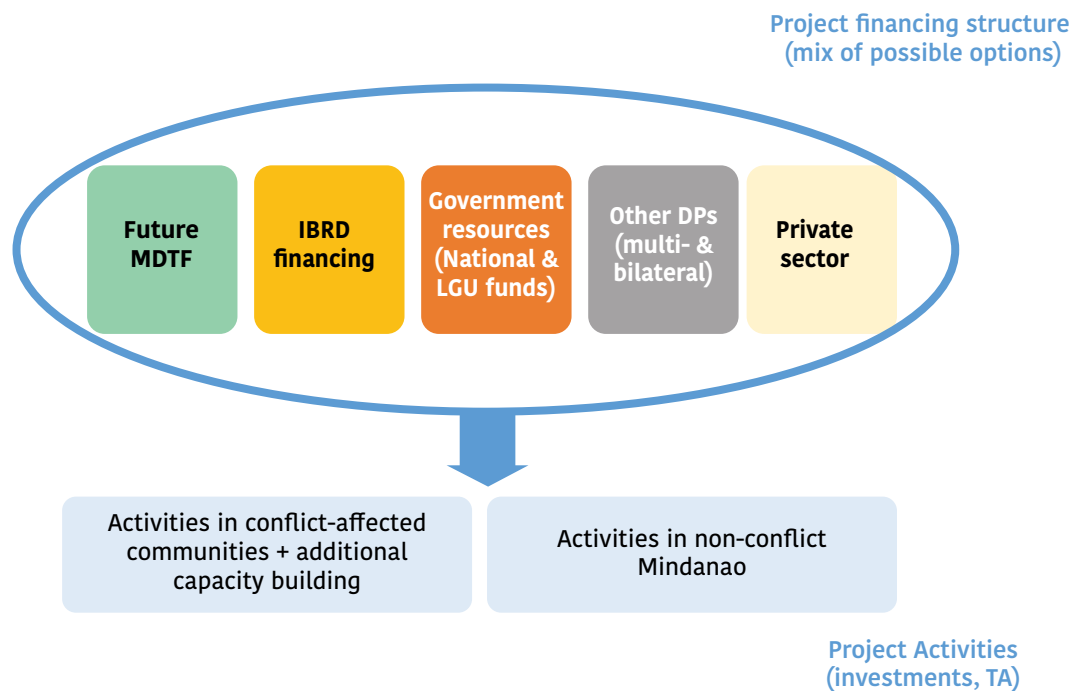
corridors. The intervention related to road connectivity, logistics, and port modernization would build on the MinDa Growth Corridors concept and target freight flows on the CDO–Bukidnon–Davao–Gen San north south routes.

225. The strategy would also ensure conflict sensitivity in every phase. For example, interventions on basic education would include activities to support Alternative Education directed to beneficiaries of agriculture interventions, farmers and agriculture-based communities in the poorest barangays, conflict areas, and indigenous people. Priority would be given to groups with a higher incidence of functional illiteracy. Also, the conflict-sensitive design of agriculture interventions would allow communities to implement their own sub-projects or contract in services and training as identified in the local economic development plans. This could include a combination of (1) public goods and economic infrastructure, such as access roads, post-harvest facilities, irrigation, and farming or fishing equipment; (2) agricultural extension services and farmers field schools; (3) home or community vegetable production; and (4) market-linked skills training and job referral services, especially for youth. Support might also cover dispute resolution mechanisms and legal aid to resolve land-related disputes.
226. The strategic approach builds on programs already underway, and will help with sequencing and scaling them up. For example, interventions on road connectivity would be based on the MinDa Corridors Program and could complement the Asian Development Bank national roads program for Western Mindanao. It would also build on the topographic map for Mindanao prepared by JICA, the current master planning for Davao, and the DPWH roads convergence programs. Skills and employment support interventions would complement the ADB project on facilitating youth school-to-work transition in support of DOLE and TESDA. They would also link to JICA interventions for supporting senior high school programs in vocational high schools. Port modernization interventions would leverage the preparatory studies for the SASA wharf container terminal PPP for a broader study to develop Mindanao ports as strategic multipurpose ports with versatile cargo-handling capabilities.
227. The strategic approach lends itself well to innovations based on global best practices. The interventions on basic education and on skills and employment development would package a set of interventions that foster skills development and facilitate school-to-work transition that are currently fragmented among different agencies, making it difficult to measure their impact on employment outcomes. The interventions to expand access to finance for rural farmers would incorporate Islamic finance; encourage support of new market opportunities, such as the growing local urban market and halal; use of ICT to share market information and agriculture extension; support for convergence of government approaches to creating an economic livelihood; and build capacity to adapt to support the normalization process under the Comprehensive Agreement on the Bangsamoro. Port modernization interventions would integrate planning for various Mindanao ports, possibly adopting a dual port gateway strategy; that would allow packaging urban roads access improvement with ports development, or launching a Maritime Training Institute for technical education of seafarers, and port and terminal operating personnel, to enhance their operational capabilities. Customs interventions would adopt paperless trade processes and eliminate face-to-face contact between officials and traders; help with World Trade Organization Trade Facilitation Agreement (WTO TFA) alignment focused on transparency, accountability, and integrity; and identify client service standards to be publicly reported.



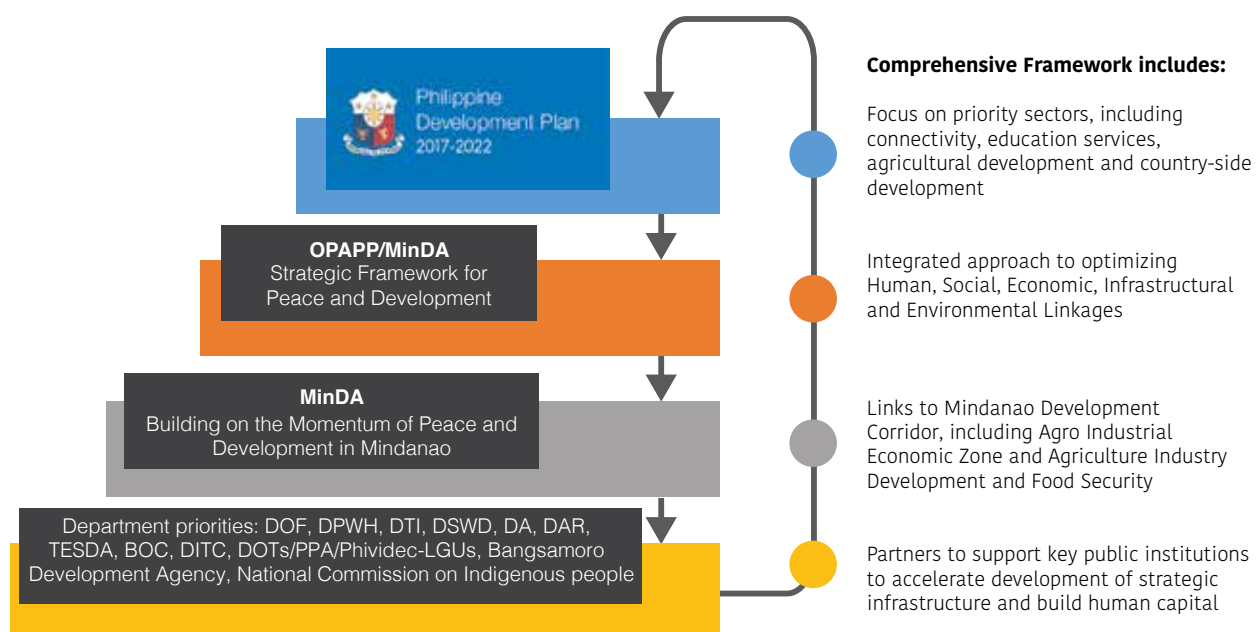
228. The goal of the proposed strategy is to crowd in partners and maximize a variety of financing options, such as grants, loans, multi-donor trust funds, and government funding (Figure 41). It would also allow the crowding-in of partner ranging from governments, multilaterals, and bilaterals (other development partners [DPs]) to the private sector. Technical assistance and advisory service could be financed primarily by trust funds. For scaling-up activities in the longer term, reimbursable advisory services (RAS) could be an option, as well as loans to be supported by the International Bank for Reconstruction and Development (IBRD). Combining different sources of financing would allow for (1) supporting different types of institutions, including MNLF and MILF institutions, the ARMM government, national and local governments agencies, and eventually the Bangsamoro Transitional Authority and future Bangsamoro government; (2) making longer-term commitments; (3) going to scale; and (4) supporting both the transition and the transformation phases of the government's peace and development agenda.

FIGURE 41: Maximizing financing options



229. Finally, because the strategy is comprehensive, it could ensure buy-in and better coordination between implementing agencies. Since it is firmly anchored in the Philippines Development Plan and the government's Strategic Framework for Peace and Development, the strategy's approach and its interventions have the opportunity to bring partners in public institutions closer together (Figure 42). This high relevance and tight alignment with the priorities of national and subnational government institutions could heighten the chances of delivering on the envisioned results.

**FIGURE 42:** Aligning the strategy for Mindanao regional development with Government priorities



## ANNEX I: Regression analysis of the impact of minimum wage requirements on manufacturing employment

### Summary of Methodology

This study investigates the effect of minimum wages on manufacturing employment, using data from the Philippine manufacturing survey. In particular, it looks at the effect of minimum wages on within-firm employment using a panel of manufacturing survey data for firms in Mindanao.

### Data

From the manufacturing survey, a small panel dataset of firms in Mindanao is used to explore the effect of minimum wages on within-firm employment over time. The dataset is composed of 40 firms from Mindanao, all with at least 20 workers, surveyed from 1996 to 2008. No larger dataset was available.

Minimum wage data are from the National Wages and Productivity Commission. National data are available from 1951 to 1989 and regional from 1990 to 2010 at the regional level.<sup>154</sup> Minimum wages are expressed in real terms, using the published national and regional consumer price indices from the PSA.

### Methodology

Equation (1) is used for the manufacturing firm panel dataset. The general regression equation is as follows:

$$\ln(E_{irt}) = \alpha_i + \alpha_r + \alpha_t + \beta_1 \ln(W_{rt}) + \gamma X_{irt} + \varepsilon_{irt}$$

Interpretation of the variables and coefficients is as follows: The alphas are firm (*i*), region (*r*), and year (*t*) fixed effects. The coefficient  $\beta_1$  measures the elasticity of manufacturing employment to the real minimum wage. For regression using ordinary least squares (OLS), the alphas are replaced with dummy variables.  $X_{rt}$  was included as a time-varying regional control vector that includes variables such as the share of exports to revenue, the share of electricity to total cost, and the natural log of capital spending. For fixed effects (FE), depending on the specification, the alphas are retained.

To check whether random effects (RE) estimation would be more appropriate, Hausman tests are conducted for each specification. The tests find that for the panel regressions, fixed effects and random effects are significantly different in all specifications. This is expected because FE estimation is more appropriate for the panel datasets as the observations are not necessarily random draws from the population.<sup>155</sup> To arrive at more robust estimates, heteroskedasticity-robust and clustered standard errors are used at the region, province, and firm levels.<sup>156</sup>

<sup>154</sup> The breakpoint is due to a change in the minimum wage-setting regime. In July 1989, Congress enacted Republic Act 6727, which delegated the power of Congress to set minimum wages to the new Regional Tripartite Wages and Productivity Boards (RTWPBs). The RTWPBs are mandated to prescribe minimum wage rates for their regions, taking into account regional conditions.

<sup>155</sup> See Wooldridge (2009) for more discussion.

<sup>156</sup> The effect of using this kind of standard error is that the significance of the estimates decreases from one percent to between five and 10 percent in some regressions.

**TABLE 9: Pooled OLS and fixed effects panel regressions**

	Dependent variable: ln (production employment)				
	(1) OLS	(2) FE	(3) FE	(4) FE	(5) FE
ln (real minimum wage)	4.519***	-2.47***	-1.937***	-1.014	0.752
	(1.386)	(0.554)	(0.682)	(0.587)	(0.991)
ln (capital spending)			0.006		0.083**
			(0.011)		(0.028)
Direct export share to revenue			0.019		0.644***
			(0.162)		(0.105)
Electricity share to cost			-0.336		0.286
			(0.560)		(0.642)
Fixed Effects	No	Firm	Firm	Region	Region
Year Effects	Yes	Yes	Yes	Yes	Yes
Observations	320	320	276	320	276
Number of Firms	40	40	35	40	35
R-Squared	0.05	0.85	0.84	0.26	0.30

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Firm panel data for Mindanao firms, Philippine manufacturing survey.

**TABLE 10: Fixed effects panel regressions**

	Dependent variable: ln (production employment)					
	(1)	(2)	(3)	(4)	(5)	(6)
	Large firms		Medium firms		Small firms	
ln(real minimum wage)	-2.215**	-2.536*	-0.077	-4.152	0.001	0.456
	(0.659)	(1.202)	(3.251)	(4.539)	(1.594)	(1.498)
ln(capital spending)		-0.025		0.153		0.061
		(1.202)		(0.085)		(0.035)
Direct export share to revenue		0.077		-0.643		0.358
		(0.188)		(0.559)		(0.253)
Electricity share to cost		-0.801**		3.871*		-0.204
		(0.227)		(0.560)		(6.455)
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	184	160	48	40	88	76
Number of Firms	23	20	6	5	11	10
R-Squared	0.77	0.76	0.67	0.73	0.63	0.65

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Firm panel data for Mindanao firms, Philippine manufacturing survey.

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