
From Brain Drain to Brain Gain: Evaluating Policy Frameworks for Reclaiming Pakistan's Emigrated Intellectual Capital

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Abstract

Skilled workforce migrating from their home nation Pakistan for better opportunities, is now an important issue to discuss. The country is losing doctors, engineers, professors, technology specialists, researchers. Yet the issue can be mitigated in fact country can get benefits from brain drain. Brain drain can be converted into brain gain if the country makes effective policies, overseas networks, good infrastructure which can absorb knowledge transferred by emigrants, bring political and economic reforms in country which leads to foreign currency investment. Pakistan's strategies for getting benefits from emigrants, in shape of foreign currency, knowledge transfer, investment, training, is analyzed in this research paper through literature review. It states that Pakistan is unable to make a useful policy which can get help from the expertise of overseas Pakistani and use them for domestic development, mentoring, bringing up startup ideas, making medical care better in country, and making education sector better. Current policies such as overseas employment regulation, remittance facilitation, diaspora outreach, talent databases, and welfare policies provide a foundation, but they remain incomplete and weakly connected to hospitals, educational institutions, information technology, provincial governments, and research institutions. The paper suggests a brain-gain policy framework based on credible data, diaspora knowledge networks, circular migration pathways, global skill partnerships, return fellowships, diaspora investment instruments, and domestic reforms that make Pakistan professionally attractive for both returnees and non-returning expatriates.

Keywords: Outflow of Skilled Talent; Recovery of Intellectual Expertise; The Pakistani State; Overseas Pakistani Community Organizational Policy; Intellectual Capital; Skilled Mobility Across Borders; Brain Circulation; Financial Inflows from Abroad; Exchange of Expertise; Return Mobility Across Borders; Occupational and Intellectual Capital.

Introduction

Pakistan's brain drain debate has become a serious issue because the country is experiencing a visible rise in overseas employment registrations, skilled and professional categories are included. The Bureau of Emigration and Overseas Employment (BEOE) has data that since 1971 a huge number of 10 million emigrants have been registered for overseas employment, with 946,571 recorded in 2015, and 687,246 Pakistanis proceeded abroad for employment by November 2025 alone (Bureau of Emigration and Overseas Employment, 2025). Using the data of BEOE, Gallup

Pakistan reports that 727,381 Pakistanis registered for employment abroad in 2024 and that 14,114,918 Pakistanis registered for employment abroad between 1971 and January 2025 (Gallup Pakistan, 2025). Despite the exclusion of forms of migrations like, permanent migration, student migration, from these numbers, still the numbers show that overseas movement is an important practice in Pakistan's labor market.

The Pakistan Migration Report 2024 reports that highly qualified and highly skilled workers remained around 4 to 5 percent of registered outflows from 2019 to 2022, but increased to 8 percent in 2023, whereas unskilled and semi-skilled workers increased to 56 percent of the 2023 outflow (Global Institute of Development Studies, 2024). Gallup Pakistan also reports rapid increases between 2011 and 2024 in registrations by doctors, engineers, managers, and nurses, including a 151 percent rise for doctors, 172 percent for engineers, 990 percent for managers, and 2,144 percent for nurses (Gallup Pakistan, 2025). These patterns are important because these individuals are not only a private asset and beneficial for themselves. It is also a public investment found in universities, medical colleges, subsidized training, public-sector experience, professional networks, and national development needs. The term brain drain describes the loss of educated and skilled people from lower-income countries to higher-income countries. However, the newer literature argues that skilled migration can produce brain gain when emigrants remit, invest, mentor, build firms, transfer technology, open export channels, collaborate in research, or return with new skills (Docquier & Rapoport, 2012; Gibson & McKenzie, 2011; Saxenian, 2005). Docquier and Rapoport (2012) show that high-skill migration has become a major feature of globalization and that its effects are not automatically negative because networks and incentive effects can create development benefits (Docquier & Rapoport, 2012). Gibson and McKenzie (2011) similarly ask whether high-skilled migrants remit, invest, and provide opportunities, making the debate more complex than a simple loss narrative (Gibson & McKenzie, 2011).

For Pakistan, to think about stopping the migration, is not a good plan. This will become extremely problematic and will put a negative impact on country's economy. The main concern is that does the country have the kind of system which can produce gains from the knowledge those emigrants have with them. Does Pakistan have that bridge which connects emigrants with their home country, does the system works effectively so that these professionals can support easily without any hindrance or failure. Such a policy is needed that country converts knowledge of those experts into local development in all sectors, while those experts being in host countries.

Pakistan's Skilled Migration Challenge at a Glance

Indicator	Key figure	Why it matters
Registered overseas employment since 1971	More than 10 million officially registered by BEOE	Shows migration is a long-term labor-market structure, not a temporary crisis
Highest annual overseas employment registration	946,571 in 2015	Demonstrates the scale Pakistan can reach in outward labor movement
Registered for employment abroad in 2024	727,381	Shows continued high outflow after the post-Covid rebound
Highly qualified and highly skilled share	8 percent in 2023, up from 4 to 5 percent during 2019 to 2022	Indicates rising concern over professional and technical outflows

Indicator	Key figure	Why it matters
Notable professional increases, 2011 to 2024	Doctors 151 percent, engineers 172 percent, managers 990 percent, nurses 2,144 percent	Shows that the issue is not limited to manual labor migration

Source: Bureau of Emigration and Overseas Employment; Pakistan Migration Report 2024; Gallup Pakistan migration analysis ([Bureau of Emigration and Overseas Employment, 2025](#)).

Literature Review

Early economic models that viewed professional emigration as a loss of human capital are where the conversation about brain drain starts. Bhagwati and Hamada (1974) stated that the international movement of professionals can harm the country where the investment and other spending in education gives benefits to other countries which is not appreciated. Their work established a foundation for debates in future on taxation, compensation, and responsibility-sharing between sending and receiving countries. Miyagiwa (1991) added that brain drain affects different social groups unevenly. His model emphasized scale economies in advanced education and suggested that the loss of professionals can reshape benefits and returns for both migrants and non-migrants. This is relevant to Pakistan because professional migration may not harm all groups equally; the migration may harm groups like mid-career professionals, public hospitals, universities, and technical agencies because it would become difficult for them to easily replace experienced staff.

Mountford (1997) challenged the statement that brain drain is negative, he explained the positive side of brain drain. He stated that by seeing the possibility of going abroad people will be motivated and will start getting higher education and will learn new skills and languages in hope of going to other country. He further explained that not all persons get a chance to leave the country so automatically that skilled persons will serve in their own country and will benefit the economy. Stark, Helmenstein, and Prskawetz (1997) similarly argued that brain drain can coexist with brain gain when migration prospects encourage human-capital formation. Their contribution is important because it shifts the policy goal from preventing mobility to designing institutions that maximize the positive spillovers of mobility. Beine, Docquier, and Rapoport (2008) empirically examined education-specific emigration and found evidence that skilled migration prospects can stimulate human capital formation in developing countries, although it purely depends on the country's condition because for brain gain a complete plan is needed, if the country's education system is weak and if there are no jobs for people then the emigration will create loss rather than giving benefits.

Docquier and Rapoport (2012) reviewed decades of brain drain research and concluded that high-skilled migration can create connections and spread knowledge. Their review supports a balanced approach: Pakistan should measure the costs of professional loss but they should also find a way to capture the benefits they can still offer. (Docquier & Rapoport, 2012). Gibson and McKenzie (2011) synthesized evidence around eight major questions on brain drain and stated that migrants are still connected with us, they may remit, invest, and share knowledge with origin countries. Their work is quite relevant to Pakistan because the country already benefits from remittances, but it has not yet built proper systems to receive skills, innovations and business links that these migrants do have (Gibson & McKenzie, 2011). Saxenian (2005) developed the idea of brain circulation by studying Indian and Chinese engineers in Silicon Valley. She showed that how Indian engineers working abroad helping build tech companies in their own country through teaching and giving guidance to people (Saxenian, 2005). Pakistan can learn from this as many skilled workers are abroad and they can share their experiences to the people living in Pakistan so that the country benefits from it.

Kerr (2008) found that traditional scientific and entrepreneurial people in the United States help transmit technology to their Motherland via patent citations, knowledge diffusion, and scientific integration (Kerr, 2008). This assists the idea that Pakistan should treat its scientific and technical diaspora as a knowledge infrastructure, not only as a source of remittances. Agrawal, Kapur, McHale, and Oettl (2011) observed that if skilled emigration creates a brain drain or a brain gain. Their research found that emigration can make local knowledge networks fragile but also link remaining innovators with knowledge gathered in host nation (Agrawal et al., 2011). This is significant for Pakistan's universities and new business ideas emigrated experts can become a bridge for local infrastructure to benefit from external knowledge, if it has the potential to absorb that knowledge. Meyer and Brown (1999) suggested the scientific diaspora approach, discuss that migrant scientists can be unified for national development through networks rather than only through return. This idea can work perfectly for Pakistan, where permanent return can be challenging because of political uncertainty, family settlement, research funding, high incomes and professional conditions. Meyer and Wattiaux (2006) further developed diaspora knowledge networks as a way to convert scattered expertise into accessible knowledge resources. Their work assists that Pakistan needs sector-specific diaspora platforms in medicine, engineering, artificial intelligence, biotechnology, climate science, public policy, and higher education.

Kapur (2001) argued that Diasporas can be helpful for transferring technology, business, trade, investment, and reputation in global markets. For Pakistan, this means overseas Pakistanis can act as a bridge which connects local firms with international finance, export markets, venture capital, research labs, and professional standards. Miguélez (2018) argued international technology collaboration is influenced by inventor Diasporas. This is significant for Pakistan's development policy because the country's global patenting, university-industry collaboration, and research commercialization remain delicate. Diaspora inventors can help Pakistani researchers reach international labs, co-authorship networks, and applied innovation ecosystems. Mayr and Peri (2008) see return migration as a channel of brain gain. Their model is important for Pakistan because it considers that migration may be short-term, circular, or staged across a life cycle. A Pakistani engineer, doctor, or professor may leave for learning, gain some experience globally, and later return for entrepreneurship, consultancy, teaching, or public service.

Wahba (2015) studied returning of migrants to homeland and pointed out that migrants can bring funds in the form of foreign currency, expertise, and entrepreneurial ability. For Pakistan, return migration policy should've some significance, it must provide good opportunities, predictable rules, research funding, business support, licensing recognition, and professional respect. Clemens (2015) proposed the coordination between developing country's young talent and destination country's intellectuals as a policy strategy. This is particularly relevant for Pakistan in nursing, elder care, construction technology, engineering, information technology, and climate skills. The experts in host countries can support financially to make Pakistan's training capacity better which will also benefit Pakistan's local workforce. This is much better than just training people only for export. Instead of training people only for export. Sajjad (2011) studied reasons and remedies to expert brain drain in Pakistan, causes were higher salary, efficient working environments, equal opportunities, political stability, fair hiring, and diaspora networks as major themes. Her study also noted that there is need for a human-resource database in science and technology in every country, which remains a key loophole in Pakistan's current policy (Sajjad, 2011).

Farooq and Ahmad (2017) analyzed the drivers of highly qualified and highly skilled emigration from Pakistan to 27 destination countries over 36 years using a hybrid push-pull and gravity model. Their work shows that there are two reasons of skilled migration, one is domestic pressure and other is the pull force of opportunities by host countries, so policy should be made in a way so that it covers domestic governance issues and international labor-market linkages together

(Farooq & Ahmad, 2017). Afridi, Baloch, and Baloch (2016) suggested that if Pakistan provides infrastructure, political and economic stability then brain drain will convert into brain gain by help of diaspora networks (Afridi et al., 2016).

Zafar (2023) emphasized Pakistan's medical care sector brain drain and pointed out that the country is facing losses in medical professionals and the government is not getting much returns on their investment to make them professionals, because when they become expert at some extent so they migrate because they get better offers. The study is important because it emphasizes that the debate has changed now from overall migration to sector based migration specifically in health care because there is now shortage of professionals (Zafar, 2023). Rashid (2022) observed migration-relevant policies in Pakistan and identified a flaw which leads to confusion: Pakistan describes highly qualified emigration as brain drain while on the other hand relies on the migrants for foreign currency, investment, expertise transfer, and lobbying (Rashid, 2022). This inconsistency is the main problem in the policy. Pakistan won't be successful in building brain gain through these fragile ideas and dispersed schemes. Shah, Shahzad, and Quddus (2024) provide the most helpful recent statistical data through the Pakistan Migration Report 2024. Their findings show that most registered emigrants remain young talent and not fully professional, but the highly qualified and highly skilled contribution rose to 8 percent in 2023 (Shah, Shahzad, & Quddus, 2024).

Methodology:

Qualitative research design is used for this paper based on analysis of policy frameworks and narrative literature review. The method is appropriate because the research question is not only about observing the statistical data of skilled emigrants and also but about analyzing how Pakistan can convert emigrated intellectual capital into brain gain. The literature review consists of theory based studies on brain drain, statistical studies on skilled migration, Pakistan-specific research on professional emigration, and policy reports on international employment, diaspora engagement, foreign currency, and migration governance. The literature was analyzed through five themes: reasons of skilled labor emigration, disadvantages to the home country, possible channels of brain gain, current Pakistani policy feedback, and gaps between policy design and implementation. The analytical framework contains human-capital perspective, brain gain theory, overseas skilled professional's network theory, and policy coherence analysis. Human-capital perspective helps assess what challenges Pakistan face when they invest in people and then they leave their home country. Brain gain or brain circulation theory helps examine whether those challenges can be overcome through short-term return, virtual contribution, and unification of skilled professionals. Diaspora network theory helps assess how overseas Pakistanis can pass knowledge, investment, startup opportunities, institutional credibility, and market access without permanent return. Policy coherence analysis is used to analyze whether Pakistan's current policies relates with migration, higher education, science and technology, medical-care, finance, overseas Pakistanis, and infrastructure.

The study is not based on primary interviews instead it's done by the help of published sources. This is a limitation because it does not directly determine the aims of emigrated Pakistani professionals or the real-world effectiveness of individual programs. However, secondary analysis is suitable for a policy-oriented paper because the available literature already identifies repeated patterns: Fragile local opportunity, political and economic instability, inefficient research infrastructure, low salaries, unfair recruitment, host-country demand, remittance dependence, and weak diaspora engagement. The paper therefore examines Pakistan's policy frameworks according to their ability to analyses these repeated patterns.

Literature-based brain-gain pathway for Pakistan

Stage	Problem	Policy conversion mechanism	Brain-gain outcome
1. Skilled worker leaves Pakistan	Loss of expertise in hospitals, universities, firms, and public institutions	Diaspora registry and skills mapping	Pakistan knows where talent is and what expertise it holds
2. Migrant settles abroad	Weak connection with home institutions	Sector-specific diaspora networks	Experts remain connected without needing permanent return
3. Migrant accumulates income and knowledge	Remittances remain mostly household consumption	Diaspora bonds, venture funds, research grants, startup co-investment	Remittances become productive investment
4. Migrant gains global experience	Knowledge remains outside Pakistan	Remote teaching, telemedicine, visiting professorships, advisory boards	Knowledge transfer to local professionals
5. Migrant considers return or circular work	Return is risky because of instability and weak institutions	Return fellowships, licensing recognition, tax incentives, tenure-track roles	Temporary or permanent return becomes practical
6. Local institutions absorb expertise	Weak research and innovation ecosystem	University-industry partnerships, hospital training networks, technology parks	Brain gain becomes institutional rather than symbolic

Source: Synthesized from Docquier and Rapoport (2012), Gibson and McKenzie (2011), Saxenian (2005), Kerr (2008), Agrawal et al. (2011), Sajjad (2011), Afridi et al. (2016), Rashid (2022), and Shah et al. (2024) ([AEAweb](#)).

Discussion and Analysis

Weak policy framework is the main resource of country's brain drain. Pakistan produces educated people, most of them seek better offers abroad, and the country receives remittances by those educated people. The policy system is not good enough to convert those people's skills into a bridge between both countries to transfer knowledge, business ideas, finance, training, or research capacity. This creates a narrow migration model: people leave, and they send money, but other important things like expertise and does not return at the scale which Pakistan deserves. The remittance framework is Pakistan's strongest diaspora-related mechanism, but it is not enough to make Pakistan reach brain-gain framework. State Bank of Pakistan research describes Pakistan as the fifth-largest receiver of foreign currency globally and notes that remittances exceeding \$30 billion in recent years have become a stable source of foreign exchange (State Bank of Pakistan, 2026). Remittances are beneficial because they support families, improve consumption, help manage external-account living standards, and provide foreign exchange. Yet remittances alone cannot repay for the loss of doctors, engineers, scientists, PHD holders, technology entrepreneurs, and policy makers. A doctor sending money from the United States of America does not solve Pakistan's shortage of specialists in public hospitals. An engineer working in the Kuwait does not

automatically upgrade his home country's manufacturing. An academic in California does not automatically improve research supervision in Pakistani universities. Brain gain requires intentional channels beyond money.

Pakistan has made some efforts to engage in some diaspora networks. Rashid (2022) observed crucial steps such as Pakistan Banao Certificates, Roshan Digital Accounts, the National Talent Pool, and Naya Pakistan Calling, but again the question rise about implementation and whether registered professionals were later engaged in specific government projects (Rashid, 2022). The challenge Pakistan is facing from decades that it has a very weak implementation system, the policies exist, the legal framework exists but the implementation is very weak. Pakistan makes all the pathways but the official body is missing who can make people walk on that path. When the emigrants see the weak funding system, lack of accountability, absence of data, lack of interest by the government, projects without plan, so they automatically lose interest too and don't give that much importance. At the same time, the state worries about doctors, engineers, and other professionals leaving. Rashid (2022) describes this as a confused situation where the state considers highly qualified migration as brain drain while are also heavily dependent on foreign currency sent by those overseas Pakistanis (Rashid, 2022). The solution is not simple, it is like a tree with many branches Pakistan needs to make a separate policy for migrations because you cannot consider a skilled migrate and a student migrant as same, they are quite different. Pakistan needs a different policy for low skilled, semi-skilled, highly skilled, student, professional, and permanent migrant. All these migrants have different goals, different perspectives, they cannot be seen a one body structure they all are different and policies should be different for them.

Medical care shows the cost of failing to differentiate. Zafar (2023) argues that Pakistan's medical brain drain creates a huge problem as there is a lot of shortage of specialists and the returns are not good enough as the state invested on their training (Zafar, 2023). Afridi et al. (2016) says that the healthcare diaspora can assist Pakistan through brain circulation, but only if local infrastructure, political stability, economic stability, and strategic policies exist (Afridi et al., 2016). Pakistan should work immediately on brain gain in healthcare. The first priority should be offering them to return to Pakistan, and the doctors who are working abroad, a network should be made which connects all the medical professionals with each other. Pakistan must have the data that how many doctors and nurses are working abroad and bring them on a single platform, then a virtual check-up system for patients should be created, reviewing cases online must be started. They should mentor the people in Pakistan who are researching, medical faculty exchange program should start. Education sector is facing the same problem, many highly educated professors are migrants now, who can be supervisors for PhD students, and they can publish papers and contribute in ministry of Education and bring positive reforms in education. But universities don't have enough funds to hire experienced professors and PhD holders, they are unable to pay visiting faculties. To overcome brain drain in education requires frequent appointments, virtual teaching platforms, research clusters, international co-supervision, extended leaves return schemes, and fair recruitment. Without these initiatives, Pakistani academics brain drain will increase rapidly instead of decreasing.

Technology and entrepreneurship without any doubt offer the strongest opportunity. The global literature shows that diaspora communities can transfer knowledge and market access through networks. Saxenian (2005) emphasizes how Chinese and Indian engineers contributed to domestic development through Silicon Valley connections (Saxenian, 2005). Kerr (2008) shows that traditional scientific communities can support international technology diffusion (Kerr, 2008). Agrawal et al. (2011) show that emigrants can become a "brain bank" by connecting local entrepreneurs to global knowledge (Agrawal et al., 2011). Pakistan can use these lessons by building diaspora communities, trainers, emigrant's investors, professionals exchange programs, globally based startups. If the country has poor infrastructure which cannot absorb the overseas

expertise, then the brain gain is impossible to achieve. It is useful when country's condition is stable and predictable. Universities need to have modern laboratories, researches must be done often and researchers should be respected, there need to be up to date hospitals, the recruitment in government should be totally fair and on merit. For getting benefits from abroad, reforming country's economy, politics, and other sectors, is the first step. Higher pay is not the only reason that people are migrating, there are so many other reasons, and among them are instability, security, poor infrastructure, less opportunities, no fair recruitment. These are the reasons due to which Pakistanis are leaving the country and they are being offered a lot of opportunities, security, better workplaces, merit, and many more things in destination countries. Sajjad (2011) observes that these things are essential for brain gain

Pakistan need to have a proper data, many people have migrated but not all of them migrated for a same reason, some go for studying, some for work, some go for settling permanently, so there are so many different categories. BEOE has the data of number of migrants only which is incomplete. All the important things are missing for example: which destination country they have chosen, how many students are and for how much time they are gone, how many doctors are in USA and in UK, how many people have gone permanently and how many have gone temporarily. The data of shortages in home country is much needed. There can be many more categories, so there should be separated data so that different policies should be made for different groups, a policy for doctor cannot be implemented on student. Pakistan should not only just rely on remittances, it should work on making strong and effective diaspora networks. If any country needs doctor or engineer from Pakistan so Pakistan should make a deal with that country that the doctor will be provided but in return the experts in that country will give remote trainings to youngsters in Pakistan.

The Pakistan migration report 2024 tells us that 1% of skilled female have left Pakistan in 2023. Which is a small number but the difference is unlikely to male, who are skilled, highly skilled, semi-skilled, the ratio of semi-skilled is high in male but in women all the migrants are highly skilled which brings another challenge for Pakistan (Shah, Shahzad, & Quddus, 2024). This data tells us that female migration is not much but quite important because all are highly skilled, this will put negative impact on young females in Pakistan who are looking for to enter professional life. All the women who could've motivated the young talent now have migrated. Brain-gain policy should include safe migration support, recognition of female professionals, childcare-aware return fellowships, remote work opportunities, and protection from exploitative recruitment.

Evaluation of Pakistan's current brain-gain policy framework

Policy area	Current strength	Main weakness	Reform priority
Overseas employment regulation	Strong historical registration system through BEOE	Does not fully capture all professional, student, permanent, and irregular migration	Build a national skilled-migration and diaspora observatory
Remittance facilitation	Strong foreign-exchange contribution and formal-channel incentives	Remittances are not automatically converted into innovation or knowledge transfer	Link remittances to diaspora investment, venture funds, and research finance
Diaspora outreach	Existing schemes and emotional connection with overseas Pakistanis	Fragmented portals and weak project follow-through	Create sector-specific diaspora missions with measurable outputs

Policy area	Current strength	Main weakness	Reform priority
Return migration	Patriotic appeal exists	Return is risky without stable careers, merit, research funds, and licensing support	Launch return fellowships, circular appointments, and fast-track recognition
Healthcare brain gain	Large medical diaspora	Domestic shortages and weak hospital-university linkages	Build telemedicine, visiting specialist, and faculty exchange networks
Higher education brain gain	Many overseas academics willing to contribute temporarily	Weak institutional absorption and bureaucratic hiring	Fund joint supervision, visiting chairs, and diaspora research clusters
Technology and startups	Strong diaspora in global tech markets	Limited venture capital, weak IP support, and weak global market access	Create diaspora-led accelerators and export mentoring programs

Source: Author's synthesis based on policy and literature review; underlying sources include BEOE, Pakistan Migration Report 2024, Rashid (2022), Afridi et al. (2016), Sajjad (2011), and State Bank of Pakistan research (BEOE).

Conclusion and Policy Recommendations

Brain drain has become a challenge for Pakistan but if Pakistan work on its infrastructure, and policies then the brain drain can be solved and replaced by brain gain. Pakistan should work on domestic development, making country's political and economic condition better so that emigrants can invest without any doubt. The online networks or websites should work efficiently so that the professionals abroad can be stay connected 24/7. Pakistan have lost their talent physically but they can get advantages from their experiences.

The first policy recommendation is to establish a National Brain Gain and Diaspora Knowledge Commission. It should be a technical agency linked to the Ministry of Overseas Pakistanis and Human Resource Development, Higher Education Commission, Ministry of Science and Technology, Ministry of National Health Services, Board of Investment, provincial governments, and private-sector bodies. Its main purpose should be to identify high-value diaspora expertise and match it with domestic projects. Second, Pakistan should create a National Skilled Migration and Diaspora data center. The center should track high skilled outflows, student migration, return migration, sectorial shortages, host nations, diaspora expertise, and contribution outcomes. It should combine BEOE data with university, professional council, passport, visa, and labor-market data while protecting privacy. A serious policy is incomplete without these measures discussed above

Third, Pakistan should shift from general diaspora outreach to sector-specific diaspora knowledge networks. Separate networks should be built for medicine, engineering, information technology, artificial intelligence, agriculture, climate change, biotechnology, public policy, Accounting and finance, and higher education. Each network should have specific projects, Pakistani institutional partners, digital collaboration tools, annual goals, and transparent data for public. Fourth, Pakistan should launch circular migration and return fellowships. Many overseas professionals will not return permanently, but they may return for ten days, two months, one semester, or one year. The government and universities should fund visiting faculties, hospital specialists, startup mentoring residencies, public-sector policy makers, and research commercialization missions. The policy should reward temporary contribution rather than considering permanent return as the only achievement.

Fifth, Pakistan should take steps for global skill partnerships. Host countries that need Pakistani nurses, technicians, engineers, software workers, and healthcare professionals should assist training capacity in Pakistan. A fair model would train more people than migrate, ensuring that Pakistan's domestic workforce also grows. This is especially important in nursing, elder care, green energy, construction technology, and digital services. Sixth, Pakistan should convert the money which is sent by overseas Pakistanis, into productive diaspora investment. Funds from overseas are significant, but policy must go beyond family transfers. Pakistan should encourage these diaspora networks to invest in country, to invest in development projects, buy properties, fund universities. Pakistan should present interesting schemes to them so that they can spend their money in homeland. These projects and schemes must be transparent and government must be accountable to overseas that where the money is being spent.

Seventh, Pakistan must work on making its institutions better. Specially education and healthcare sector. The country should offer opportunities and fair recruitment to overseas so that they can return. Professors should be given funds to conduct researches, and investment on upgrading labs is most important. Stability and security will attract overseas experts. These things will make brain gain possible. The best diaspora policy is dependent on a domestic reform policy. Eighth, medical sector should receive urgent priority. Pakistan should create an overseas Pakistanis network which support virtual healthcare, postgraduate training, remote grand rounds, equipment partnerships, and research collaboration. The policy should especially target specialties with domestic shortages. Ninth, higher education is an important sector. Pakistani universities should be allowed and funded enough to appoint migrant Pakistani professors as visiting faculties, co-supervisors, and research mentors. Promotion systems should reward international collaboration and give them opportunities to work abroad with international professors and applied research rather than only institutional level seniority.

Finally, Pakistan should analyze brain bank by results, not policies. Important indicators are the number of skilled migrants engaged in projects, students supervised by overseas professors for their PhDs and MPhil, patents and publications co-produced, startups mentored by experts, hospital trainings delivered, return fellowships completed, remittances invested on right place, and professionals preserved in shortage sectors. Without measurement, brain-gain policy will remain useless. Pakistan's emigrated intellectual human capital is scattered not lost we need to just gather them unite them and bring them to a single platform. The main task is to build trusted bridges between that dispersed talent and Pakistan's institutions.

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