Expected Time to Achieve SDG 4.6: A Disaggregated Data Analysis for Pakistan

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Abstract

Achieving the sustainable development goals is a massive task but not an impossible one. Can we achieve these goals during the next 13 years? To answer this question, we need to benchmark where Pakistan is today and to figure out how far we have to travel? We have discussed challenges regarding SDGs with reference to data in general and have figured out expected distance to achieve universal literacy goal under SDG4 in particular. Our results show that it is not possible to achieve SDGs using business as usual. Pakistan will hardly be able to achieve 100% literacy even after 100 years of its birth. There is lot of hetrogeniety among provinces, urban and rural population, and between male and female. Some districts have literacy rate around 85% while there are other which have female literacy rate even below 20%. To address these challenges such that "No One is Left Behind" is a gigantic task. However, we believe that learning lessons from districts with significant improvement in literacy over past two decades, strong commitment, academia technical assistance and making governments accountable at levels, these goals are achievable.

Keywords: SDGs, Disaggregated Data, Data Revolution, Evidence Based Decision Making, Leave No One Behind

Introduction

The Millennium Development Goals (MDGs) are the world's time-bound and quantified targets for addressing extreme poverty in its many dimensions-income poverty, hunger, disease, lack of adequate shelter, and exclusion-while promoting gender equality, education, and environmental sustainability. They also include maternal health, child mortality and global partnership for development (United Nation Development Programme [UNDP],2005).

By following the UN Conference on Sustainable Development (Rio+20), in June 2012, UN Member States have been working to create the Sustainable Development Goals (SDGs) to follow

on from the MDGs. The SDGs have become the blueprint for development policy and funding since 2015.

The 17 global goals known as Sustainable Development goals (SDGs) were officially declared on 25 September 2015 at the United Nations (UN) Summit on Sustainable Development. These goals will guide the world in tackling the most pressing problems of sustainable development until 2030. For the next fifteen years, the goals are universally applying to all countries to put up the efforts towards the economic development, social inclusion and environmental sustainability. SDGs are universal and apply to all countries whereas MDGs were intended for action in developing countries only. The call for SDGs is for all countries; poor, rich and middle income countries (Nations, 2016). The global goals are inspirational for all to adopt, implement and eradicate extreme poverty, hunger and work in good education, health, social protection, climate change and environmental protection.

SDGs is the global agenda to move towards progress collectively on different aspects. The 2030 Agenda is a new plan of action for people, planet and prosperity, with **17 SDGs** and **169** associated targets and **241** indicators at its core. Details are given in Fig.1.

The intention of sustainable development is to balance the economic, environmental and social needs, letting prosperity for now and future generations. Sustainable development implies economic growth together with the protection of environmental quality, each strengthening the other. Sustainable development comprises of a long-term, cohesive approach to developing and achieving a healthy community by jointly addressing economic, environmental, and social issues, whereas avoiding the over consumption of key natural resources.

Figure.1: Sustainable Development Goals
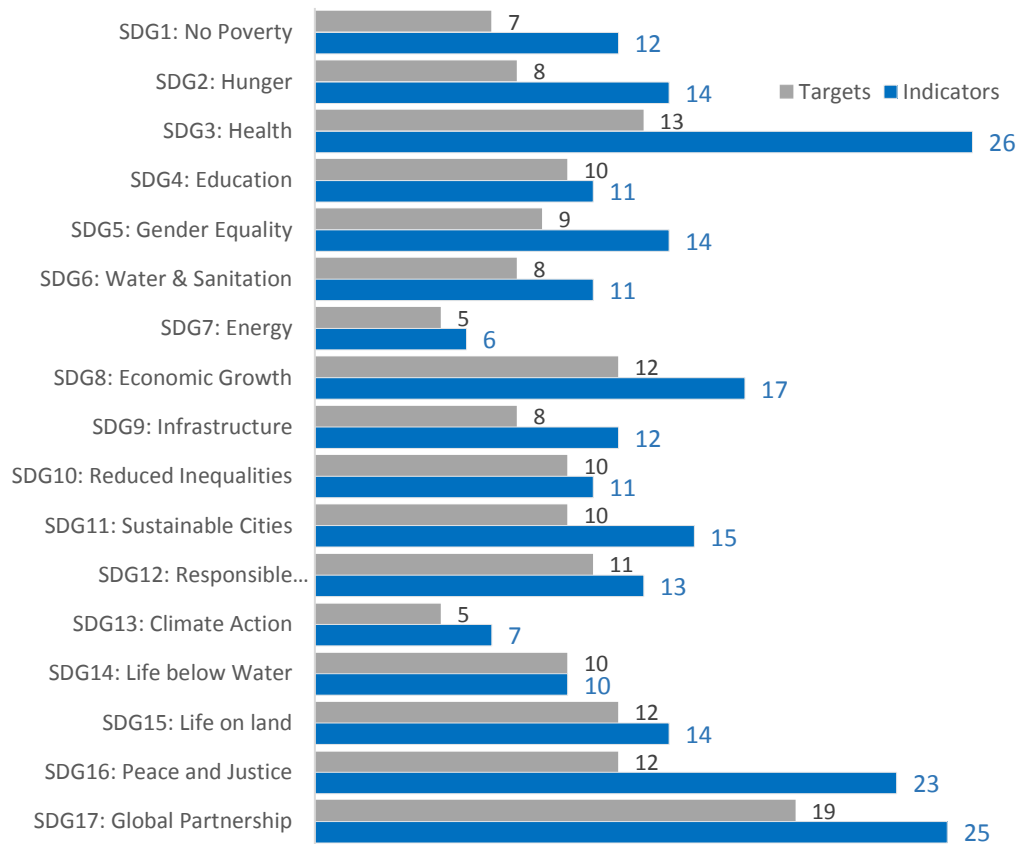
Building on the success and momentum of MDGs, the new goals are very ambitious for most of the countries to cater inequalities, oceans, eco systems, energy, climate change, health, education, cities, production, peace and justice. Every country has the responsibility to follow up and review the progress towards achieving these goals which essentially requires timely, accessible and quality data. Pakistan has also adopted SDGs and declared them as its national agenda. Success rely on country's own sustainable development polices, plans, technical expertise and programs.

It is important to assess Pakistan position with respect to different goals, and execute strategies accordingly to achieve these goals by utilizing its maximum energies, we have set our **objectives of this study** to discuss data challenges for SDGs, assess expected distance to achieve SDG#4 of achieving 100% literacy. This is a unique study in its nature which has utilized past 20 years' data extracted from nationally conducted surveys to measure the literacy rate at district level. We highlight why disaggregate data is the need of the hour. Rest of the paper is orgranised as follows. Section 2 is about data challenges for the SDGs. Section 3 is about the SDG#4, data

for this sub-indicator 4.6.1 at national, provincial and districts level. Section 5 is about projecting past trends into future and finding out expected distance to achieve SDGs and finally we conclude our findings with some policy recommendation to achieve education for all.

2. Challenge: *"Data=SDGs"*

As data are the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time; designing, monitoring, and evaluating effective policies becomes almost impossible.

Political commitment is of course one of the most serious challenge. But there are some technical issues and without having these technical issues resolved, governments can't do much even if they wish. The most and serious challenge in the SDGs is about **availability of data** and this is most serious for developing countries like Pakistan.

Census data will hopefully be available in 2018 but it will provide data on a very few indicators. The national level surveys in Pakistan such as Pakistan Social Living Measurement Survey (PSLM), Pakistan Demographic Health Survey (PDHS), Mixed Indicator Cluster Survey (MICS) carried out by provinces, and Labor Force Survey(LFS) are some of the main sources of official data which one can use to develop baseline indicators for the SDGs. However, most of the indicators for SDGs are not available in these surveys. Moreover, it is not only that we need data but we also need it at disaggregated level. We can only get data for approximately **30 indicators** at district level using currently available official data sets.

The question of data has great significance as data is crucial not only its availability but the validity and the frequency. The frequency of availability plays the key role to integrate the real phenomena. Similarly, disaggregation at sub -national level is an essential requirement to improve decision making and to achieve the agenda **"Leave No One Behind".**

Data is often insufficiently disaggregated at sub-national level, making it hard for policy makers or communities to compare their progress with that of other communities or the country. For example, Pakistan literacy rate is around 60% but should it expected distance to achieve literacy rate target using national data when some of its federating units have literacy rate far lower than national level. Moreover, there are gender and urban-rural disparities. So, we are no stronger

than our weakest link and until the weakest link achieves the target, we cannot achieve the target at national level.

SDGs implementation requires the data gaps to be filled and need to cater what mechanisms are required to maximize the use of data, statistics and evidence for data driven policy. The call for that "*Everyone should be visible in data*" needs disaggregated data to make inclusive policies. A way to achieve 2030 agenda, a way to progress is possible only if we have reliable, accessible, consistent and easy to use data available on the indicators of SDGs. To utilize the full potential of data we must invest in collecting, processing and analyzing real time data using modern tools. It is said that **"*Data=SDGs*"**
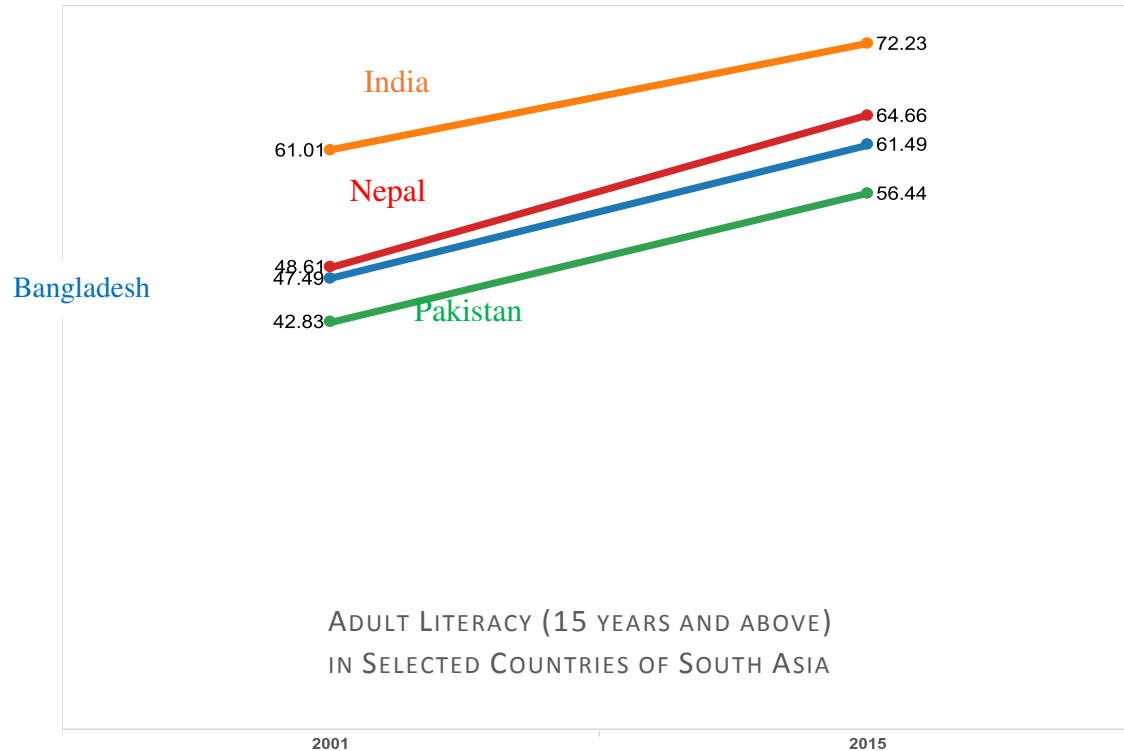
3. Goal 4: Ensure inclusive and quality education for all and promote lifelong learning

Journey to sustainable development for developing countries like Pakistan begins with education. Universal literacy rate will lead to a progressive state where every child and adult will be literate and can play its part in the progress of the state. In Pakistan, only 20% of 20- to 22-year-olds had completed upper secondary school in 2012.[2] The world's deprived children are four times less expected to go to primary school than the world's richest children (The United Nations Educational, 2015). In Fig.2. Pakistan has not as much increased its Literacy rate since 2001, even Nepal is little bit better. While India is having high literacy rate relatively to other countries. Bangladesh is even performing better than Pakistan.

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[2] http://www.education-inequalities.org/

Figure 2: Literacy Rates 2001-2015

As mentioned above our main focus in this document is to assess issues in the SDG in general and SDG4, in particular. SDG 4 is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. It has 10 targets and 11 indicators. Two of the MDGs (MDG2.3 and 3.1) are also now the part of SDG 4 which include youth literacy and ratio of girls to boys in primary, secondary and tertiary education

While looking at the indicators in the framework of Pakistan, the view comes with only seven indicators out of 11 for SDG 4 in the context of availability from national representative surveys including PSLM, MICS, PDHS. These indicators are not fully covered as per demand due to limitations. Question of availability needs significant attention. The indicators are 4.1.1,4.2.1,4.2.2,4.3.1,4.4.1,4.5.1, 4.6.1. There are number of limitations as the proficiency is required for few indicators so it is not possible to cover from national representative surveys as well the disaggregation by disability, indigenous people and conflict areas is neither available nor possible.

Similarly, the participation rate for non-formal education is not available in any survey which is representative at national level. Many of the indicators require disaggregation by

gender because the goal is inclusive and equitable education for all. So, gender disparity is in focus and easily covered. The information is available from multiple sources. Another aspect, as mentioned in section2, is availability at sub-national level and district level. There is dire need to cater this issue to evaluate the acceleration towards the current scenario of our country.

SDG 4 target 4.6 states "*By 2030, ensure that all youth and a substantial proportion of adults, both men and women, and achieve literacy and numeracy*". Proficiency level is not catered here as data only support for literacy. Literacy is defined as the person that can read and write and it is measured for age group of 10 years and above. The proficiency level is not available in our national representative surveys and merely possible in the scope of these surveys. SDG 4 comprises of mostly quality based indicators.

Literacy for 10 years of age and above is measured, and we find out the expected year to hit this target at national, provincial, region. Moreover, we have measured it gender wise as literacy rate in all provinces for male is higher than that of female. The source for the data are PSLM for 2004-15 and Pakistan Integrated Household Survey(PIHS) for 1995-2002 (Government of Pakistan, 2016). As PIHS was replaced by the PSLM agenda in 2004. So, it was 20 years of times series data for National/Provincial by region. Although for district level analysis, it was from 1998-2015. For year 2000 and 2003 data was not available. It is interpolated for these missing years.

Fig.3. provides quick snapshot of literacy rate in 1995 and 2015 both at National and Provincial level. Baluchistan needs special attention for overall literacy rate as it is its number is significantly lower than national average. Fig.4 provides more detailed story/trend of literacy rate over 20 years which shows trend over the past 20 years.

Figure 3: Literacy Rates 1995-2015
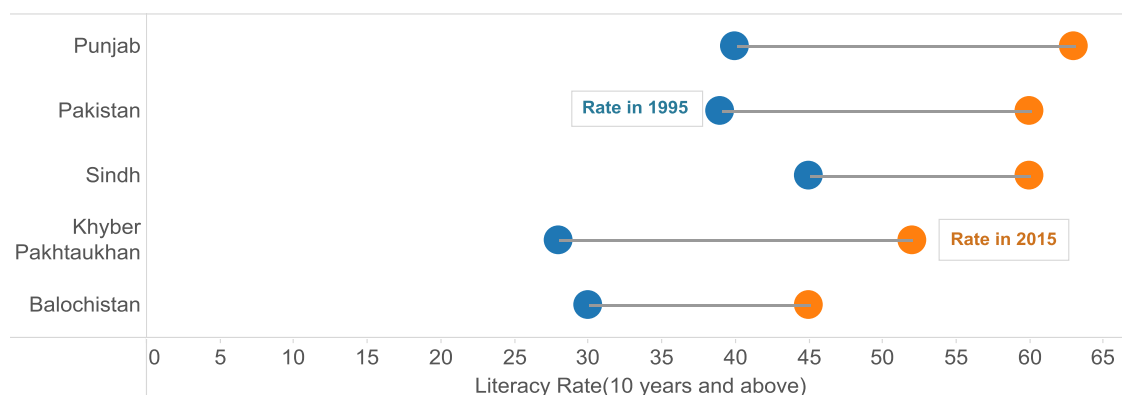
Figure 4: Literacy Rate over 20 years for Pakistan and its Provinces
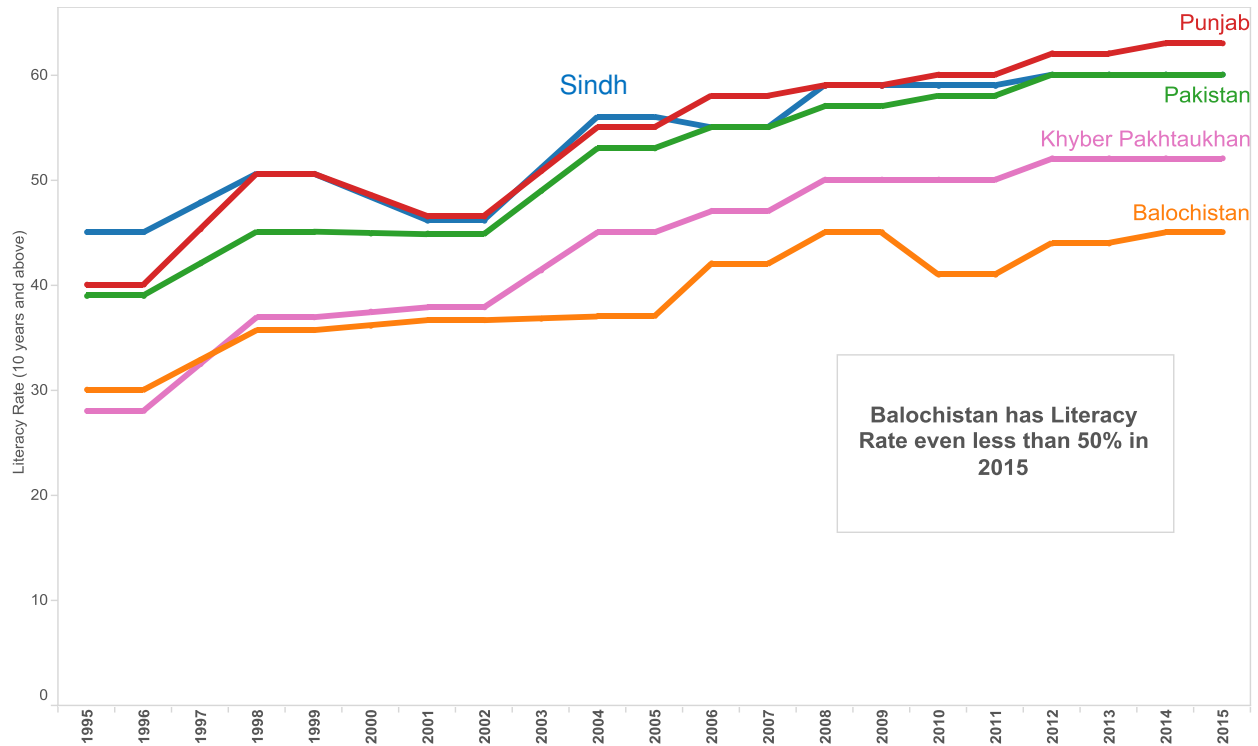
The question of whether Pakistan is on the track and will it achieve 100% literacy target by 2030 or not, is catered here by having some standard estimation procedures (Asian Development Bank [ADP], 2015). Projecting this past trend into the future will help to assess where do we stand. This subnational level analysis signifies the importance of data driven policy.

3. Analysis and Results

The methodology includes a linear regression with one independent variable t which is the difference between the observed year and mean year from all years included in the analysis. The dependent variable y, is the literacy rate for all years. The dependent variable, y, is either a log or logit transformation of the SDG indicator, depending on the type of indicator.

$$Y= \log (\hat{y}/ 1-\hat{y}) \text{ if } \hat{y} \text{ is proportion} \qquad (1)$$

$$Y=\log(\hat{y}) \text{ if } \hat{y} \text{ has an odd ratio}$$

The regression model becomes;

$$Y = r_1 t + r_0 + e_t \qquad (2)$$

Where r_1 is the rate of change, r_0 is the intercept and e is the error term. The regression model for literacy rate is used to estimate the expected distance to achieve the SDGs at national, provincial and district level by region and genderwise.

The 95% confidence interval are also calculated. The provinces and districts were then categorized based on their corresponding Target:

Highly likely – the entire 95% confidence interval of y Target is between 2015 and 2030;

Somewhat likely – only part of the 95% confidence interval of y Target is between 2015 and 2030;

Highly unlikely – the entire 95% confidence interval of y Target is beyond 2030;

Near impossible – the rate of change r_1 is against. The expected rate of change (for example, the slope for Shangla and Bonair is negative even though it is expected to be negative); so that the regression model cannot predict the achievement of target at all unless the rate of change reverses. Already achieved – the target has been achieved before 2015 (ADP, 2015; Haw, 2015).

**Figure 5: Expected year for Pakistan with disaggegations**
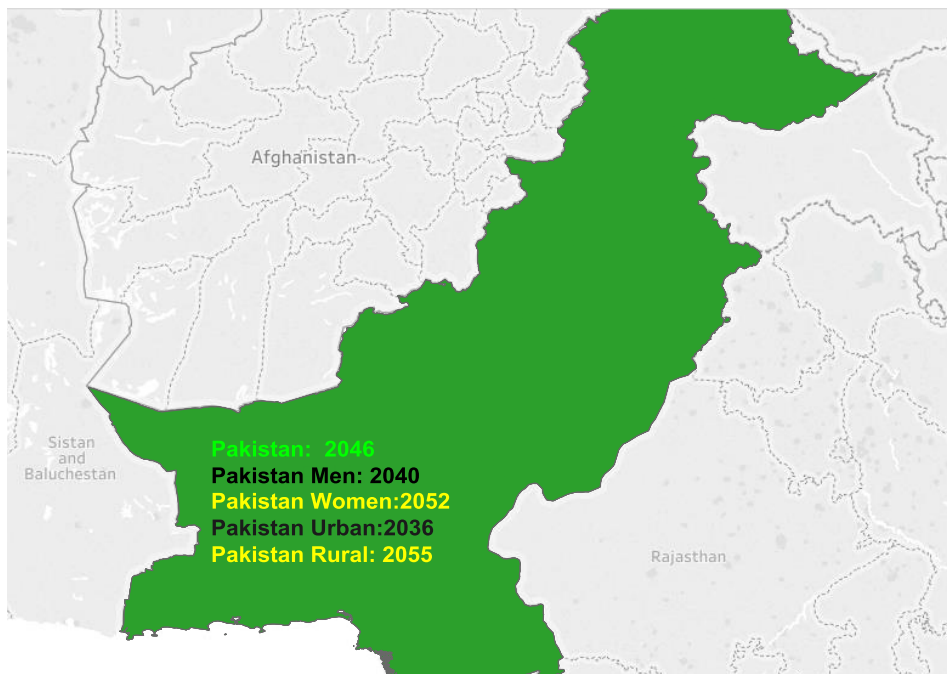
We observe that if business as usual, Pakistan is not likely to hit this target by 2030. It is far away from achieving the target. Pakistan is expected to achieve 100% literacy in 2046, only a year before celebrating 100 years of its birth. It is also disaggregated by gender and region. Pakistan rural and Pakistan women are not likely to make it 100% neither by 2030 nor by 2049. In Pakistan, 50% of women are illiterate by 2015 and this highlights limited role of women in progress of the country. Disaggregated data at sub-national level indicates women literacy rate is even less than half of that of national level in some provinces. Gender disparities is a great challenge in Pakistan while rural areas require more assistance.

Fig.6. elucidate the disaggregated scenario of Pakistan by gender and region. It shows significant gender and regional differences Therefore, it is requisite to revamp the policy to make it by 2030 by leaving no one behind in Pakistan.

**Figure 6: Literacy Rates (1995-2015) in Pakistan for men vs women and urban vs rural**
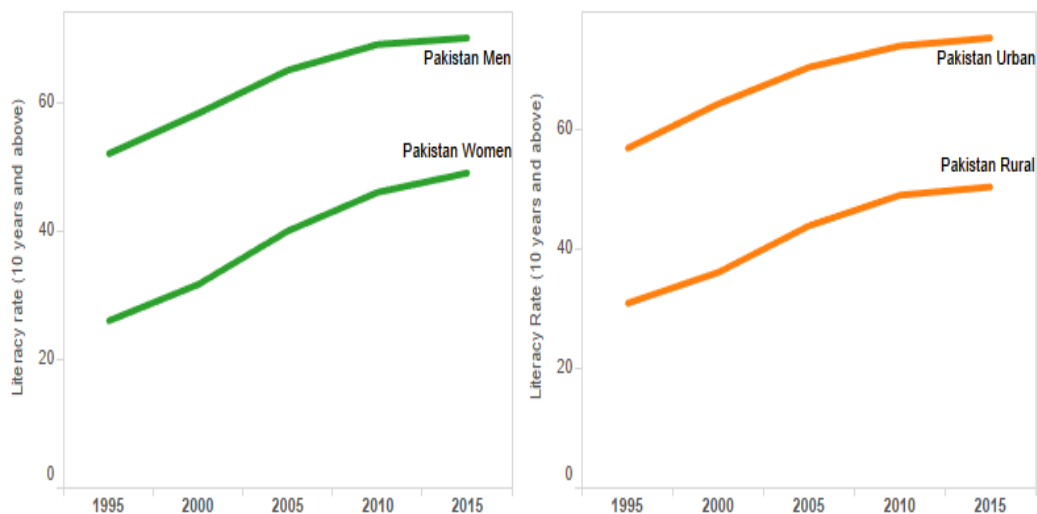
Figure 7: Expected year to achieve 100% literacy rate (10 years and above)
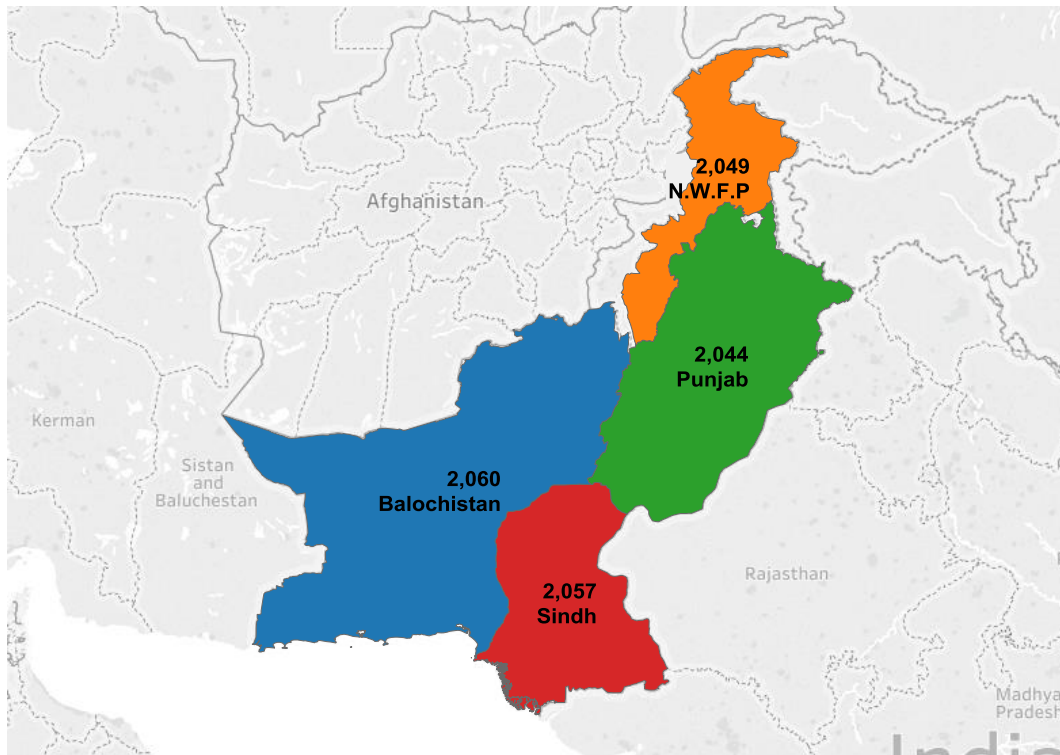
Pakistan not likely to nail down this target by 2030 at provincial level if past trends continue. *The aggregate data is not very helpful as we observe provinces literacy rate and national litracy rate are significantly different from each other.So aggregate estimate cant be used for evidence based policy making as it fails to address heterogeneity.*

Fig.3 indicates that Sindh has high literacy rate that that of KPK but Sindh will achieve the target no sooner than KPK because its rural and rural-female literacy rate is very low. Even Punjab despite it relative better performance has great challenge of meeting the target when it comes rural and female literacy rate. To meet the objective of education for all, each province should be considered in its own perspective. Same is true for each district within a province.

**Figure 8: Literacy Rates among men and women in 2015**
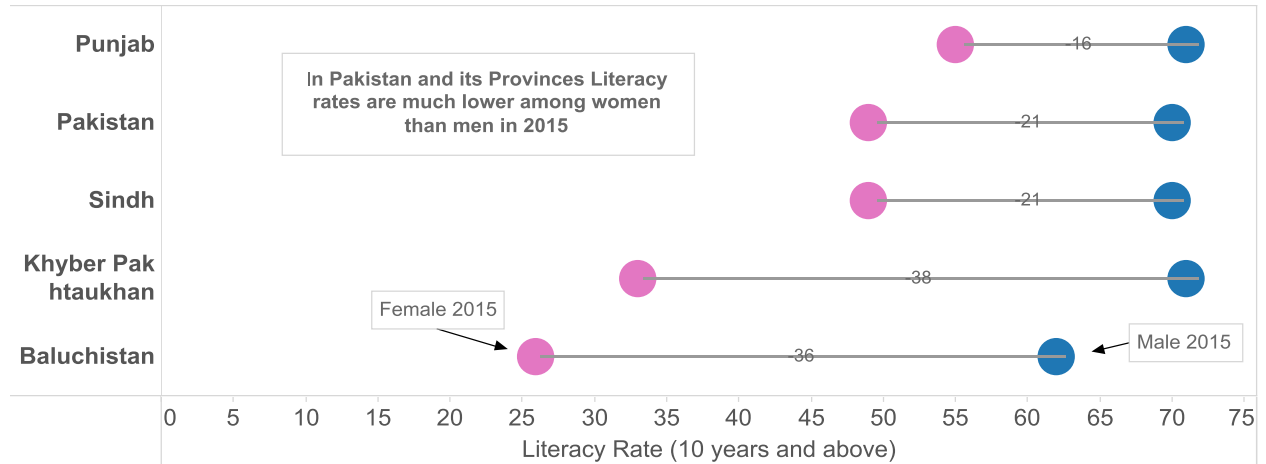
The scenario becomes quite more interesting when it is disaggregated for male and female because this target is intensely focused on inclusive education negating disparities. Literacy rate among women is low in provinces indicating that our women are left behind. KPK, Baluchistan, rural Sind and rural Punjab have very low literacy rates among women.
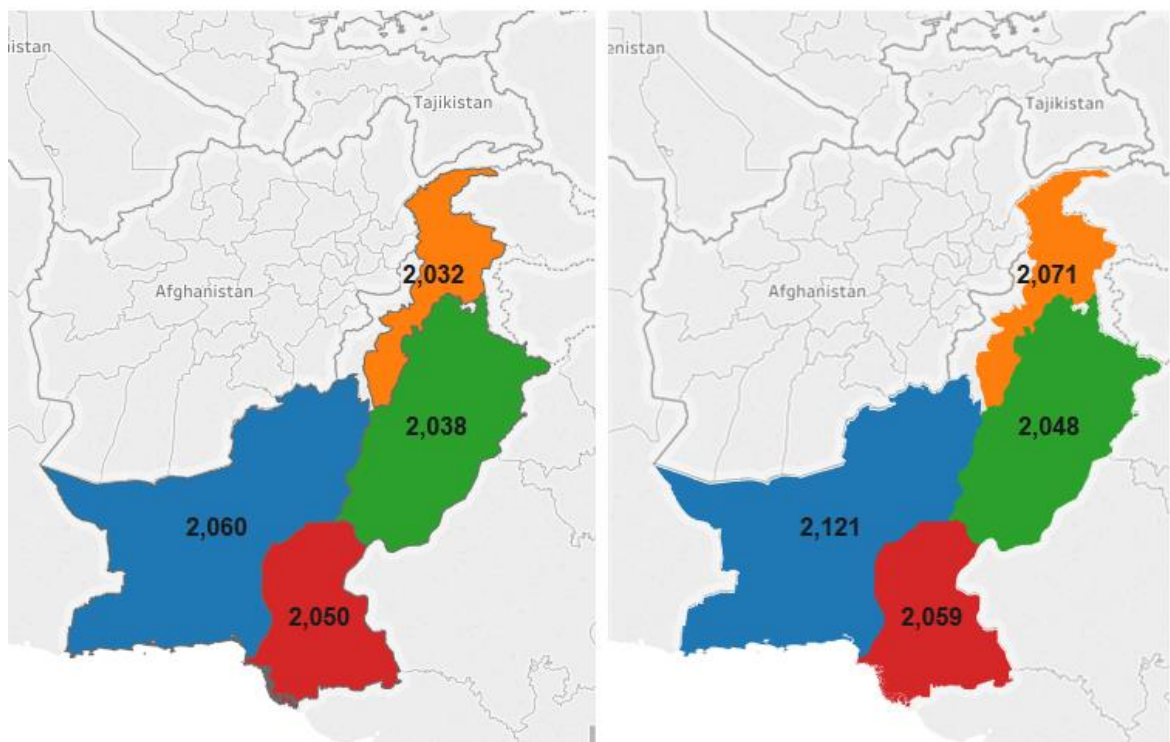
Figure   9:   Gender   Parity   Index   (Primary   Enrollment)   1998-2015
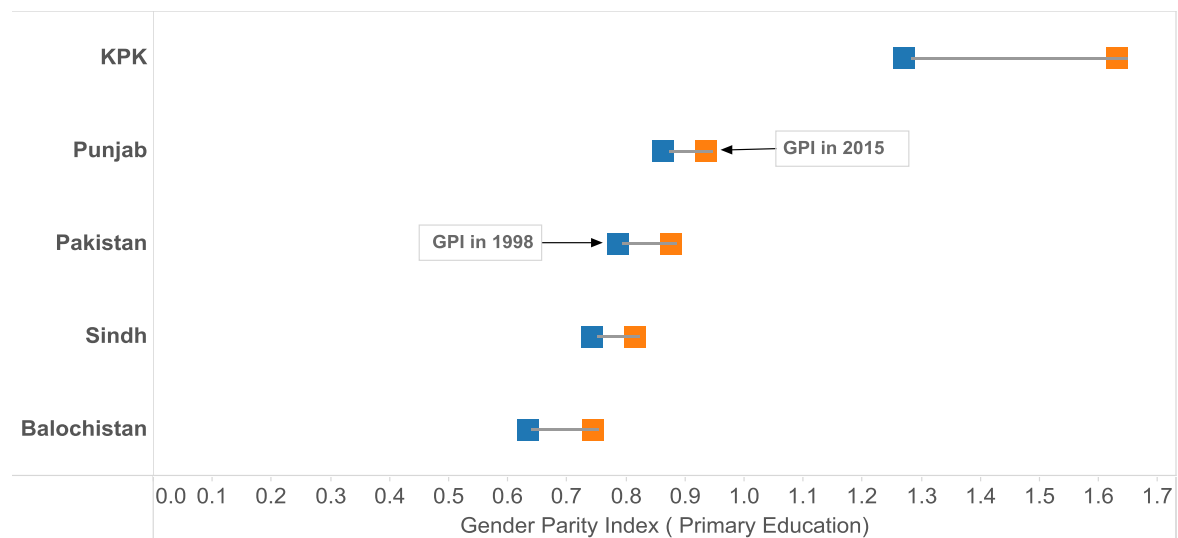
Figure 10: Literacy Rates (1995-2015) among men and women at Provincial
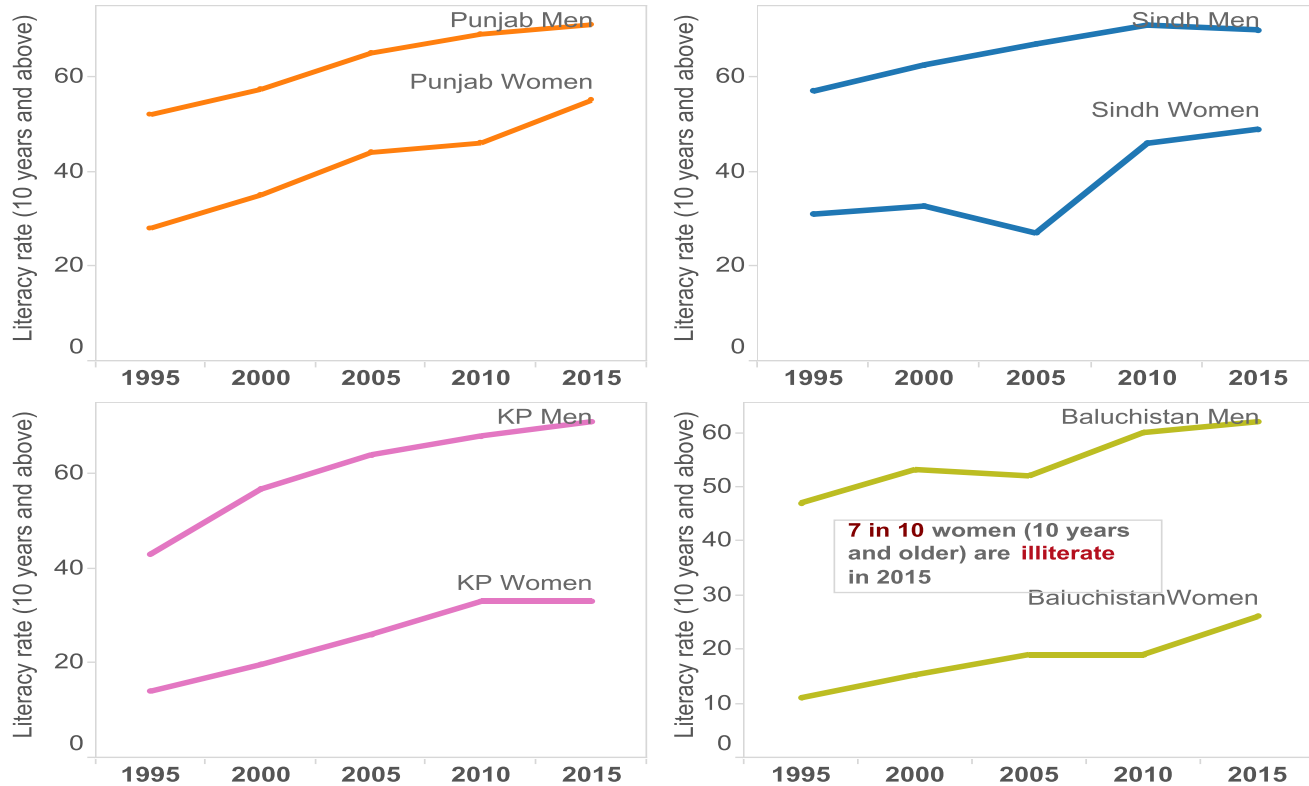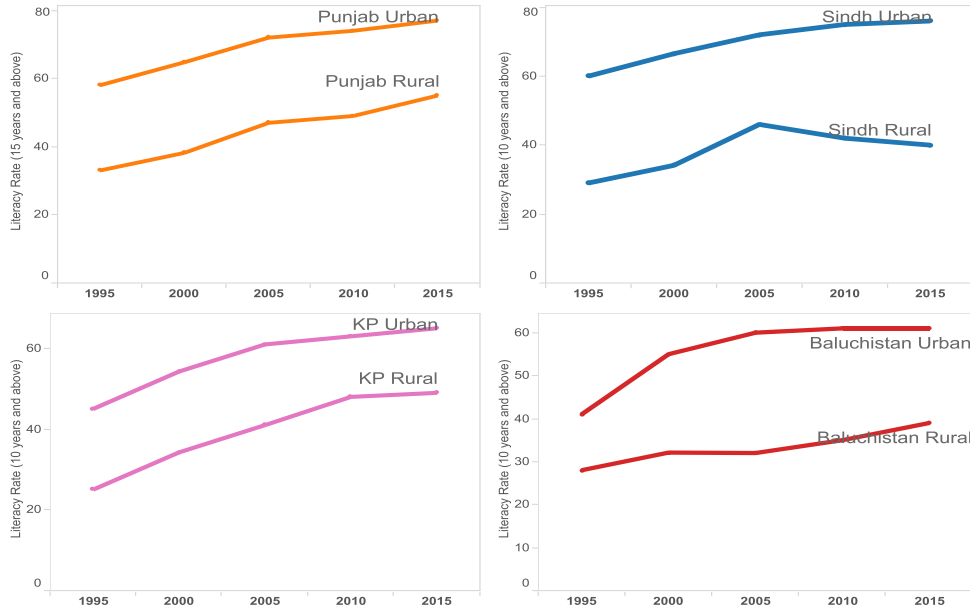
Figue 11: Expected year to achieve 100% literacy rate (Men vs Women)

We understand that projecting over future for many decades on the basis of our simple model may not be very sound idea but it does provide a rough position at sub-national level. When the provinces data are disaggregated by gender, there are wide gaps among men and women literacy rate. Baluchistan women are not likely to come through by 21st century. Fig.10. depicts that by business as usual, our female literacy rate is and will be far lower than our men. This holds for each province. The expected distance for men in Baluchistan also does not present a rosy picture. The agenda of inclusiveness needs to be reflected in the policies.

Most disadvantaged are our girls and children either living in conflict areas as well as with disabilities or in less developed districts. This is not the time to ignore any body. In Baluchistan, 6 in 10 children has not even completed primary by 2015. Punjab has also its own challenges percentage of population who completes primary is only 54% (Pakistan Social and Living Measurement Survey [PSLM], 2017). When we will fill these gaps, then Pakistan can achieve this goal.

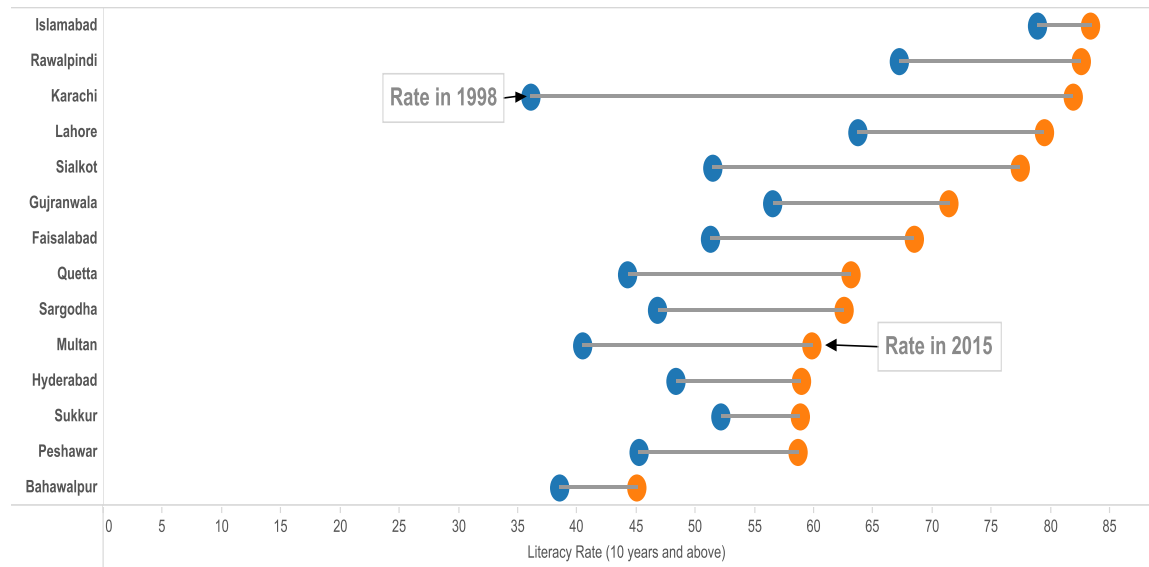**Figure 12: Literacy Rates (1995-2015) at Provincial level by region**

Figure 13: Expected year to achieve 100% literacy rate (Urban vs Rural)
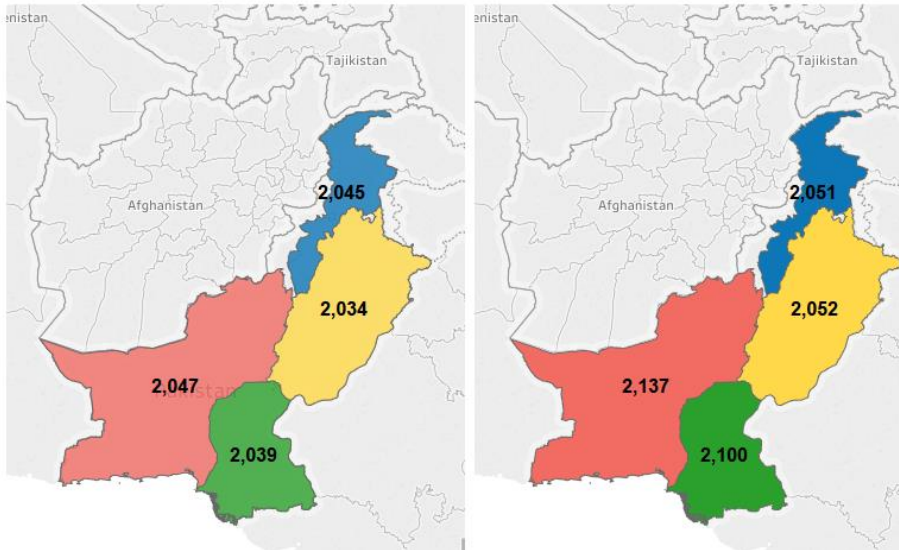
Literacy rates in rural areas are very low. Sindh rural and Baluchistan rural are not depicting a rosy picture. KP, Sindh and Baluchistan have rural literacy rate less than 50% . Punjab has relatively higher literacy rate than other provinces but the striking fact is that neither of them will hit the target by 2030. Baluchistan rural seems far below the target. KP has also a significant gap of more than 35 years of expected end. This seems impossible for rural areas to be on track unless some concrete focused initiatives are not taken.

Figure 14: Literacy Rates in big cities of Pakistan

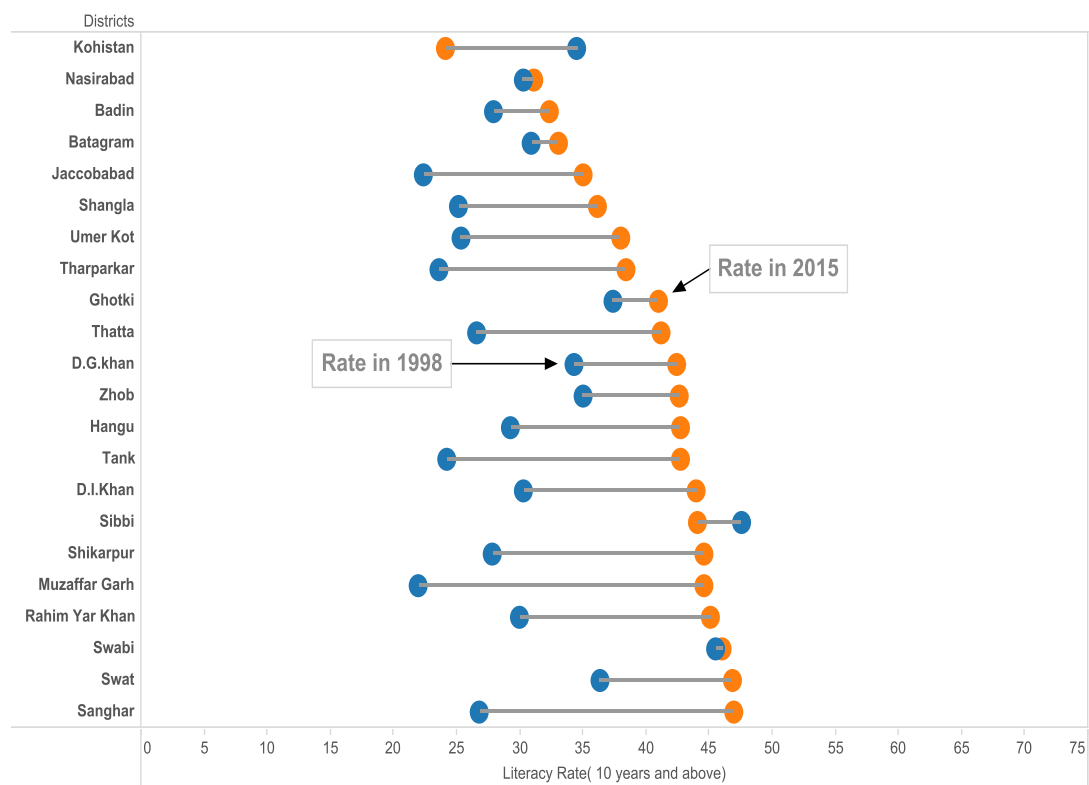**Figure 15: Literacy Rates (1995-2015) at district level**

Fig.15 depicts the scenario of districts with even less than 50% of literacy rates in 2015. Kohistan , Sibbi and Mirpur Khas have reverse gear in their literacy rates relatively to 1998. While Kohistan, Nasirabad and Badin has the lowest literacy rates among all. On the other hand, Swabi and Nasirabad has shown no progress since 1998. Rajanpur has shown a good progress from literacy rate 9.66 to 51.86, a magnificent progress in the last 18 years. While Islamabad, Rawalpindi and Karachi has high literacy rates.

Figure.16: Literacy Rates (1995-2015) at district level

Figure 17: Literacy Rates (1995-2015) at district level

Districts

Khushab
Kasur — Rate in 1998 →
Sahiwal — Rate in 2015
Hafizabad
Chitral
Mansehra
Layyah
Karak
Mandi Bahuddin
T.T.Singh
Sheikhupura
Dadu
Nowshero Feroze
Attock
Haripur
Abbottabad
Narowal
Chakwal

0   5   10   15   20   25   30   35   40   45   50   55   60   65   70   75

Literacy Rate(10 years and above)

Figure 18: Expected year to achieve 100% literacy (10 years and above) at district level

4. Conclusion

The motivation of leaving no one behind rely on equitable, inclusive and quality education.
Better data can only lead to better policy in which every woman, child, vulnerable, indigenous and

disable will be visible. The policy for everyone, living anywhere in Pakistan. The numbers are mostly from socially and economically disadvantaged areas. They usually belong to rural areas. The least developed districts need more attention in our national policies.

Disaggregated data at district level indicate that achieving 100% literacy rate by 2030 through business as usual seems impossible task. Districts like Mirpur Khas, Zhob, Kohat, D.I.Khan, Badin, rural-Bhawalpur and many others are far away from the target. Though projecting data beyond a certain time period is technically not sound but it is feared that many of the districts will not be able to achieve the target even by 2047 when country will be celebrating its 100th anniversary.. Literacy for couple of district is as at the same level as that of 1995 or it has reverse trend. Some cities-Rawalpindi, Lahore, Karachi, Abbottabad, Sialkot, Quetta, Haripur, Gujrat and Mandi Bahuddin are more likely to hit this target by 2030 by business as usual. Few districts are dropped due to insufficient data availability, mostly from Baluchistan. The development is uneven among the districts and provinces and it can help for every district and province to identify the priorities for early action. So, it may lead to a progressive state by coping with the sustainable development challenges across the regions, districts, provinces and for eradicating gender inequalities.

Without any significant structural change in our education systems and sufficient investment in the sector to nudge the future, it is unlikely to have equitable and inclusive education for everyone. Punjab and KPK (if investment in rural and women education continue) may likely achieve education for all target around 2047 but the other two provinces need to gear up their effort so that we have 100% literate population before we celebrate 100 years of our birth.

Bridging the gaps among provincial developments in terms of education is desirable, even need to be geared up. 100% literacy rate can only be achieved once its weakest unit achieves the target. We have to figure out how this distance from the target can be made and then we have to design policies accordingly. Women literacy rate is abysmally low. It is just like to deny gender equality is to deny half of the country's potential. Additionally, rural Pakistan is far away from urban Pakistan. The policy for everyone means; for every woman and for every least developed area. Additional challenge is not only bringing children to school is not education. The main problem is always giving the quality education that would infer better results for not only individuals as well as for a well-groomed society. This also highlights the challenges and progress

of provinces and districts for the last 20 years. The world has made the progress in the field of education and we are having a heap of challenges that lie ahead and we used to pay its cost by leaving so many behind in our polices. Education is not only a right but it's a way of better life of our children and youngsters, better health and a brighter future.

Should we abandon our faith in these goals? Answer is no. Progress made by the world in reducing poverty by half under MDGs indicates that SDGs can also be achieved if there is full commitment. If we want to achieve SDGs, we have to take all people (marginalized, poor, disable particularly living in far areas) on board. We have to monitor and track their progress in achievement of these goals. We have to make our governments accountable all the way through next 13 years. Progress made by the world in reducing poverty by half under MDGs indicates that SDGs can also be achieved there is full commitment. Lets reject business as usual. Lets have academia, scientists, policy makers, social activists and governments together for this journey towards SDGs. Lets demand a different path. Lets choose the Pakistan we want.

References

Academy of Educational Planning and Management [AEPAM], (2017). *Pakistan Education Statistics 2015-2016*. Islamabad, PK: Ministry of Federal Education and Professional Training.

Asian Development Bank, (2015). *Making it happen: Technology, finance and statistics for sustainable development in asia and the pacific*. Retrieved from https://www.adb.org/publications/technology-finance-and-statistics-sustainable-development-asia-pacific

Government of Pakistan, (1997). *Pakistan Integrated Household Survey (PIHS) (1995-1996)* [Data file and code book]. Islamabad: Pakistan Bureau of Statistics.

Government of Pakistan, (1999). *Pakistan Integrated Household Survey (PIHS) (1998-1999)* [Data file and code book]. Islamabad: Pakistan Bureau of Statistics.

Government of Pakistan, (2002). *Pakistan Integrated Household Survey (PIHS) (2001-2002)* [Data file and code book]. Islamabad: Pakistan Bureau of Statistics.

Government of Pakistan, (2004-2015). *Pakistan Social and Living Standards Measurement Survey (PSLM) (2004-2015)* [Data file]. Islamabad: Pakistan Bureau of Statistics.

Government of Pakistan, (2016). *Pakistan Social and Living Standards Measurement Survey (PSLM) (2014-2015).* Islamabad, PK: Pakistan Bureau of Statistics. Retrieved from http://www.pbs.gov.pk

Haw, N. J. (May, 2015). How far are we from reaching the SDGs?. [web log] Retrieved from http://jasonhaw.com/post/130056467877/how-far-are-we-from-reaching-the-sdgs-part-1

UN General Assembly. (1948). *Universal declaration of human rights* (26 [I] A). Paris.

United Nations Development Programme. (2005). *Investing in development: A practical plan to achieve the millennium development goals.* London, UK: UN Millennium Project. Retrieved from http://www.unmillenniumproject.org/documents/MainReportComplete-lowres.pdf

United Nations Educational Scientific and Cultural Organization [UNESCO]. (2015). *Education for all 2000-2015: Achievements and challenges.* Retrieved from http://en.unesco.org/gem-report/report/2015/education-all-2000-2015-achievements-and-challenges#sthash.zsP8vG7y.dpbs

United Nations. (2016). The Sustainable Development Agenda. Retrieved from http://www.un.org/sustainabledevelopment/development-agenda/