

Summary of
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Human Resource Inventory in Health, STEM, and Construction in Seven Origin Countries

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Summary of Link4Skills Working Paper:

HUMAN RESOURCE INVENTORY IN HEALTH, STEM AND CONSTRUCTION IN SEVEN ORIGIN COUNTRIES

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Introduction

This brochure-style summary distils the findings of Deliverable D3.1 of the Link4Skills project, which surveyed human resource inventories in three critical sectors – health, STEM, and construction – across seven origin countries: Ghana, Morocco, Nigeria, India, Indonesia, the Philippines, and Ukraine. The analysis was conducted under Work Package 3, which examines the capacity of origin countries to meet domestic and international labour demands, and informs the development of the Link4Skills Navigator tool.

The global context is one of demographic shifts, skill shortages, and intensifying migration. Europe and other ageing societies need more nurses, engineers, and construction workers, while many origin countries, despite producing large numbers of graduates, struggle to retain them. This report highlights both the opportunities and risks of these dynamics, and calls for strategies that balance fairness for origin countries with the legitimate needs of destination economies.

Demographic and Economic Context

The seven surveyed countries vary widely in size and development. India is home to 1.4 billion people, while Ghana has just 34 million. Nigeria and Indonesia are global demographic giants, while Ukraine faces a shrinking and ageing population exacerbated by war. All seven are classified as lower-middle or upper-middle-income economies, with growth trajectories ranging from India's projected 6.5% per year to Morocco's more modest 3.4%.

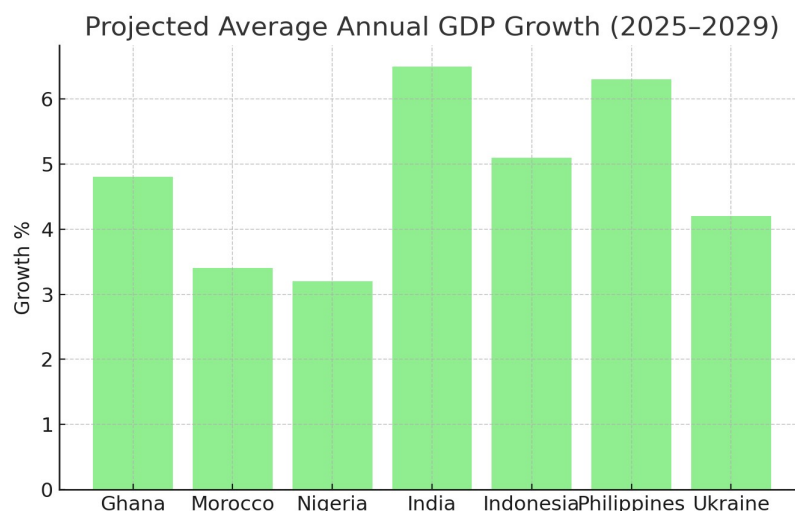


Figure 1 shows the projected GDP growth for 2025–2029. India and the Philippines stand out as high-growth economies, while Ghana and Indonesia are also projected to expand steadily. Morocco, Nigeria, and Ukraine face more modest growth, linked to structural challenges and, in Ukraine’s case, war impacts.

Healthcare Workforce

Healthcare is perhaps the most pressing sector. The World Health Organization recommends at least 4.45 skilled health workers per 1,000 people. As shown in Figure 2, only the Philippines and Ukraine (pre-war data) exceed this threshold. Ghana, Nigeria, Morocco, and India fall well below it, leaving their populations under-served. Even in countries with a strong supply of nurses – such as the Philippines and India – shortages persist, as many health professionals either migrate abroad or take up other jobs due to poor pay and conditions.

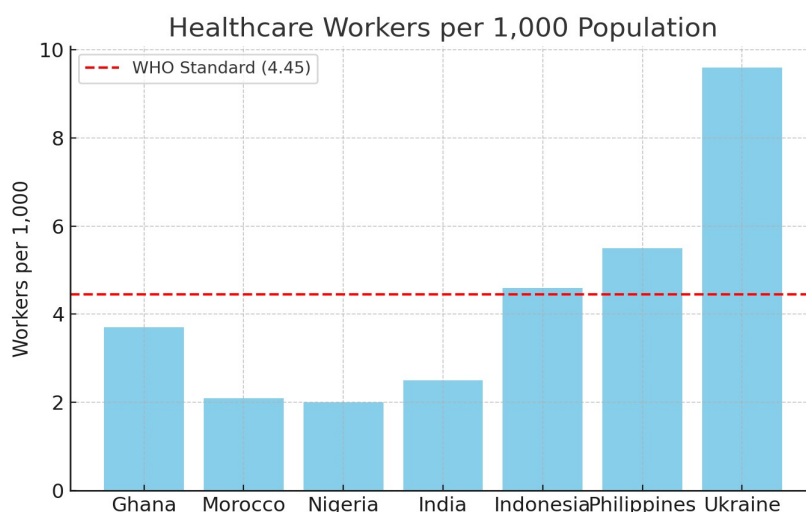


Figure 2 illustrates the disparities. Indonesia barely meets the WHO standard, while Ghana, Nigeria, Morocco, and India fall short. Ukraine’s pre-war figures suggest relative adequacy, but war-related displacement has since created new shortages. Ghana and Nigeria are now on WHO’s safeguard list, discouraging international recruitment of their nurses to avoid undermining their health systems.

STEM Workforce

Science, technology, engineering, and mathematics (STEM) are central to innovation-driven growth. India produces over 2.5 million STEM graduates annually, making it the world's second-largest source after China. Yet many of these graduates seek opportunities abroad. Indonesia, by contrast, faces an acute shortage of ICT specialists despite surging demand, while the Philippines suffers from an oversupply in some areas like ICT but deficits in others. Morocco and Ghana struggle with low engineer stocks, further eroded by emigration.

Construction Workforce

Construction workers are indispensable for infrastructure development and, in Ukraine, post-war reconstruction. Indonesia alone employs over 9 million in the sector, but most are informally employed with limited protections. Certification gaps are widespread, preventing workers from proving their skills and limiting international mobility. In the Philippines, demand for construction workers is rising domestically and abroad, creating shortages. Ukraine's construction workforce has shrunk dramatically due to war mobilisation and displacement, even as reconstruction needs escalate.

Migration and Brain Drain

All seven countries are net emigration countries. India has the world's largest diaspora, while the Philippines is among the top global labour exporters. Migration provides vital remittances but depletes skilled talent. Nurses, STEM specialists, and skilled builders are particularly mobile. This creates a dilemma: how to respect individual rights to mobility while safeguarding national development needs. Circular migration, diaspora engagement, and ethical recruitment agreements are among the tools policymakers can use to mitigate brain drain.

Policy Directions

The report highlights several avenues for action: - Invest in health, STEM, and construction training and certification. - Improve salaries and career prospects to retain workers. - Expand vocational training and formalize employment in construction. Negotiate ethical recruitment agreements with destination countries. - Promote gender equality and youth employment initiatives. - Leverage diaspora networks for skill transfer and investment.

Conclusion

The Link4Skills project underscores the urgent need for balanced solutions to global skill shortages. Origin countries are investing in training but struggle to keep talent at home. Destination countries rely on migrant workers but must do so ethically, without weakening origin economies. By combining strategic workforce planning, fair migration frameworks, and stronger cooperation, it is possible to transform brain drain into brain circulation – benefitting all parties.