

Analysis of ANNUAL DEVELOPMENT PROGRAMME 2016-17



*The **Punjab Economic Research Institute (PERI)** is a statutory body attached with Planning and Development Board, Government of the Punjab, with a mandate to carry out socio-economic research on issues of provincial and national importance and to support planning and development work of Punjab Government.*

Analysis of Annual Development Programme 2016-17

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The Punjab Economic Research Institute (PERI) is a statutory body attached with Planning and Development Board, Government of the Punjab, with a mandate to carry out socio-economic research on issues of provincial and national importance and to support planning and development work of Punjab Government. It is the oldest economic research institution in the country. The Institute was reorganized by the Punjab Government in 1975 in order to reactivate the Board of Economic Inquiry which had an unbroken record of economic research going back to 1919. The Institute became a statutory body in November 1980.

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Acknowledgements

The authors are grateful for the constant support provided by the Planning and Development Department (P&DD), Government of the Punjab, for the preparation of this report. More specifically, the authors would like to pay special gratitude to the following at P&DD: Mr. Muhammad Jehanzeb Khan (Chairman), Mr. Iftikhar Ali Sahoo (Secretary), Dr. Muhammad Abid Bodla (Member, Infrastructure Development), Mr. Khalid Sultan (Member, Education), Dr. Shabana Haider (Member, Health/Nutrition/Population), Mr. Malik Mukhtar Ahmed (Member, Production Sector Wing), Mr. Agha Waqar Javed (Member, PPP), Mr. Mahmood Hassan (Member, Social Infrastructure & Environment), Mr. Sadaqat Hussain Khan (Member Energy), and Dr. M. Aman Ullah (Chief Economist). Moreover, the authors are extremely thankful to the Senior Chiefs, Chiefs, and their teams for offering valuable assistance throughout the report preparation and review process.

This report has largely benefitted from the critical evaluation conducted by the external reviewers, Mr. Sohail Ahmed (Former Chairman, P&DD) and Mr. Ijaz Hussain (Former Member, Social Sectors at P&DD). The authors are appreciative of the time taken to review the draft report, and for their invaluable comments and suggestions.

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Publication No.

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Published in 2018 by the Punjab Economic Development Institute (PERI)
Planning and Development Department
Government of the Punjab
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List of Acronyms

ADP	Annual Development Plan
CPEC	China Pakistan Economic Corridor
EDL	Essential Drugs List
FY	Fiscal Year
GDP	Gross Domestic Product
GoPb	Government of Punjab
GRP	Gross Regional Product
HDI	Human Development Index
HIES	Household Integrated Economic Survey
IPP	Institute of Public Policy
KPK	Khyber Pakhtunkhwa
KPRRP	Khadim-e-Punjab Rural Road Programme
LFS	Labour Force Survey
MA	Moving Average
MAF	Million Acre Feet
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Rate
MPR	Monthly Progress Report
MYS	Mean Years of Schooling
NCD	Non-Communicable Disease
O&M	Operation and Maintenance
P&D	Planning and Development
PC	Planning Commission
PCRWR	Pakistan Council of Research in Water Resources
PEC	Punjab Examination Commission
PEEF	Punjab Education Endowment Fund
PPP	Public-Private Partnerships
PSLM	Pakistan Social and Living Standards Measurement
RADS	Research and Development Solutions
SDG	Sustainable Development Goals
SPDC	Social Policy and Development Centre
U5MR	Under 5 Mortality Rate
UNESCO	United Nation Educational Scientific and Cultural Organization
US	United States
WASH	Water Sanitation and Hygiene
WB	World Bank

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Executive Summary

The development expenditure by government, through several channels, can play a key role for socio-economic upliftment of the people. Among other mechanisms, this is achieved by strategically intervening in the economy to improve the functioning of markets and by providing adequate social and economic infrastructures where they are deficient.

In Pakistan, both federal and provincial governments invest in public sector development projects to catalyse economic growth and achieve equitable outcomes. However, with the devolution of power resulting in greater provincial autonomy and control over resources, the development expenditure of provincial governments is more relevant than ever. The Annual Development Programme (ADP), formulated by the Planning and Development Department, Government of Punjab (GoPb), is one of the key instruments to execute the development vision. Through investments in over forty sectors and subsectors of the province, the ADP interventions have a ubiquitous impact on the dynamics of domestic economy.

This study, after critically assessing the overall ADP and its impact on growth and welfare of the province, takes a closer look at performance of the most critical social, infrastructure and production sectors. In the detailed sectoral analysis, starting from project conception to ex-post evaluation, all stages of project cycle are reviewed. There is a thorough discussion of the degree to which the sector addressed the pressing issues of the sector and the success with which the development portfolio was implemented. The overall impact of development interventions on economic growth and human development have also been analysed.

Trends in the ADP of Punjab

The size of ADP was Rs 250 billion in 2012-13 which increased to Rs 550 billion in 2015-16, at an average annual growth rate of 22 percent. The change in the size of ADP has been two and a quarter times more over

the period. Compared to this, the change in the ADP following 7th-NFC Award is much more remarkable. Compared to budgeted ADP, the revised ADP since 2012-13 has increased by more than 3 times, at an average annual growth rate of over 34 percent. This shows the increased commitment of the GoPb in directing more funds to the development of the people.

The budgeted size of the ADP, on average, has seen a cut of 11 percent between the period 2012-13 to 2016-17. However, in 2015-16, the revised ADP compared to actual ADP increased by over 6 percent. Similarly, the size of the real ADP in relation to GRP has increased significantly by 1.8 percent during the period, from 1.4 percent in 2012-13 to 3.2 percent in 2016-17. The share of the revised ADP in the total expenditure has increased to more than 30 percent from the mere share of 16.7 percent in 2012-17.

However, there have been large inefficiencies in the utilization of ADP over the years. The five-year trends of utilization of funds reveal that almost half of the ADP never realized. Detailed analysis of the planned ADP to utilization of funds reveals that not much efforts have been put by the P&DD and line-departments to improve the planning process in Punjab. In 2012-13, 41 percent of planned ADP was lost which decreased to 8 percent in 2016-17.

The size of the throwforward has increased significantly from Rs 217 billion in 2012-13 to Rs 685 billion in 2016-17. The throwforward must be rationalized if the Government want to meet its development goals. The increased size of the throwforward is making the planning process weak and has made it difficult for the Government to meet its development goals. Over-time, the average cost of the scheme has decreased from Rs 372 million to Rs 441 million pointing out to the fact that the allocation to schemes is becoming thin. Large increase in the approval of new schemes is making development portfolio immature and unsustainable.

The share of new schemes in the development portfolio has increased from 25 percent in 2012-13 to 60 percent in 2016-17. Rapid approval of the new schemes increases higher than desired overhead costs on project management and problems in implementation due to lack of adequate project execution capacity, especially in some of the smaller line departments which has limited the monitoring and evaluation capacity of the P&DD. With the current rate of completion of schemes, some scheme will take more than 100 years to complete.

Review of Annual Development Programme 2016-17

The sectoral priorities in the ADP 2015-16 were: infrastructure development, 27 percent; social development, 32 percent; special initiatives, 14 percent; services, 16 percent; and production sectors, 8 percent. Roads sector gets priority within the infrastructure sector while in the social sectors, education and health, are the priority sectors. Overtime, the development priorities of the Punjab Government have changed from social sectors to infrastructure sectors. The regional development priorities of ADP allocation are highly correlated with the population shares of regions.

The shares of ADP allocations at the district level reveal that the Government has realized the backwardness of Southern region and thus giving them a fair share of the development budget. Like ADP allocation, the size of the infrastructure sector too is largest in the development portfolio of Punjab. The size of infrastructure sectors throwforward was Rs 252 billion, which is 50 percent of total throwforward. In the current development portfolio, Lahore Orange Line Metro Train is the largest project with the cost of Rs 165 billion. In the current development portfolio, Lahore has the largest development portfolio of Rs 220 billion.

Impact of ADP on Growth and Development

The public investments through the ADPs give an impetus that boosts the overall economy, particularly investments in the infrastructure sectors expand the productive capacity of the economy and provide a vibrant environment to the private sector. Currently, the infrastructure sector consti-

tutes more than 43 percent of the total development portfolio of the Punjab. The projects in the sectors are expected to receive a share of almost 37 percent in the ADP allocations for 2016-17.

The different types of analyses undertaken in the report clearly demonstrate that development priorities in the ADP do matter from the viewpoint of economic growth and development. Firstly, investments in roads, power generation and in enhancing the availability of water for agriculture have significant effects on growth of Punjab. Specifically, the impact of the road sector is largest and statistically highly significant. Therefore, in Punjab, increase in development expenditure leads to increase in economic growth of the province.

Within infrastructure sector, in FY 2016-17, roads received the largest allocation while other sectors were not much focused. Recently under the China Pakistan Economic Corridor (CPEC) massive investment is being made in the energy sector, most of which is undertaken by the private sector. Once the projects in the CPEC and those by the private sector are completed, the energy constraint will be over for the province. However, from the development priorities of the ADP, there is a case for changing the priority and diverting resources away from other sectors to water and power to achieve a bigger impact on GRP growth, within a given size of ADP. Further, the PPP mode may be explored.

The Chapter also relates the ADP expenditure with the human development index (HDI) at the district level in Punjab. Firstly, according to the ranking of HDI, Lahore is the most developed and Rajanpur is the least developed district of Punjab. However, none of the district falls in the high human development category. Secondly, the analysis between ADP and HDI show that there is a positive relationship between the two, but it is not statistically significant. So, the ADP expenditure in Punjab do lead to economic growth but not necessarily to human development.

Education

The Education sector of Punjab is performing well compared to other provinces of Pakistan. One major reason of which is the increased public expenditure on the sector, which have increased from 0.6 percent of the GRP in 2000-01 to 1.9 percent in 2015-16. One indication of better performance of

Punjab's education sector is the percentage of the people that are satisfied from the schooling services which has risen from the 63 percent in 2001 to 96 percent in 2015. However, the education sector of Punjab lags behind if compared with Indian Punjab and several other countries across the world. Two prominent reasons of lagged performance are: first, until few years back, for the large part, education was a responsibility of the Federal Government and, second, higher than the expected population growth rates in Punjab have increased the liability of the government to cater for.

Since last few years, realizing this liability the Government of Punjab has undertaken lot of initiatives and policy shifts/changes to ensure that every child of age 5 to 16 years in Punjab has a free and easy access to quality education. To increase the quality education, the GoPb has shifted focus of policies from building new education institutions to providing missing facilities and rehabilitating the dangerous schools. Now this is a major policy imperative of the Government which is culminating in successful provision of missing facilities and improved schooling infrastructure. Further, to increase the enrolment rate and the retention ratio, the Punjab *Free and Compulsory Education Act 2014* legally bounds the parents to ensure that the children of age 5 to 16 years get education. Also, the government also declared *education emergency* in Punjab.

However, the level of public spending on the education sector need to be increased further and well-focused. Although the GoPb has significantly increased the level of spending and the level is significantly higher as compared to other provinces, but the level is still far less compared to what it should have been because the population demand and the liability of provision of quality education to everyone is rising. Specifically, the development budget need to be increased significantly. Between the period 2013-14 to 2016-17, the change in the development budget was more than two times. The size of the budget was Rs 68 billion in 2016-17. Almost three-fourth of this education budget went to School Education Department alone, leaving a minor share for other sub-departments.

The development portfolio of the sector has increased from Rs 25 billion in 2013-14 to Rs 68 billion in 2016-17. This has made the development budget of the sector

unsustainable. Further, the development portfolio is disproportionately allocated at the sub-department levels. The share of new schemes has increased to 68 percent in 2016-17 from only 29 percent in 2013-14, mainly due to the large share of the new schemes. Further, a major portion of the planned development budget of the sector is lost every year due to revisions of budgets, non-releases and under-utilization of released funds.

Health

The performance of health sector in Punjab is quite satisfactory compared to other provinces of Pakistan as it has improved upon the full immunization rate of children and pre-natal care received by women. However, the province continues to lag behind in achieving health related targets of Millennium Development Goals. The Punjab health sector strategy and initiatives through development plans have remained incapable to reduce infant mortality or maternal mortality rates. In ADP 2016-17, Rs 65 billion was allocated to health sector and almost half of it was allocated to medical education and tertiary institutions. The volume of throw forward exceeds the cost of new schemes. The dilemma of health sector is that over the past three years the proportion of new schemes have increased in the portfolio, rather than focusing on completion of on-going schemes. The link between the allocations and outcomes is also weak. Over the years, the allocations in health sector have not been able to improve reproductive health. In ADP 2016-17, around 7 percent of the total cost is being spent on reproductive health program namely Integrated Reproductive Maternal New Born and Child Health (IRMNCH), but there has been no significant decrease in the infant mortality/maternal mortality rate. Average cost of on-going schemes is way more than the average cost of new schemes. Regional disparity prevails in the expenditures of health sector. The health department has remained slow in spending money in the districts other than Lahore.

Water Supply and Sanitation

Punjab's water and sanitation sector performance are satisfactory within the context of Pakistan. Within Punjab the water supply and sanitation indicators show improvements. The use of improved sources of drinking water has increased and the number of households using unimproved

sources of drinking water has decreased dramatically from 2011 to 2014 by around 42 percent. For sanitation too, access has been improved significantly. According to MICS 2014, 66.2 percent of household members use improved sanitation facilities. The specific places for hand washing are present with 79.6 percent of the households of Punjab in comparison to 76.8 percent in 2011. Within Punjab, the water and sanitation expenditures, especially the development expenditure's share has significantly increased. In 2012-13, water and sanitation budget of Punjab was around Rs 10 billion which increased to Rs. 45 billion in 2016-17. Increase in spending on water and sanitation is a step in the right direction by the Government of Punjab. However, the throw forward of on-going schemes of the sector is greater than the cost of new schemes. The development portfolio already has a large volume of throw forward and side by side more new schemes are added. These trends show that the development portfolio of the sector might become unsustainable over time which could have dire implications for the sector. The utilization rate of the majority of the schemes is above 50 percent. Around 294 schemes are able to utilize funds above 50 percent as compared to their throw forward. Regional disparity prevails in the expenditures of water and sanitation sector. The water and sanitation department has remained slow in spending money in the districts other than Lahore. Access to water and sanitation facilities should be made on equity basis and special focus should be on rural areas.

Agriculture

With over forty percent labour force of Punjab engaged in agriculture, growth emanating from this sector has a high impact on poverty alleviation. For the past several years, the share of agriculture sector in the development programme has not been reflective of its significance for the economy. From FY 2013-16, the share of this sector in the total development programme has fluctuated between 2 and 3 percent. Moreover, a huge proportion of the budgetary allocations made for FY 2016-17 have been possible due to foreign assistance. Although, upon revisions, the initial financial allocations are mostly curtailed, for FY 2016-17, the increase (25 percent) in revised allocation for agriculture sector was significantly greater than that of previous years and was disproportionately higher than the

decrease in overall Development Budget. Another red-flag for the agriculture sector is the increase in the size of throw-forward which has almost doubled in the last fiscal year.

For the last five years, the total production of several crops in Punjab has either been stagnant or decreasing. This culminated in the overall negative growth rate for the sector in FY 2015-16. Arguably, this is largely due to several chronic problems that have plagued the sector for decades. These issues, among others, include volatile prices of agriculture produce and unscientific practices of farmers. The development portfolio indirectly addresses various issues, however, the data accumulated over the past several years show that the impact of these initiatives was almost negligible. In spite of investments in promoting scientific and efficient agricultural practices, and research, Punjab's agriculture lags behind in mechanization and water management compared to the South Asian region. The untapped potential of agriculture is also evident by the differences in the per acre yield of average and progressive farmers. Solutions for several persistent problems in agriculture perhaps fall beyond the traditional investments. Other avenues, including partnerships with the private sector and innovations in financial instruments should be pursued to address the plight of agriculture in Punjab.

Women Development Sector

The role of women is important for progress of our country. Punjab government is striving to economically empower women by providing equal opportunities, promoting female education, fixing quotas for women in services and establishing women hostels, day care centers and other social institutions for the welfare and betterment of women.

Given this, Women Development Department was established on April 4, 2012. Since then, the department has taken a lot of initiatives in Punjab for legal and economic empowerment of women including women entrepreneurship, property ownership, employment, decision-making, education and vocational training through Punjab Women Empowerment Package 2012, Punjab Women Empowerment Initiative 2014, Women Empowerment Package 2016 and Punjab Women Empowerment Initiative 2017. These steps are aimed at eliminating

women deprivations in order to enable them to play their role in provincial and national development.

While the number of schemes and allocations being to the sector are on a rise, nonetheless there is a need to focus on specific social issues and to create awareness of the initiatives for effective outreach. Moreover, the analysis of the ADP indicates that the number of schemes is on a rise but so is the estimated cost of these schemes. Hence making it crucial that the department receives sufficient allocations.

Roads

Given its positive impact on productivity of private capital and socio-economic benefits at community level, in FY 2016-17, the road sector received about 14 percent of the total development budget. Upon revision the share increased to 18 percent of the total development budget. Punjab's development expenditure on roads in the last fiscal year was greater than that of other three provinces combined. A comparison of the original allocation of road sector with its revised allocation demonstrates that share of the sector as a percentage of the total development portfolio has always increased upon revision. This is to say that the overall size of the development budget markedly decreases upon revision, however, the road sector either loses significantly less money or gains even more funds after the revisions. In nominal terms the throw forward of road sector has increased three folds since FY 2012-13. Without a strategy to deal with such a rapidly inflating throw forward, the backlog of schemes can start increasing due to thin funding and may become unmanageable.

Among the major challenges faced by road sector is inadequate and ill-timed expenditure for maintaining its assets. This backlog of poorly maintained roads is creating a financial burden for the Government and heavily penalizing the development

budget in form of rehabilitation and improvement projects. The stagnant annual maintenance expenditure on roads for the last five years despite floods and inflation further bolsters this argument and makes the inadequate allocations for maintenance more apparent. Unfortunately, provisions were not made for a comprehensive asset management plan for roads in the ADP. Another area of concern which closely relates to the expected life of newly constructed and existing roads is the axle-load management for which requisite actions were not undertaken. Furthermore, the sector has to ensure an ample degree of accessibility and connectivity among major industrial zones, strategic assets and urban hubs so Punjab can fully capitalize on the opportunities that would be provided during implementation of CPEC. There is a dire need to revise the previous plans in light of the CPEC business plan.

The Development Plans of the last few years have not addressed the regional inequality that persists between North and South Punjab. Five districts of Punjab namely Bahawalpur, Dera Ghazi Khan, Rajanpur, Layyah and Chiniot have very low road densities (below 20 km/100km²) as compared to the rest of the province. Four of these districts lie in the Southern region. The overall road density of Northern Punjab is about 86 percent greater than that of South.

Furthermore, there is a significant room for improvement in preparing the PC-1 documents. Most of these documents lack any material socio-economic, financial and environmental analysis. Given the nature of road sector, it is a difficult task to precisely identify its social and economic benefits for the society. However, in most of the PC-1 documents there is absolutely no attempt to estimate the positive externalities generated by roads. The description of phasing of physical and financial activities also requires much elaboration.



PREAMBLE

Economic development is a process of gradual improvement in the material well-being of individuals. Improvement in individual well-being lead to economic development of a state and it takes years to a country to transform from being underdeveloped to be developed. The key objective of development process particularly in low and middle-income countries is to address market failures and lift individuals out of poverty. The development expenditure by government, through several channels, can play a key role for socio-economic upliftment of a society. Among other mechanisms, this is achieved by strategically intervening to improve the functioning of markets and by providing adequate infrastructure facilities where they are deficient.

In Pakistan, both federal and provincial governments invest in public sector development projects to catalyse economic growth and achieve equitable outcomes. However, with the recent devolution of power resulting in greater provincial autonomy and control over resources, the development expenditure by the provincial governments are more relevant than ever.

The Annual Development Programme (ADP), formulated by the Planning and Development Department, Government of Punjab, is the key instrument to execute the development vision. Through direct investments in over thirty sectors and subsectors of the province, the ADP interventions have a ubiquitous impact on the dynamics of domestic economy. The expenses of ADP are forecasted over multiyear time horizon. It is formulated within a three-year rolling framework to ensure course correction in the medium term. The development budget cycle coincides with the recurrent budget to avoid any unanticipated shortfall of finances. According to the expected costs, the development projects constituting the ADP are presented at various competent forums with the financial authority to approve them.

The Annual Development Program (ADP) is a key policy instrument for implementing development vision of the government. If managed well, it can not

Box 1.1: Timelines of the ADP Planning Cycle

DATE (for each financial year)	ACTION
30 th September	1. ADP Formulation Guidelines circulated by 30 th September;
1 st October to 15 th November	1. Departments to notify an ADP Formulation Team ; 2. The Departments may engage in the following activities between 1 st October and 5 th November: 2.1: Conduct quick research studies if required 2.2: Conduct formal/targeted Stakeholder consultations ; 3. Departments to submit ADP Strategy Paper to P&D by 15 th November;
15 th November to 31 st December	1. Departments to initiate preparation and submission of Project Concepts for new projects; 2. P&D to issue ADP Strategy Paper by 31 st December; 3. Schemes uploaded on the automated system and all concept notes must be finalized; 4. P&D and Finance Department to share Development Financial Ceilings with each Department by 31 st December;
15 th January	1. Departments to furnish First Draft of ADP to P&D; 2. Departments to initiate preparation, submission and approval of PC-I process in parallel (<i>to continue till 1st May</i>);
15 th January to 15 th February	1. Scrutiny of draft ADP by the respective Members of P&DD and process completed with departments onboard by 15 th February;
16 th February to 20 th March	1. Inter-departmental meetings/consultations with P&D to discuss draft ADP. Meetings/activities should conclude by 20 th March;
31 st March	1. Submission of Final Draft ADP to P&D by the Departments;
1 st April to 1 st May	1. P&DD to initiate briefing sessions/consultations on proposed ADP with relevant forums;
1 st May	1. Submission of Draft ADP to Finance Department;
Mid-June	1. Discussion and Approval of ADP by Provincial Assembly; (No unapproved schemes will be included in the ADP)
15 th July – 31 st August	1. Departments to produce their Annual Reports ; 2. P&DD to compute and share the ADP Departmental Rankings ;

Source: Guidelines for Formulation of Annual Development Program (2018-19), Planning and Development Department, Government of the Punjab.

only act as a convincing tool to address the challenges mentioned above but can support the broader socio-economic development agenda of the government through medium-term strategic resource allocation. Moreover, due to its substantial size and sectoral range, ADP interventions can significantly influence the private sector investment decisions; triggering additional equitable growth for the province. For these reasons, ADP formu-

lation process needs to be accorded utmost priority and meticulous handling by the provincial departments.

The increasing size and complexity of the ADP, whereas, on one hand has considerably increased its importance, on the other has made the management process extremely perplexing. The Planning & Development Department (P&DD) along with line departments are spending more time in managing the ADP formulation. The quality of the project documents has

shown a consistent erosion of quality which is compromising the implementation status and outcomes of the projects. The approval timelines of new schemes have become extremely elastic spanning over almost the entire year. The portfolios of key departments do not gel well to form a sector programme, rather a collection of projects is usually being termed as a programme. This sporadic compilation is a result of missing sectoral policy directions for most sectors.

Historically, the ADP formulation process spanned a period of four months starting in the middle of January and ending just before end of May each year. This time line for ADP Formulation was not only out of sync with the Finance Department's Budget Making Process but also allocated too little time for proper preparation, scrutiny and approval. To address this issue; *from the financial year 2018-19 P&DD has lengthened the ADP Formulation process to eight months and the process will now formally start from 1 October every year.* The increased process time of four months will allow departments to prepare more informed projects; ones that are well grounded in good research and have benefitted from stakeholder inputs and consultations. Similarly, the lengthening of

the process will provide more time to P&DD to review the project proposals and take better decisions by helping the departments prioritize their investment decisions. *The P&DD has separately issued a document titled "New Planning Framework for ADP" which provides the detailed process and additional activities required to be carried out.*¹ The snap-shot of the new process is presented in Box 1.1.

This study, after critically assessing the overall ADP and its impact on growth and welfare of the province, takes a closer look at performance of the most critical social, infrastructure and production sectors. In the detailed sectoral analysis, starting from project conception to ex-post evaluation, all stages of project cycle are reviewed. There is a thorough discussion of the degree to which the sector has addressed the pressing issues of the sector and the success with which the development portfolio is implemented. We have also analysed the overall impact of development interventions on economic growth and human development for the past several years. The key findings and recommendations abridge these discussions to conclude the study.

2

TRENDS IN ANNUAL DEVELOPMENT PLANS

Explained in the previous Chapter, the Annual Development Plan (ADP) is the main instrument of the Government of Punjab to execute development vision, meet policy objectives and to achieve economic targets set by the Government in the Punjab Growth Strategy 2018, Medium Term Development Frameworks and Sectoral Plans. The aim of this Chapter is to highlight both the long term and more recent trends in the size and composition of the overall ADP and development expenditures. These analyses will be useful in assessing the development planning of Government of Punjab and identifying issues and problems if any.

Size of the ADPs

Figure 2.1 gives trends of actual and revised ADP sizes since 2012-13. Panel (A) shows

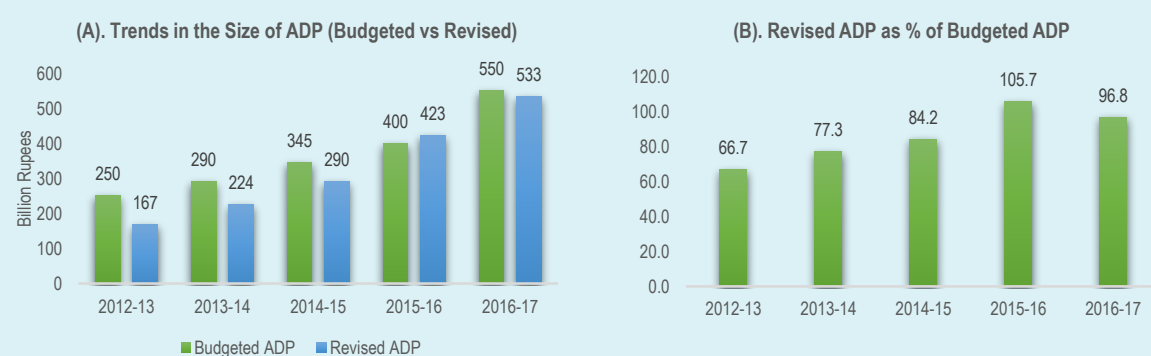
actual and revised sizes of the ADP and Panel (B) shows the extent of shortfalls in the ADPs. The size of budgeted ADP was Rs 250 billion in 2012-13 which increased to Rs 550 billion in 2015-16, at an average annual growth rate of 22 percent. In a short period of four years only, the positive change in the size of ADP has been almost two and a quarter times. This means that the change in the Punjab's ADP following the 7th-NFC Award is very remarkable. This shows the seriousness and increased commitment of the Government of Punjab in directing more funds to the development of its people.

Similar to the budgeted ADP, increasing trends in revised ADP can also be seen in the revised ADP² from the Panel (B) of

The size of the revised ADP was Rs 533 billion in 2016-17. It is increased by almost two and a quarter times since 2012-13.

The budgeted size of the ADP, on average, has seen a cut of 11 percent between 2012-13 and 2016-17. However, in 2015-16, the revised ADP was 6 percent more than the budgeted ADP.

Figure 2.1: Trends in the Size of ADPs



Source: Finance Department and Planning & Development Department, Government of Punjab.

Figure 2.1. To our surprise, the increase in the size of revised ADPs is far more than the increase in size of the budgeted ADP. The average annual increase was 34 percent on average, 11 percentage point higher than the increase in budgeted ADP. This change in revised ADP is three and quarter times over the four years.

Extent of Shortfalls in the ADP

The ratio of revised ADP to actual ADP, which measures the *extent of shortfall* in the budgeted ADP, in the five years reveals that on average the budgeted size of ADP cut down by almost 11 percent. However, the ratio has improved a lot during the last five years. The ratio, which was 67 percent in 2012-13, increase to 77 percent in 2013-14, showed a subsequently strong recovery till the fiscal year 2015-16 when it approached 106 percent. This means that the revised ADP in 2015-16 was more than the budgeted ADP by 6 percent. That means *the government is willing to spend more than its commitment to meet the development needs of the province*. In 2016-17, the ratio was 97 percent which is not bad compare to what it has been in two years back. It needs to be stated here that these trends relate only the budgetary ADP and not to the trend in the overall level of public investment which includes self-financing from outside the ADP by state corporations and private sectors.

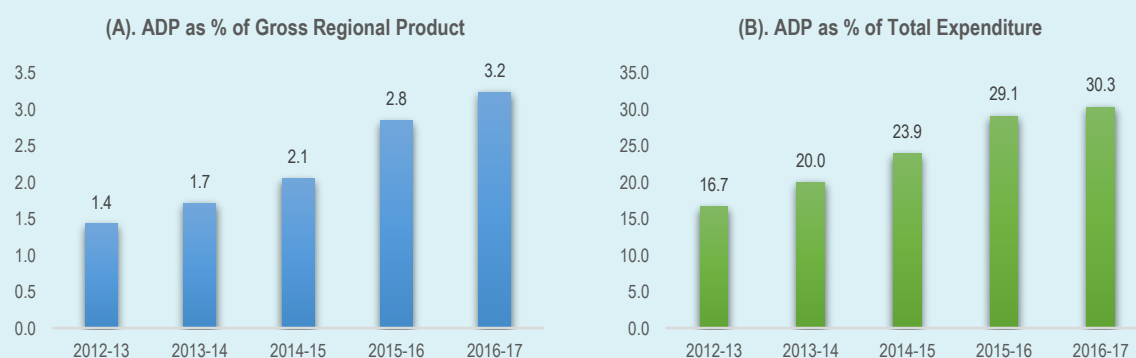
Relative Size of the ADPs

The Figure 2.2(A) plots the size of the revised ADP in relation to the provincial gross regional product (GRP). We can clearly see that the size of the ADP has increased significantly in the last five years, especially in the last two years. In a short pe-

riod just five years, the level of ADP in relation to GRP has more than double. Currently, the size of ADP stands at 3.2 percent of the Punjab's GRP. This means that the Government of Punjab has significantly increased its commitment and spending big money for the development of the province and well-being of its people.

Another estimate of relative size of ADP is plotted in the Figure 2.2(B). This estimate measures the size of the revised ADP in relation to the total revised expenditure of the province to see how the shares of development and recurrent expenditure is changing over time. The trends of this relation also reveal a similar pattern as was the case of revised and budgeted ADP. The share of the development expenditure was only 17 percent of the total expenditure in 2012-13, increased to 20 percent in following year, strongly surged up and reached to 24 percent of total expenditures in the fiscal year 2014-15, subsequently a strong increase in 2015-16 when it approached more than 29 percent of the total expenditure. Following a subsequent trend in 2016-17, the level of ADP gain further increases and attained the highest share of more than 30 percent in 2016-17. Therefore, in relative terms too,

Figure 2.2: Real ADP (Revised) as % of Real Gross Regional Product and Total Expenditure



Source: Finance Department and Planning & Development Department, Government of Punjab

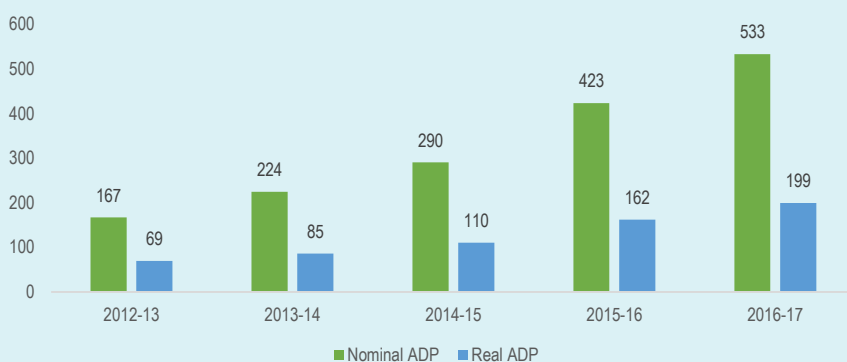
the share of the ADP has increased significantly over the period, especially the post 7th-NFC period.

Before the 7th-NFC period years, where there were declines in the size of the ADPs in relation to the total expenditures were not due to fall in its share in total pub-

lic expenditure but mainly due to a significant upsurge in the size of the current expenditure, which had increased the share of current expenditure significantly but the change in the size of the ADP followed the usual trend. Therefore, the change in the total expenditure has always ‘crowded out’ allocations for development expenditure. However, the current government has avoided these cuts in the size of the ADP to sustain the development of the province.

terms (at constant prices of 2005-06). During the period of analysis, although the absolute size of the ADP, in nominal and real terms, is increasing but in real terms the size of the ADP is far less than the nominal size. In real terms, the growth rate of the ADPs is over 30 percent per annum against the 34 percent growth rate in the nominal ADPs.

Figure 2.3: Nominal vs Real ADP (Billion Rupees)



Source: Finance Department and Planning & Development Department, Government of Punjab.
 Note that nominal ADP expenditure are converted to real using the GDP Deflator of the Public Investment Index. The base year of the index is 2005-06.

lic expenditure but mainly due to a significant upsurge in the size of the current expenditure, which had increased the share of current expenditure significantly but the change in the size of the ADP followed the usual trend. Therefore, the change in the total expenditure has always ‘crowded out’ allocations for development expenditure. However, the current government has avoided these cuts in the size of the ADP to sustain the development of the province.

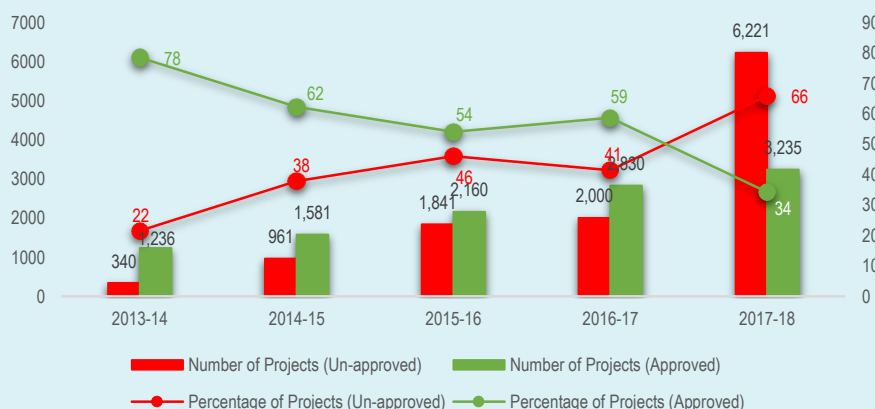
In 2016-17, the size of real ADP was Rs 199 billion which is almost 3 times the size of real ADP in 2012-13, however, it is 2.7 times less than the nominal size of the ADP in 2016-17 (see Figure 2.3).

This section explained trends in size of ADPs since 2012-13. We saw that the size of the ADP in Punjab has increased significantly and has reached Rs 550 billion in 2016-17. The formulation and execution of such a large budget when there is a lack of human and technical capacity in the public sector is hard. The next three sections explain what happens to the development

Real vs Nominal Size of the ADP

The trends of ADP in the last five years are also assessed by the size of the ADP in real

Figure 2.4: Trends in Approved vs Unapproved Schemes in the ADP



Source: Finance Department and Planning & Development Department, Government of Punjab.

budget from the formulation stage to the utilization of funds.

Approved vs Unapproved Schemes in the ADP

Each year P&DD and the line departments come up with a document that consists of thousands of schemes which together make the ADP of that year. Three types of schemes are included in this document: ongoing schemes, new schemes and schemes that come under the other development programmes (ODP). Overtime, the number of these schemes has increased significantly from just 1576 in 2013-14 to 15456 in 2017-18, at a growth rate of 57 percent per annum (see Figure 2.4).

The ongoing schemes are the schemes that were approved during the previous fiscal years and still are in the implementation stage while the new schemes are those schemes which are included in the ADP but have not approved yet. Therefore, each year the ADP consists of both approved and unapproved schemes. Overtime, the composition of the ADP has changed from less unapproved schemes in 2013-14 to less approved schemes in 2017-18. That is, the number of unapproved schemes in the ADP which were 22 percent of the total schemes has increased to 66 percent in the 2017-18 ADP. Such a large increase in the number of unapproved schemes has major implications on the implementation of the ADP which are explained in the subsequent sections.

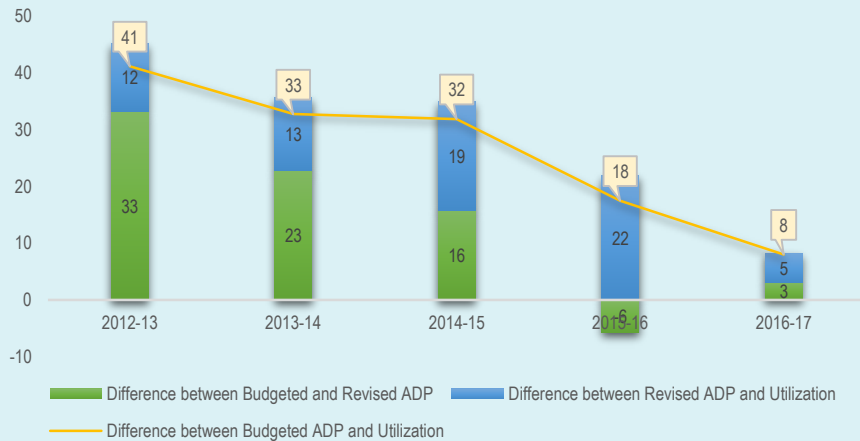
Shortfalls in the ADP

There are four stages of implementation of the ADP, that is, how much of the planned ADP is realized or implemented, passes through four stages. In the first-stage, the Planning and Development Department (P&DD) and line departments through a consultative process, spanning over several months, plan the development portfolio consisting of new schemes, annual size and allocations to each scheme, sector and the overall ADP. This stage also includes approval of the development portfolio and budget from the cabinet. Following the first-stage, in the second-stage, the P&DD recommends the Finance Department to release funds (wholly or partially) to each scheme listed in the ADP. In the third-stage, the Finance Department releases the

funds to each scheme based on the availability of financial resources of the province. The last stage is the utilization of funds released by the Finance Department. In this stage, the respective departments and other stakeholders are given funds against each scheme. During this whole process of original allocation to the utilization of funds, as described in the previous section, the size of allocation to each scheme passes through revisions due to many financial and administrative factors during the course of the whole fiscal year.

Figure 2.5 shows trends of this process of the APD formulation to the ADP implementation, that is, from the planned to revised ADP and from releases to utilization of funds. A visible difference can be seen in the original to revised ADP and from the releases of funds to the departments while there is not much difference between the releases and utilization of funds. Also, note that the perpendicular difference in the trend lines of the planned and revised ADP in the last five years is almost same, only has slightly increased in the last years. Similar, is the trends in the difference between trends lines of revised ADP and releases, and releases and utilization of funds. This pattern over the period has not change revealing the fact that there has not been much effort by the P&DD and line departments to improve the planning process in Punjab, that is, to improve the planning process many changes have been documented but these have not been followed.

Figure 2.6 reiterate the analysis of Figure 2.5 in order to assess how much of the planned ADP is actually implemented, how much lost during the process and where does this lost occur. For example, suppose the Government of Punjab prepare ADP of 100 rupees then how much of it is lost over the years is shown in Figure 2.6. In 2012-13,

Figure 2.6: How much of the Planned ADP is Lost

Source: Calculated from Finance Department and Planning & Development Department, Government of Punjab.

out of Rs 100 of planned ADP, Rs 41 lost while only Rs 59 implemented: the loss of Rs 33 out of the Rs 41 were lost due to revision of the ADP allocated originally, Rs 12 were lost due to inability of the line-department to utilize the released funds.

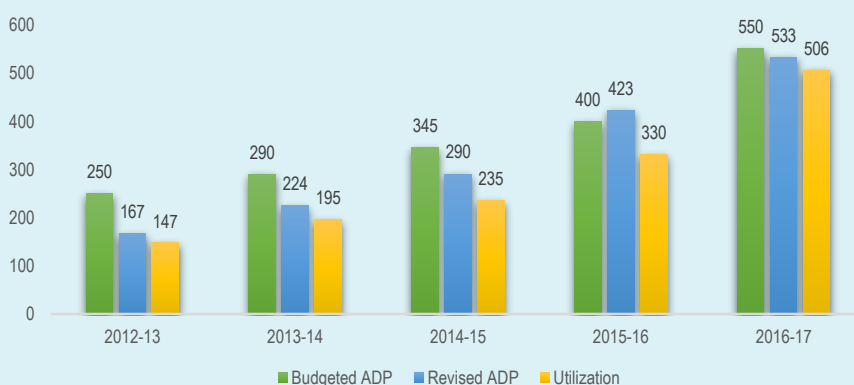
Overtime this lost has decreased significantly to Rs 8, Rs 3 due to the revision of original allocations and Rs 5 due to non-utilization of released funds. Note that there is a decrease in the loss of Rs 33 which is significant and indicate big improvements in the development planning of the province, especially of the P&DD and the line-departments.

Evident from the analysis above that the financial utilization and subsequently the implementation of development portfolio has been consistently improving over the past five years. Expected utilization of 95 percent during the fiscal year. Increased allocations and higher rate of utilization depict Government of the Punjab's improved capacity to undertake and execute large

scale projects with greater efficiency. Moreover, the planning of high priority projects has improved as there is a decline of block allocations in the recent years, due to which projects can be financed and reviewed under ADP.

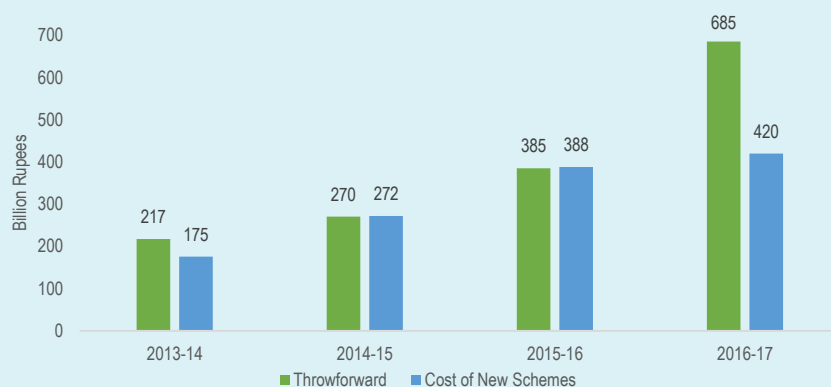
Size of Throwforward and Cost of New Schemes

The throwforward, at the start of any fiscal year, is measured as the total estimated cost of on-going schemes in the ADP less the cost already incurred on these schemes. The throwforward of the Punjab development portfolio has built up rapidly in the last couple of years due mainly to large increase in number of new schemes which are approved and become part of the ongoing schemes. Later when these schemes do not receive proper allocations they become a liability. During the last five years, the throwforward has increased from about Rs 217 billion in 2012-13 to almost Rs 685 billion at the start of fiscal year 2016-17. Given this

Figure 2.5: Trends in Budgeted & Revised ADP and Utilization of Funds

Source: Finance Department and Planning & Development Department, Government of Punjab.

In 2012-13, 41 percent of planned ADP was lost. The loss decreased significantly down to 8 percent in 2016-17.

Figure 2.6: Size of Throwforward and Cost of New Schemes

Source: Finance Department and Planning & Development Department, Government of Punjab

rate of approval of new schemes, it is highly likely that in the next fiscal year, 2017-18, will also commence with a throwforward far larger than Rs 685 billion (see Figure 2.7).

The build-up of large throwforward is due partly to high rates of approval of new schemes, which subsequently receive thin allocations and become on-going schemes and partly because of the escalation in cost of on-going schemes. The cost of new schemes was Rs 175 billion in 2012-13 and is reported at Rs 420 billion in 2016-17. It may be observed that, in the last five years, the size of the throwforward is rising, pointing to immediate rationalization of it if the Government wants to make development portfolio sustainable and meet the development goals identified in the Punjab Growth Strategy 2018 and MTDFs. Chapter 11 gives the criterion following which the throwforward could be rationalized.

Key Indicators of the ADP

An exercise has been carried out to quantifying some key indicators of the ADP during the period of analysis. The purpose of calculating these key indicators is to see how the process of ADP formulation has evolved in last couple of years. The magnitudes of the key indicators are presented in Table 2.1. From the first indicator, we can see that between the FYs 2013-14 and 2016-17, the total number of schemes/projects have increased to almost thrice. The increase is mainly due to the rapid increase in the number of new schemes. In 2013-14, the total number of schemes were 1576, out of which on-going schemes were 1179 and the new schemes were 397 making the new

ment portfolio. Overtime the composition of the ongoing and new schemes has changed a lot mainly due to the rapid approval rate new schemes. In 2016-17, new schemes made almost 44 percent of the total schemes.

The impact of significant increase in the number of schemes and rapid approval rate of new schemes can be seen on the average cost and allocation to the schemes. The average cost of ongoing scheme was Rs 441 million while the cost of new schemes was Rs 566 million and the average cost per scheme was Rs 472 million. Overtime, the average cost of the scheme has decreased to Rs 342 million in 2016-17, which is mainly due to the large decrease in the cost of new schemes. Although the average cost of ongoing scheme has decreased to Rs 342 million while the average cost of new scheme has gone down to Rs 203 million. This change in the average cost structure of the new and ongoing schemes is one indication that the development portfolio is spreading too thin to sustain. The impact of rapid increase in the number of schemes is that these have decrease significantly the average allocation to the schemes. Although overall there is no change in the average allocation and the allocation to ongoing schemes has decreased over the period but the allocation to the new schemes has decreased rapidly.

The fact that the portfolio of schemes is relatively 'young' is demonstrated by the high throwforward as a percentage of the cost of on-going schemes at almost 55 percent in 2013-14 increased further to 58 percent in 2015-16 and 68 percent in 2016-17. The more suitable measure of measuring

The size of the throwforward has increased significantly from Rs 217 billion in 2012-13 to Rs 685 billion in 2016-17.

The share of new schemes in the development portfolio has increased from 25 percent in 2011-12 to 44 percent in 2016-17.

Overtime, the average cost of the scheme has decreased from Rs 472 million to Rs 342 million pointing out to the fact that the allocation to schemes is becoming thin.

Table 2.1: Key Indicators of ADP Progression

	2013-14	2015-16	2016-17
Number of Schemes	1,576	3,976	4,830
On-Going Schemes	1,179	2,064	2,717
New Schemes	397	1,912	2,113
Percentage New Schemes	25	48	44
Average Cost per Scheme (Million Rs.)	472	327	342
On-Going Schemes	441	429	417
New Schemes	566	218	203
Average Allocation per Scheme (Million Rs.)	114	80	114
On-Going Schemes	92	112	98
New Schemes	179	46	100
Throwforward as % of Cost of On-Going Schemes	55	58	68
Throwforward/Allocation for On-Going Schemes	160	160	170
New Schemes (Cost/Allocation)	289	277	203

Source: Planning and Development Department, Government of the Punjab.

the maturity of the schemes in the ADP is throwforward to revised allocation of ongoing schemes. Its value was 160 in 2013-14, remain at same level in 2015-16 but increased to 170, pointing to the increasing unsustainability of the development portfolio. Further the tendency for approval of a large number of new schemes was relatively high over the period of analysis. The cost of new schemes as percentage of total portfolio was 289 percent in 2013-14, although it decreased in 2016-17 to 203 but still it is quite high.

Evidence of the process of ‘spreading thin’ of allocations is given by the significant average decline in the average cost and allocation to the schemes while the number of schemes is increasing rapidly. This pattern over time has increase the average number of years that a scheme will take to complete. This implies that it will take longer to complete the schemes. *The implications of this spreading on the ADP implementation process is that the development impact of the ADP will be delayed due to low rates of completion of schemes and most on-going schemes will be subject to substantial cost overruns. The Government should stop the rapid approval of the new schemes in order to consolidate the development portfolio.*

The above analysis reveals that although the ADP of Punjab is moving ahead rapidly but there are some problems in its composition due to which its impact could be delayed. Many reasons can be quoted of this like lack of coordination and proper policy guidelines. Moreover, the reasons for the lower speed of project implementation

also include delay in preparation and approval of projects, lack of human resource and interruption in appointment of project director, consultants and decision of tender documents for procurement and difficulty in acquisition of land.

Conclusions

The following are the main conclusions from the analyses in the previous sections:

- The size of the ADP in 2016-17 was Rs 550 billion. This has increased to more than double since 2012-13 at a growth rate of 22 percent per annum.
- The actual size of the ADP, on average, has seen a cut of 11 percent between the period 2012-13 to 2016-17. However, in the last two years, the size of revised ADP was almost equal to the budgeted ADP. In 2015-16 it was 106 percent and in 2016-17 it was 97 percent. The improvement in this ratio is a good sign and indicates the precision in the development planning of Punjab.
- The size of the revised ADP in relation to total expenditure has increased significantly by double during the period, from only 16.7 percent in 2012-13 to 30.3 percent in 2016-17.
- The size of ADP in real prices is far less than the size of ADP in nominal prices. If we compare the real size of the ADP with nominal size, the real ADP is two and a half times less than the nominal ADP.

- The five-year trends of utilization of funds reveal that a major portion of the ADP was not utilized. In 2012-13, 41 percent of planned ADP lost, however, the lost decreased to 8 percent in 2016-17. Thus, there is major improvement in this process of ADP formulation to its implementation.
 - The size of the throwforward has increased significantly from Rs 217 billion in 2013-14 to Rs 685 billion in 2016-17 which is making the planning process weak and difficult for the Government to meet its development goals. The size of throwforward must be rationalized if the Government want to meet its development goals and strategic objectives.
 - Large increase in the approval of new schemes is making development portfolio immature and unsustainable.
- This pattern overtime has decrease the average cost of the scheme from Rs 472 million to Rs 342 million pointing out to the fact that the allocation to schemes is becoming thin. This has also increased the share of new schemes in the development portfolio from 25 percent in 2013-14 to 44 percent in 2016-17.
- Rapid approval of the new schemes has increased higher than the desired overhead costs on project management and problems in implementation due to lack of adequate project execution capacity, especially in some of the smaller line departments. It will limit the monitoring and evaluation capacity of the P&DD to physical monitor and evaluate such a large development portfolio.

3

REGIONAL AND SECTORAL ALLOCATIONS OF ADP FUNDS

One of the major purposes of the public sector is to eliminate the regional inequalities in resource distribution, mainly of income, to eradicate poverty and to make all districts equally developed. Development expenditure is one such tool available to the public sector to achieve this objective. Therefore, this chapter focuses on detailed analysis of distribution of funds across the districts will. The sections include analysis of size of development portfolio at the district level, ADP per capita across districts and performance of districts in execution of ADP funds.

The second objective of this Chapter is to analyse trends in the sectoral priorities of the ADP. What are the current sectoral priorities of the government? Were these priorities same or have changed over time? Are the current priorities in accordance to the development needs of the province? Answers to such questions will be explained in this Chapter.

Based on analyses of this Chapter, Chapter 4 of the report will analyse impacts of regional allocations of funds on poverty and economic development. Similarly, how the sectoral priorities are impacting the economic growth of Punjab.

Regional Priorities of the ADP

The regional development priorities of the Government of Punjab since 2012-13 are given in Tables 3.1. From the composition

of ADP allocations to districts it seems that the development priorities of the Government are in accordance with the population shares of the regions because the shares of ADP allocations to districts are highly associated with population shares of the districts. The correlation coefficients between the two is 0.837 percent which is highly significant at the 0 percent level of significance. To elaborate this point further and to give a better presentation of the regional distribution of development funds, the district shares of ADP are graphically shown in Figure 3.1.

The analysis of regional development priorities from the Figure 3.1 indicates that the Government of Punjab has started to build-in the regional equity paradigm as the development shares among the districts are allocated on the basis of population shares. Although it looks that some districts like Lahore, Multan and capitals of the divisions have given large shares, but these districts also have the largest proportion of population to cater for. However, note that the districts in the southern-region are given 3-5 percent to overcome the development barriers in these districts and to bring them in par with the well-developed districts of Punjab. Also, the per capita ADP allocation to the divisions and districts, given in Table 3.1, looks very fair given the regional development priorities of the Government of Punjab.

The regional development priorities of ADP allocation are highly correlated with the population shares of regions.

Table 3.1: Per Capita ADP Allocation (Rupees)

	2012-13	2013-14	2014-15	2015-16	2016-17	Average
Punjab	2,566	2,929	3,430	3,914	4,999	3,568
Attock	2,323	2,795	2,779	5,178	3,619	3,339
Bahawalnagar	2,092	2,333	2,209	3,278	2,685	2,519
Bahawalpur	2,060	2,246	5,395	3,548	3,888	3,427
Bhakkar	2,543	2,949	2,634	5,305	3,921	3,470
Chakwal	2,720	3,259	3,010	6,422	4,747	4,031
Chiniot	2,876	3,573	3,495	5,582	3,626	3,830
Dera Ghazi Khan	2,321	2,604	2,845	4,440	3,536	3,149
Faisalabad	953	1,408	1,608	2,359	1,732	1,612
Gujranwala	1,995	2,933	3,055	4,144	4,169	3,259
Gujrat	1,444	1,681	1,573	3,135	3,147	2,196
Hafizabad	3,435	4,544	3,871	6,276	4,689	4,563
Jhang	1,523	1,911	1,930	3,069	3,482	2,383
Jhelum	2,999	3,544	3,260	6,867	5,111	4,356
Kasur	1,564	2,020	1,884	2,910	2,606	2,197
Khanewal	1,578	2,308	2,061	3,131	2,663	2,348
Khushab	3,186	3,764	3,539	7,063	5,058	4,522
Lahore	3,142	3,182	3,042	4,233	11,685	5,057
Layyah	2,880	3,317	1,848	4,565	3,887	3,299
Lodhran	2,772	3,152	2,358	4,008	3,399	3,138
Mandi Bahauddin	2,265	2,887	2,711	5,878	5,314	3,811
Mianwali	3,580	5,753	6,801	6,588	6,021	5,749
Multan	1,757	2,015	4,134	6,489	2,860	3,451
Muzaffargarh	1,246	1,618	1,866	2,359	2,801	1,978
Nankana Sahib	2,765	3,199	2,784	5,621	4,144	3,703
Narowal	2,888	2,932	2,791	5,165	3,651	3,485
Okara	1,333	2,120	2,251	3,169	3,074	2,389
Pakpattan	2,176	3,191	2,938	5,572	4,449	3,665
Rahim Yar Khan	995	1,215	1,697	2,258	859	1,405
Rajanpur	2,832	4,003	4,109	5,655	3,921	4,104
Rawalpindi	2,201	2,157	4,307	3,516	2,554	2,947
Sahiwal	2,111	2,647	2,742	3,857	4,016	3,075
Sargodha	1,364	1,585	1,448	2,555	2,639	1,918
Sheikhupura	1,767	2,078	2,364	3,484	3,565	2,652
Sialkot	1,631	1,594	1,335	2,753	2,837	2,030
Toba Tek Singh	1,763	2,366	2,379	3,798	3,368	2,735
Vehari	1,493	1,940	2,042	3,026	2,673	2,235

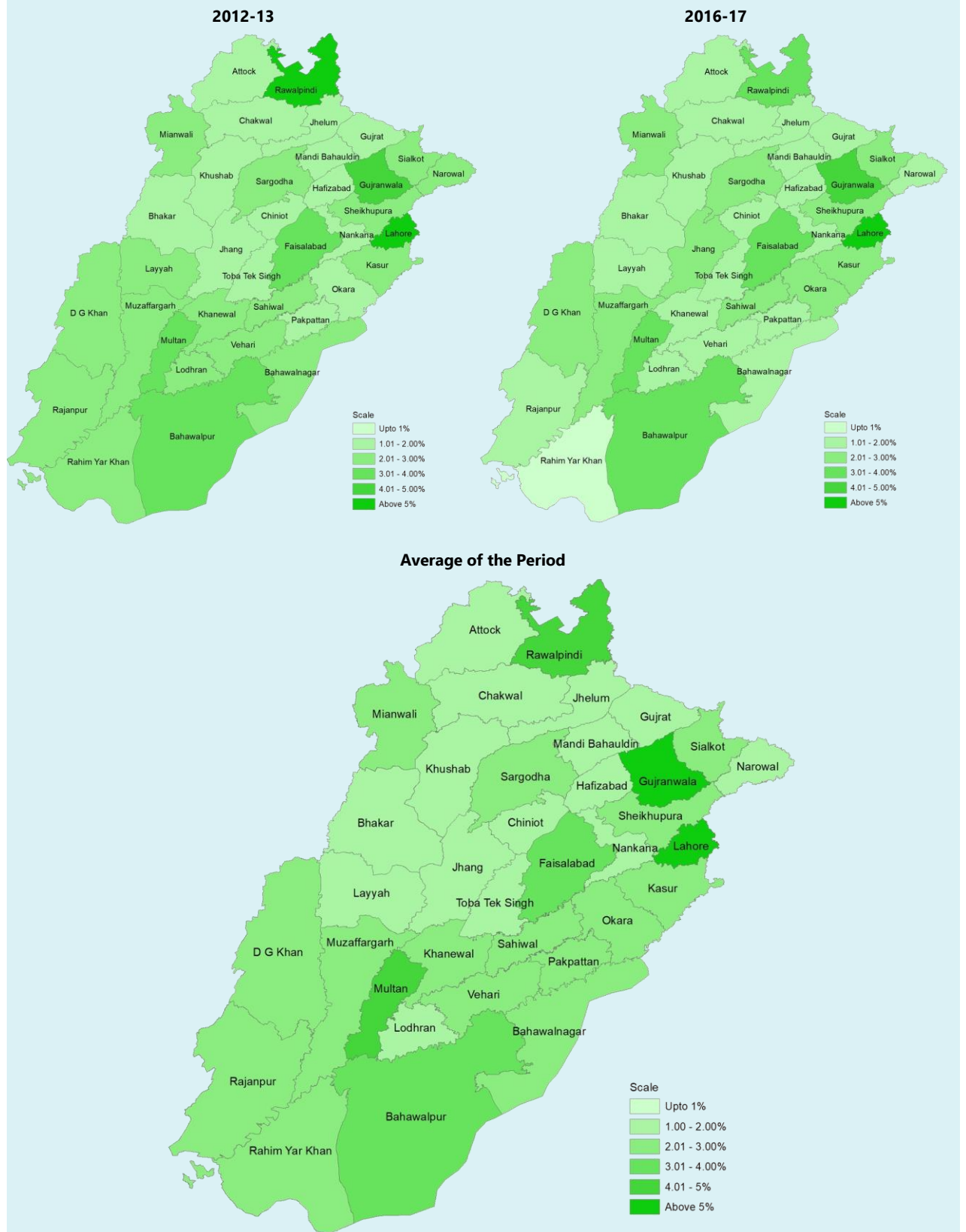
Source: Authors estimation from the Data provided by Planning and Development Department, Government of the Punjab.

Size and Composition of Throwforward

This section gives an overview of the performance and their current standings in terms of size in the ADP, liabilities and allocation in the ADP 2016-17. Table 3.2 by districts gives size of the development portfolio, expenditure against the cost outlay, throwforward and allocation for the

In the current development portfolio, Lahore has the largest development portfolio of Rs 220 billion.

Figure 3.1: Regional Priorities of Government of Punjab



Source: Based on Authors' calculations.

FY2016-17. At the district level, Lahore has the largest development portfolio of Rs 344 billion. The district has implemented 36

percent of the development portfolio. Currently, the throwforward of on-going schemes of the division is Rs 221 billion, 31

Table 3.2: Regional Performance in the Annual Development Plan 2016-17

	Number of Schemes	Rs Million			Throwforward
		Total Estimated Cost	Expenditure Upto June	Expenditure as % of Cost	
Attock	64	10,929	4,364	39.9	6,565
Bahawalnagar	108	15,216	5,050	33.2	10,166
Bahawalpur	169	35,551	12,215	34.4	23,336
Bhakkar	93	9,759	2,939	30.1	6,820
Chakwal	78	13,029	5,877	45.1	7,152
Chiniot	44	6,614	2,590	39.2	4,024
Dera Ghazi Khan	131	15,444	5,524	35.8	9,920
Faisalabad	265	44,411	15,975	36.0	28,436
Gujranwala	159	55,574	25,898	46.6	29,676
Gujrat	73	14,846	4,965	33.4	9,881
Hafizabad	39	6,017	2,288	38.0	3,729
Jhang	72	21,078	2,315	11.0	18,763
Jhelum	53	8,911	3,147	35.3	5,764
Kasur	188	15,867	7,385	46.5	8,482
Khanewal	84	7,484	2,942	39.3	4,542
Khushab	57	6,345	1,870	29.5	4,475
Lahore	518	344,170	123,374	35.8	220,796
Layyah	65	9,471	1,626	17.2	7,845
Lodhran	60	3,651	1,571	43.0	2,080
Mandi Bahauddin	79	14,633	6,032	41.2	8,601
Mianwali	49	27,052	17,202	63.6	9,850
Multan	182	24,827	7,979	32.1	16,848
Muzaffargarh	149	16,830	5,377	31.9	11,453
Nankana Sahib	64	7,114	1,583	22.3	5,531
Narowal	70	10,432	5,784	55.4	4,648
Okara	144	11,494	4,162	36.2	7,332
Pakpattan	56	13,432	5,966	44.4	7,466
Rahim Yar Khan	166	212	5	2.4	207
Rajapur	74	9,108	3,138	34.5	5,970
Rawalpindi	181	53,576	15,653	29.2	37,923
Sahiwal	104	14,941	6,438	43.1	8,503
Sargodha	157	26,652	5,426	20.4	21,226
Sheikhupura	194	23,633	8,189	34.7	15,444
Sialkot	150	32,126	6,607	20.6	25,519
Toba Tek Singh	100	9,889	3,183	32.2	6,706
Vehari	125	16,533	5,544	33.5	10,989
All Punjab	356	374,934	56,609	15.1	318,325

Source: Authors' calculations.

percent of the total cost outlay and 13 percent of the total throwforward of Punjab. After Lahore, Gujranwala has the highest development portfolio of Rs 56 billion. The expenditures against these cost outlays were 47 percent, much better than that of Lahore. The throwforward of the district is Rs 30 billion, 36 percent of the cost outlay and 9 percent of the total throwforward.

The Table also gives similar details for other districts as well. From the list of districts, after Lahore and Gujranwala districts that has largest development portfolio are Faisalabad, Gujranwala, Multan and Rawalpindi. Note that these are all developed districts of the Punjab, but these also has the largest portions of the population to look after.

The sectoral priorities in the ADP 2015-16 were:

1. Infrastructure Development, 43%
 2. Social Development, 21%
 3. Special Initiatives, 18%
 4. Services, 11%
 5. Production Sectors, 5%
- Rest is others.*

Sectoral Priorities in the Annual Development Plan

A look at the composition of the ADP allocation make it abundantly clear the sectoral priorities of the Government of Punjab. The magnitudes of these sectoral allocation are given in Table 3.3. Until 2016-17, the largest share in the ADP was for *infrastructure development* projects, followed by projects in

Strategic Sectoral Intervention through the ADP

The principal growth drivers envisaged in the proposed Growth Strategy are as follows:

- Institutional Reforms & Governance
- Equitable Regional Development

Like ADP allocation, the size of the infrastructure sectors, too, is largest in development portfolio of Punjab.

Table 3.3: Sectoral Priorities in the ADPs

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Social	41	38	36	30	31	32
Education	12	11	14	14	12	12
Health	8	7	9	8	8	8
Water and Sanitation	5	5	5	6	8	9
Infrastructure	30	38	45	40	29	27
Roads	16	12	10	17	14	14
Irrigation	5	9	11	9	7	6
Energy	5	9	9	8	2	1
Production	4	5	8	7	9	8
Agriculture	2	2	2	3	4	3
Industries, Commerce & Investment	1	1	2	2	2	2
Services	5	6	3	10	20	16
Governance & Information Technology	1	2	2	2	3	1
Transport	1	3	0	7	17	15
Others	3	4	2	2	2	3
Special Initiatives	17	10	5	11	9	14
Overall ADP	210,000	240,000	330,000	400,000	550,000	635,000

Source: Authors' calculations.

the *social development* domain. *Special initiatives/programmes*, bulk of which are other development programme, constituted a major percentage of the total allocation in ADPs, *services* and *production sectors* constitute minor percentages and the rest are *others*.

Within the infrastructure development sub-sectors, roads sector gets the highest proportion of the development funds. After roads irrigation gets the second highest proportions. Within the social sectors, education sector gets the highest share of ADP. The health and family planning sector got a share of 8 percent on average. The sectoral composition of the ADP allocations in the ADPs were to large extent in accordance to the pillars of Growth Strategy and development priorities of the Government of Punjab. More on these priorities has been said in Chapter 4 of the report.

- Human Capital & Skills
- Productivity Enhancement
- Export Led Growth
- Overcoming Energy Shortage
- Private Sector-led Job Creation

It is important to link here the sectoral priorities in the ADP with the growth drivers of the Growth Strategy. Examples of such interventions for the principal growth drivers are given below. Many of these could be based on Public-Private Partnerships (PPP) or other arrangements.

Major Development Programmes/Initiatives of the Government of Punjab

The following are the major projects/programmes of ADP 2016-17¹:

Roads sector gets priority within the infrastructure sector while in the social sectors, education and health, are the priority sectors.

¹ The lists of programmes/initiatives are taken from the White Paper 2016-17 of the Government of Punjab.

- Khadim-e-Punjab Kisan Package (Rs 50 billion)
 - An allocation of Rs 41 billion for Irrigation Sector development to enshrine rehabilitation, improvement and modernization of infrastructure coupled with holistic reforms aiming at integrity and sustainability of the system through improved management and service delivery.
 - Khadim-e-Punjab School Strengthening Programme (Rs 50 billion)
 - Construction of 10,000 new classrooms in schools (Rs 15 billion)
 - Reconstruction of dilapidated School Buildings (Rs 8 billion)
 - Provision of missing facilities in Schools (Rs 5 billion)
 - Punjab Education Endowment Fund (PEEF) (Rs 4 billion)
 - Establishment of 46 colleges in Punjab
 - Lahore Knowledge Park including IT & Engineering University Lahore, Punjab (Rs 2 billion)
 - Pakistan Kidney & Liver Institute (PKLI), Lahore (Rs 4 billion)
 - Revamping of all DHQ Hospitals in Punjab (Rs 3.7 billion)
 - Revamping of 15 THQ Hospitals in Punjab (Rs 1.5 billion)
 - Re-vamping of four tertiary care hospitals in Punjab (Rs 2 billion)
 - Upgradation of existing DHQ Hospitals into Teaching Hospitals at Gujranwala, Sialkot, Sahiwal and DG Khan (Rs 4.31 billion)
 - Prevention and Control of Hepatitis in Punjab (Rs 500 million)
 - Infection Control Programme (Rs 400 million)
 - Integrated Reproductive Maternal New Born & Child Health (RMNCH) & Nutrition Programme (Rs 2.5 billion)
 - Health Insurance Scheme (Rs 1.5 billion)
 - Expanded Programme for Immunization (EPI) (Rs. 1 billion)
 - Purchase of Mobile Health Units (Rs. 1 billion)
 - Allocation of Rs 30 billion for Provision of clean drinking water under Khadim-e-Punjab Saaf Pani Programme which is one of the basic requirements of a healthy hygienic living.
 - Rehabilitation of urban and rural water supply and sewage system (Rs 14.37 billion)
 - An allocation of Rs 14 billion for Good Governance Initiatives & Information Technology.
 - Project for Safe City in Lahore, Rawalpindi, Gujranwala, Multan, Faisalabad and Bahawalpur (Rs 11.13 billion)
 - Lahore Orange Line Metro Train Project (Rs 85 billion)
 - Allocation of Rs 27 billion for Khadim-e-Punjab Rural Roads Programme. The Programme has been designed to improve and modernize road network in rural areas to facilitate transportation of agriculture produce from Farm to Market. This will not only help in better farming activities but also helpful in stimulating rural economy.
 - Allocation of Rs 15 billion for District / TMA Development Programme.
 - Allocation of Rs 12.6 billion for Industries Sector to modernize industrial infrastructure in order to attract private investment.
 - Allocation of Rs 9 billion for investment in the Energy Sector to overcome power shortages in the Province and stimulate industrial growth.
 - Allocation of Rs 6.5 billion for Skills Development Programme including Rs 3 billion for TEVTA and Rs 2 billion for PVTC.
- Following are the major initiatives by Government of Punjab in collaboration with the international agencies for the FY2017:
- **Punjab Jobs & Competitiveness Programme:** World Bank funded programme of US \$ 100 Million to

create market-based jobs in the Punjab to support the targets set in Punjab Growth Strategy 2018.

- **Skills Development Programmes:** Partly funded by Department for International Development UK, £38.4 million for 5 years, and partly by the Government of Punjab, £89.1 million. Under this programme, technical & vocational skills training will be provided to 330,000 poor and vulnerable people (40% women) across all districts of Punjab to enhance their employment prospects and incomes.
- **Punjab Agriculture & Rural Transformation Project:** This project will help in improved agriculture productivity, value addition in agriculture and dairy products, marketing of agro-based industry, provision of micro financing facilities to small farmers, encouragement of corporate farming & creation of cooperative societies of farmers especially small land holders, provision of better storage and packaging facilities to small farmers.
- **Punjab Education Support Project III:** This project is the continuation of the Phase II of the Punjab Education Support Project. World Bank will provide US \$ 300 Million in 5 years for education sector through this project. The main objective of this project is the achievement of 100% primary school enrolment of out-of-school children.
- **Transformation of Irrigation Department to Water Resource Department:** Asian Development Bank (ADB) is funding various projects related to irrigation in Punjab. This project which is related to restructuring of the Irrigation Department into Water Resource Management Department. This project will help to bring all the activities related to the Water management & preservation under the umbrella of Water Resource Management Department.
- **Punjab Cultural and Heritage Tourism Promotion Project:** Purpose of this project is the preservation of the religious sites of *sikhs*, *bhuddhists*

and *hindu* communities and to promote cultural and religious tourism in the province. This project is expected to boost the tourism and allied industries of the province.

Social Versus Physical Infrastructure

The issue in the allocation of development budgets is whether investments in social sectors and physical infrastructure complement or compete with each other. In a simple accounting sense, especially given the limited resources available for the ADP, there seems to be a competition among sectors for ADP allocations. But, as Table 3.3, shows, the share of the ADP going to schemes for social development has decreased to 32 percent in 2017-18 from 41 percent in 2012-13. There has simultaneously been a slight decrease in the share of investments in infrastructure from almost 30 percent to under 27 percent. However, the decline in the share of social sector has not come due to large-scale diversion of resources to the infrastructure sectors but because of increases in the shares of special programs/initiatives, some of which are politically driven, while others contribute to the development of the relatively backward areas of the country and focus on removal of service gaps at the individual constituency level.

The new Growth Strategy actually emphasises the ‘synergy’ and complementarity between the social sector and physical infrastructure investments. On the one hand, social development along with civil service reform which leads to the development of human capital in the public sector not only has the direct impact of improving the managerial and technical capacity for more effective execution of complex infrastructure undertakings but also in a broader sense of increasing the development impact of infrastructure investments by enabling a larger ‘crowding in’ of private investment in response to the expansion of productive capacity through the availability of more entrepreneurship and skills in the population. Cost effective public/private initiatives in the areas of education and energy could lift Pakistan in two competitiveness indicators in which it performs poorly.

On the other hand, the presence of more infrastructure like roads, electricity, etc. also makes for greater efficiency in the utilisation of and in the quality of delivery from existing social services facilities. Therefore, the new Growth Strategy focuses on the complementarity between social services and physical infrastructure.

Conclusions

The sectoral priorities in the ADP 2015-16 were: Infrastructure Development, 43 percent; Social Development, 21 percent; Special Initiatives, 18 percent; Services, 11 percent; Production Sectors, 5 percent and the rest are others. Roads sector gets priority within the infrastructure sector while in the social sectors, education and health, are the priority sectors.

Overtime, the development priorities of the Punjab Government have changed

from social sectors to infrastructure sectors. The regional development priorities of ADP allocation are highly correlated with the population shares of regions. The shares of ADP allocations at the district level reveal that the Government has realized the backwardness of Southern region and this giving them a fair share of the development budget.

Like ADP allocation, the size of the infrastructure sectors too is largest in development portfolio of Punjab. The size of infrastructure sectors throwforward is Rs 252 billion, which is 50 percent of total throwforward. In the current development portfolio, Lahore Orange Line Metro Train is the largest project with the cost of Rs 165 billion. In the current development portfolio, the district Lahore has the largest development portfolio.

4

Contribution of ADPs in Punjab's Economic Growth and Development

The objective of this Chapter is to analysis how Punjab's ADPs are contributing to the economic growth and social development of the province. As explained in the introductory Chapter, the public investments through the ADPs give an impetus that boosts the overall activity of the provincial economy, particularly investments in the infrastructure sectors expand the productive capacity of the economy and provide a vibrant environment to the private sector. Currently, different types of infrastructure combined constitute more than 43 percent of the total development portfolio of the Punjab. The projects in the sectors are expected to receive a share of almost 37 percent in the ADP allocations for 2016-17.

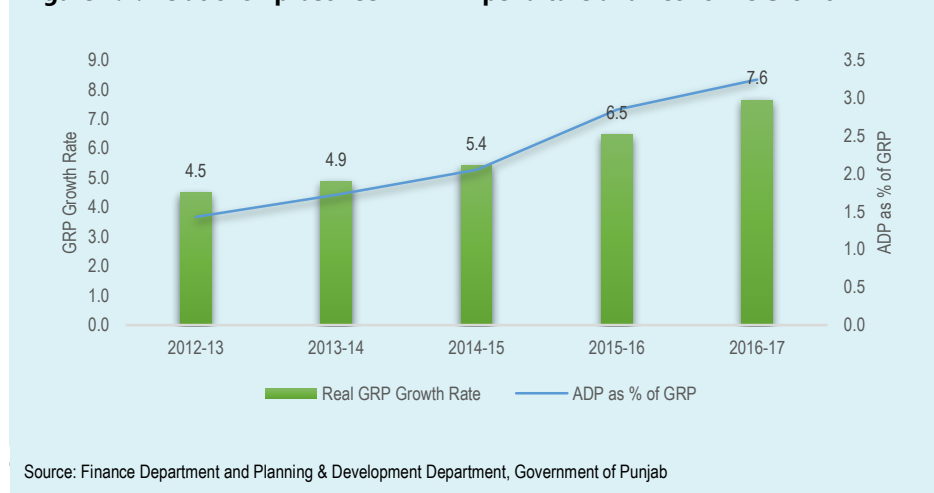
The chapter is organized as follows: the first section presents a simple analysis that relate the ADPs with the economic growth of Punjab. Second section, first, gives the trends in investment in different types of infrastructure during the last five decades and then gives the framework of analysis of the relationship between infrastructure and growth. Section three quantifies the contribution of infrastructure to growth in different sectors of the economy, that is, we used the constructed different indicators of infrastructure availability in Section two to determine the relative effectiveness of different types of infrastructure in contributing to the

evolution of Punjab's economy. Finally, in the last section, we analysed how ADP impacts the human development in Punjab.

Relationship between Development Expenditure and Economic Growth

The primary objective of the ADPs is to provide an environment that boosts the overall economic activity of the province by expanding the productive capacity and providing critical infrastructure to the economy. The purpose of this section is to assess this relationship between the development expenditures and economic growth. Figure 4.1 plots this relationship. In the Figure, the development expenditures are measured as percentage of the gross regional product (GRP) of the province and economic growth rate is the change in the real provincial GRP.

From the Figure we can see that years on which development expenditures are increasing, there is an increase in the economic growth rate of the province and years on which the development expenditures are decreasing, the economic growth of the province slowed down. As the development expenditures were increasing between the period 2012-13 to 2016-17, the economic growth of the province was also increasing. Thus, in the last five years, as the level of

Figure 4.1: Relationship between ADP Expenditure and Economic Growth


economic growth also increased from 4.5 percent to 7.6 percent. This simple analysis reveals that the size of ADP does matter to boost the economic activity in Punjab.

Infrastructure Development and Economic Growth

Physical infrastructure stock development has many important direct and indirect effects to an economy. These effects operate through various channels. For example, through labour productivity gains resulting from improved information and communication technologies, reductions in time wasted commuting to work and stress, improvements in health and education, and through improvements in economies of scale and scope throughout the economy. On the supply side, there is both a direct channel (infrastructure capital stock serves as a production factor), and an indirect one (improved infrastructure affects as a technological progress). From a demand side point of view, infrastructure provides people with services they need and want—water and sanitation; power for heat, cooking,

In Punjab, the low infrastructure development in the past two decades has become a binding constraint to production sector in the economy. It has also impacted to the direct consumption of the household sector and thereby reducing the overall welfare of the general public. Continuous underinvestment since the last few years has further aggravated the situation. Further, the frequent cutbacks in the ADP and the low levels of allocations imply that there is a need for strategic selection of the projects/programs, specifically in the energy sector, to maximize the effectiveness of the development plans. Inadequate and poor-quality infrastructure in Punjab has held back not only economic activity but has also drastically reduced the quality of life of the masses. Thus, the government of Punjab should keep the infrastructure development very high on its action agenda.

Table 4.1 gives decade-wise growth rates of different infrastructure indicators and GRP growth in Punjab. The infrastructure indicators show varying rate of change

Table 4.1: Decade-wise Growth Rate of Different Types of Infrastructure and real GRP of Punjab, 1977 to 2016

	(percentage)				
	1970s*	1980s	1990s	2000s	2010s**
GDP growth rate	5.8	6.1	3.7	4.9	4.0
Electricity Consumption (Gwh)**	13.9	10.7	3.2	4.8	2.8
Water Availability (MAF)	0.8	2.6	1.3	0.1	0.7
Length of Roads (Kilometers)	1.5	9.7	3.1	5.4	0.9
Telecommunications					
- Number of Telephone Lines	8.6	10.4	12.2	-1.3	0.0

Source: Punjab Development Statistics, Government of Punjab. Social Policy and Development Center.

* From 1976-77 to 1979-1980 & ** from 2010-11 to 2015-16.

over the period but most of these have decreasing trends in the last two decades. The fastest growth in electricity is observed in the 1980s. Per capita water availability for agriculture appears to have consistently low over the last five decades. The 1980s also saw relatively rapid expansion in the road network but has visibly slowed down during the current decade.

There has been a virtual explosion in the telephone network during the 1970s, 1980s and 1990s, however, this has decreased very sharply in the last decade because of massive usage in the mobile phones, whose usage has increase significantly during the same period. Also, from the Table 4.1, we can see that infrastructure appears to relate significantly to GDP growth rate. This is particularly true in the decades of 1970s and 1980s mainly through accumulating huge infrastructure stock. In the current decade, growth of most infrastructure variables has slowed down, only the mobile phones and water availability indicators have shown positive growth, although, the growth rate is very minor compare to early periods.

Against this background, the objective of this section is to determine how infrastructure stock impacts economic growth, specifically, to determine which types of infrastructure, that is, electricity, roads highways, power, telecommunications, irrigation, etc., are more effective from the viewpoint of raising the growth rate of the provincial economy as a whole. Findings of the research will have implications on the allocation priorities within the ADP.

Framework of Analysis

A number of theoretical justifications for investing in infrastructure are found in the growth literature. Straub (2008) indicates that most of the channels of impact of investment on growth can be found in the following generic framework based on an aggregate production function.

$$Q = A(\theta, K_I) \cdot F(K, L, G(K_I)) \dots (1)$$

where Q is real aggregate output, K is the (non-infrastructure) aggregate capital stock, L is aggregate labour input and A is the standard total factor productivity term. K_I enters the production via $G(K_I)$. This assumes that the stock of infrastructure has

essentially public good attributes and produces services in a non-rival and non-excludable way. But this is a strong assumption given the private good characteristics of some infrastructure.

Therefore, a better interpretation is that infrastructure K_I enters the production function through services provided by this type of capital ($G(K_I) = I(K_I)$) rather than simply as an additional factor of production as assumed in most of the literature. An increase in K_I lowers the cost of intermediate inputs like transport, communications, power, etc., that enter a firm's production function. Therefore, $G(K_I)$ captures effectively the 'direct' effects of infrastructure.

The formulation in (1) also distinguishes between two sources of increase in the faster productivity parameter A : generic efficiency-enhancing externalities represented by θ , and such externalities specifically linked to the accumulation of infrastructure capital. The latter can be referred to as the 'indirect' effects of infrastructure.

With regard to the 'direct channel', in a standard production function, with factors being gross complements, an increase in the stock of capital could raise the productivity of other factors. An extreme effect corresponds to the case of strong complementarities. For example, the rate of capacity utilisation of plant and machinery depends on the availability of power.

With regard to the 'indirect' effects there is, first, the impact of infrastructure on private capital durability. For example, there is the reduced life of trucks operating on bad roads. Second, infrastructure reduces adjustment costs by lowering the logistic costs of private investment. Third, there is the potential effect on labour productivity through reduction in time for commuting to work and better organization of work due to access to information technology and telecom. Fourth, infrastructure provides for economies of scale and scope, for example, lower transport costs lead to better inventory management.

Empirical research on the impact of infrastructure on growth has relied mostly on macro-econometric techniques, generally based on estimation of some version of an aggregate production function. Almost two thirds of the specifications find a positive and significant link between infrastructure and some development outcome like growth.

However, the type of infrastructure proxies used has evolved. During the 1980s and 1990s some measure of public capital in infrastructure was used. The more recent

trend is to use physical indicators of infrastructure availability. Part of the reason for this shift is that a significant part of infrastructure, like electricity and telecommunications, is by the private sector. Also, public capital stocks may not accurately reflect physical provision due to problems of inefficiency and governance failure.

In the section below, based on the above framework, we determine separately the contribution of different types of infrastructure to growth. In case of Punjab, it is not possible to undertake analysis of the role of infrastructure in sectoral production functions because of non-availability of data on the private and public capital stock at the provincial level.

Growth Regression Analysis

To estimate the impact of individual physical infrastructure stock on the economic growth of Punjab, we used the following growth regression technique:

$$g_t = \beta_{0t} + \beta_{it}Z_{it} + \beta_{jt}K_{jt} + e_t \dots (1)$$

$$\text{while } i = 1, 2, \dots, m \text{ \& } j = 1, 2, \dots, n$$

Table 4.2: Results of Regressions Analysis on Infrastructure and Economic Growth^a

	Dependent variable is Real GRP Growth Rate							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	4.677 (2.96)**	4.126 (2.78)***	1.866 (1.43)	4.236 (2.92)***	5.343 (3.45)***	1.468 (2.16)**	1.747 (2.44)**	1.653 (2.15)*
Agriculture Growth Rate	0.232 (3.89)***	0.268 (4.66)***	0.127 (2.34)**	0.190 (3.34)***	0.254 (4.37)***	0.150 (5.31)*	0.153 (5.19)***	0.150 (4.82)***
Nominal Interest Rate (%)	-0.250 (-2.52)***	-0.212 (-2.27)**	-0.106 (-1.23)	-0.207 (-2.26)**	-0.285 (-2.96)***	-0.067 (-1.60)	-0.055 (-1.30)	-0.049 (-1.07)
Growth Rate of Mean Years of Schooling	0.372 (3.44)***	0.283 (2.64)***	0.228 (2.44)**	0.297 (2.89)***	0.290 (2.59)***	0.157 (3.40)***	0.143 (2.96)***	0.146 (2.93)***
Growth Rate of Electricity	-	0.089 (2.40)**	-	-	-	0.034 (2.06)**	0.042 (2.44)**	0.042 (2.42)**
Growth Rate of Length of Roads	-	-	0.328 (4.22)***	-	-	0.336 (8.25)***	0.236 (5.09)***	0.238 (5.01)***
Growth Rate of Water Availability	-	-	-	0.135 (2.66)***	-	-	0.081 (3.20)***	0.084 (3.12)***
Growth Rate of Availability of Telephones	-	-	-	-	0.028 (1.94)*	-	-	0.026 (1.72)*
Adjusted-R ²	0.826	0.850	0.889	0.856	0.841	0.726	0.973	0.973
F-statistics	53.39***	47.85***	66.95***	49.89***	44.69***	16.426***	152.27***	130.72***
DW-Stat	1.452	1.486	1.671	1.871	1.467	2.067	1.776	1.766
SC-Value	3.002	2.924	2.627	2.888	2.983	3.367	1.461	1.558

^a Note that the asterisks ***, **, * indicate that the coefficients are significant at the 1%, 5% and 10% level of significance. Values in parentheses are the t-ratios. SC-value is the Schwarz criterion value. SC-Value is the Schwarz Criterion value. The analysis period is from 1976-77 to 2015-16.

where g_t is the growth rate of real GRP, Z_t is a vector of control variables and K_t is a vector of physical infrastructure variables. To control the structure of the economy we used the following variables: agriculture growth rate, nominal interest rate, and the mean years of schooling. On the other hand, the following indicators of physical availability of infrastructure have been used in the analysis:

- electricity consumption (Gwh),
- availability of water for agriculture (in MAF), including water from tubewells,
- length of roads (in Kms), and
- telephone lines (including mobile phones).

The data on the above indicators has been obtained for the period, 1976-77 to 2015-16, from the Punjab Development Statistics, Bengali and Sadaqat (2001) and IPP (2012).

Results of the econometric analysis of the impact of growth of different types of infrastructure on the growth rate of real GRP growth rate are given in Table 4.2. Initially, we ran regression only on the controlled or exogenous variables, which are agricultural growth, nominal interest rate and mean years of schooling. These are also the structural variables, that is, these define the structure of the economy. Then along with these exogenous variables each infrastructure indicator is introduced separately, in equations (2) to (5) respectively. Thereafter, different infrastructure indicators are added sequentially in equations (6) to (8).

The results of the regressions with separate indicators indicate the high level of significance all the infrastructure variables especially of roads that is most highly significant and has the largest value of the coefficient. The electricity, telecommunications and water availability indicators are also significant respectively at the 5, 1 and 10 percent level of significance. As expected, the exogenous variables, especially agricultural growth, are mostly highly significant in all regressions. The other two exogenous variables are also highly significant.

The results do not alter when all infrastructure indicators are introduced simultaneously into the regression analysis. The significance of the roads length indicator remains unchanged, highlighting the robustness of the relationship between availability of roads and growth. From the analysis, it is clear that part of the reason for the decline in GDP growth rate in the last few years is clearly due to the failure in expanding infrastructure variables, especially power generation capacity and roads. Overall, the results clearly demonstrate a clear positive and highly significant differential impact of various types of infrastructure on growth.

Hence, while the ADP may be important in kick-starting the economy under recessionary conditions, it is not sufficient to sustain the required rates of overall investment in the economy. To “crowd in” sustained private investment requires more than just a high level of public investment in physical infrastructure and development of human capital, it requires the government to play its role as an “enabler” (or facilitator) in the economy, by providing the appropriate institutional framework, including laws and regulations, such as guaranteeing property rights, providing for contract enforcement and dispute resolution mechanisms, for example. In addition, improvements in security and law and order need to be focused.

The Fiscal Multiplier of ADP

In Chapter 2, we highlighted a rapidly increasing trends of ADP allocations in Punjab due to an expanding fiscal space mainly after the 18th Amendment. The objective of this section is to estimate the implications of the size of the ADP on the provincial GRP, which are quantified through the ‘fiscal multiplier’.

The calculation of the fiscal multiplier is usually done by using the Macroeconomic models or Dynamic Stochastic General Equilibrium (DSGE) models. Recently some studies using the single equation models has calculated the size of fiscal multiplier. Well known of these studies are of Barro & Redlick (2011), Owyang *et al* (2013) and Ramey & Zubairy (2018). Following the methodology of these studies, the report estimates fiscal multiplier for the Punjab's economy. Thus, the methodology used for

Results of empirical analysis proved a positive and highly significant differential impact of various types of infrastructure on growth.

Box 4.1: Measurement of the Economic Development Index

The economic development index of the districts is a composite index developed by aggregating the sub-indices of all sectors of the provincial economy. Following is the list of social and economic indicators used:

Sector	Indicator	Sub-indices
Agriculture	Crop	<ul style="list-style-type: none"> • Share of district in value of major crops output • Percentage share of district in minor crops output
	Livestock	<ul style="list-style-type: none"> • Adult animal units per capita • Value of milk production per capita • Poultry birds and poultry production per capita
	Forestry	<ul style="list-style-type: none"> • Aggregate score of compact & linear plantation
	Fisheries	<ul style="list-style-type: none"> • Value of fish production per capita
Industry	-	<ul style="list-style-type: none"> • Percentage share of district in number of industrial units and value added
Services Sector		<ul style="list-style-type: none"> • Percentage share of district in services sector labour employment
Education		<ul style="list-style-type: none"> • Literacy rate • Gross attendance
Health		<ul style="list-style-type: none"> • Number of hospital beds per 1000 population • Extent of use of contraceptive • Extent of immunisation
Housing		<ul style="list-style-type: none"> • Proportion of households having <i>pakka</i> floor • Proportion of households having <i>pakka</i> roof • Proportion of households having <i>pakki</i> wall • Proportion of households having owned at least one utility
Water Supply & Sewerage		<ul style="list-style-type: none"> • Proportion of households using properly treated water • Proportion of households using improved sanitation
Roads and Transport		<ul style="list-style-type: none"> • Length of national highway, provincial, agricultural and other department provincial roads/ square mile of geographical area • Motor cycles per 100 households • Cars per 100 households • Other public transport (taxis, auto-rickshaw, buses, flying/luxury coaches, pickups/ delivery vans tractors etc.) per 1000 population

the calculation of fiscal multiplier is as follows:

$$\frac{y_t - y_{t-1}}{y_{t-1}} = \beta_0 + \beta_1 \cdot \frac{g_t - g_{t-1}}{g_{t-1}} + \beta_2 \cdot \frac{g_t^* - g_{t-1}^*}{g_{t-1}^*} + \text{other variables ... (2)}$$

where y_t is the real gross domestic product (GDP), g_t is the government spending, g_t^* is the desired government expenditure and other variables could include interest rate, unemployed labour force, tax rates etc. In the equation, y_t will be measured by the real GRP, g_t will be measured by the real revised

ADP and g_t^* is the real budgeted ADP proxied for desired level of government development spending. The real ADP is measured by dividing the nominal ADP by the consumer price index (CPI). Other variables in analysis will include unemployed labour force. In the equation (2), is the estimate of the government development expenditure multiplier. Simple ordinary least square (OLS) regression technique is used to measure the equation above. The analysis period is from 1973-74 to 2016-17.

Using the OLS method, we find out that the estimate of the multiplier is 2.7, which means that a one rupee increase in the development expenditure in Punjab

leads to 2.7 rupee increase in the GRP of Punjab.

ADP and Economic Development

This section finds out how ADP expenditure by district impacts the economic development of districts in Punjab. Economic development (ED) is a composite index which is measured from various economic and social dimensions. The dimensions are: agriculture, industry, services sector, education, health, housing, water supply & sewerage, roads and transport. What indicators are included in each dimension given in Box 4.1.

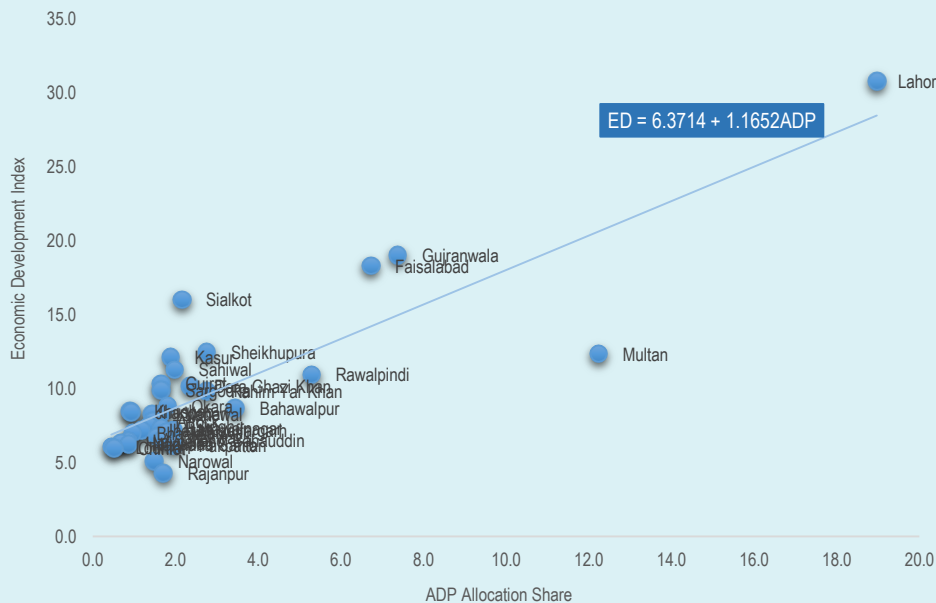
The districts status of ED is shown in Figure 4.2. As per the findings, only three of

Mandi Bahauddin, Layyah, Hafizabad, Nankana Sahib, Pakpattan, Lodhran, Chiniot, Narowal, and Rajanpur.

The link between the ADP allocation and ED at the district levels is plotted in Figure 4.3. From the scatter plot and the trend line passing through the points, we can see that there is a strong positive link between the ADP and the ED. The equation of their relationship is given in the Figure. Both the coefficients are statistically highly significant. The coefficient of ADP means that 1 percent increase in the ADP allocation to the district would increase the ED of the province by 1.17 percent.

According to the ranking of ED, Lahore is the most developed district of Punjab.

Figure 4.3: ADP and Economic Development in Punjab



Source: PERI (2016) and Planning and Development Department, Government of the Punjab. Note that ED denotes economic development.

the districts fall in the high economic development category. These three districts are: Lahore, Gujranwala and Faisalabad. Districts in the medium economic development are: Sialkot, Sheikhupura, Multan, Kasur, Sahiwal, Rawalpindi, Gujrat, Dera Ghazi Khan.

Rajanpur is the least developed district of Punjab. Other districts on the low EDI category are (arranged from highest score to lowest score within group): Sargodha, Rahim Yar Khan, Okara, Bahawalpur, Khushab, Jhang, Vehari, Khanewal, Attock, T T Singh, Bahawalnagar, Muzaffargarh, Jhelum, Mianwali, Bhakkar, Chakwal,

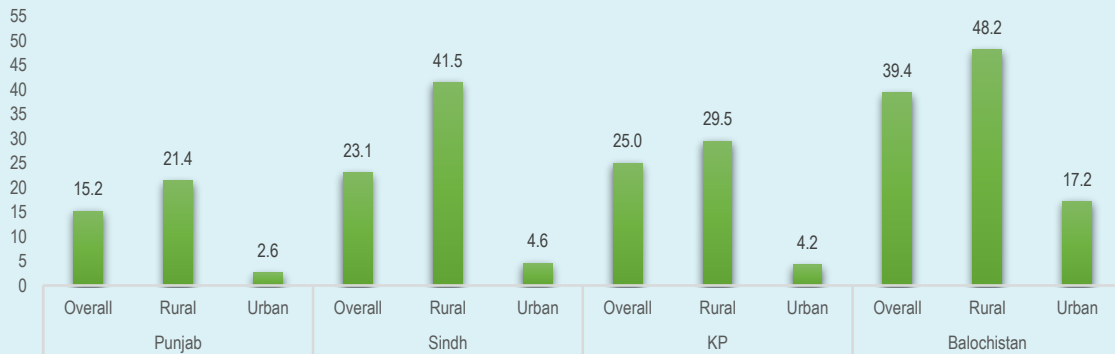
Poverty and ADP

Ensuring fair distribution of resources and eradicating poverty, as mentioned, are also one of the main goals of the ADP. This section looks at is the share going to the districts of Punjab reflects this goal of the ADP or not, that is, is the Government allocating the development expenditure in such a way that it is diminishing the incidence of poverty.

Figure 4.4 shows poverty incidence by province in Pakistan. Overall, Punjab has the lowest incidence of poverty and Balochistan has the incidence of poverty. The incidence of poverty by urban and rural area

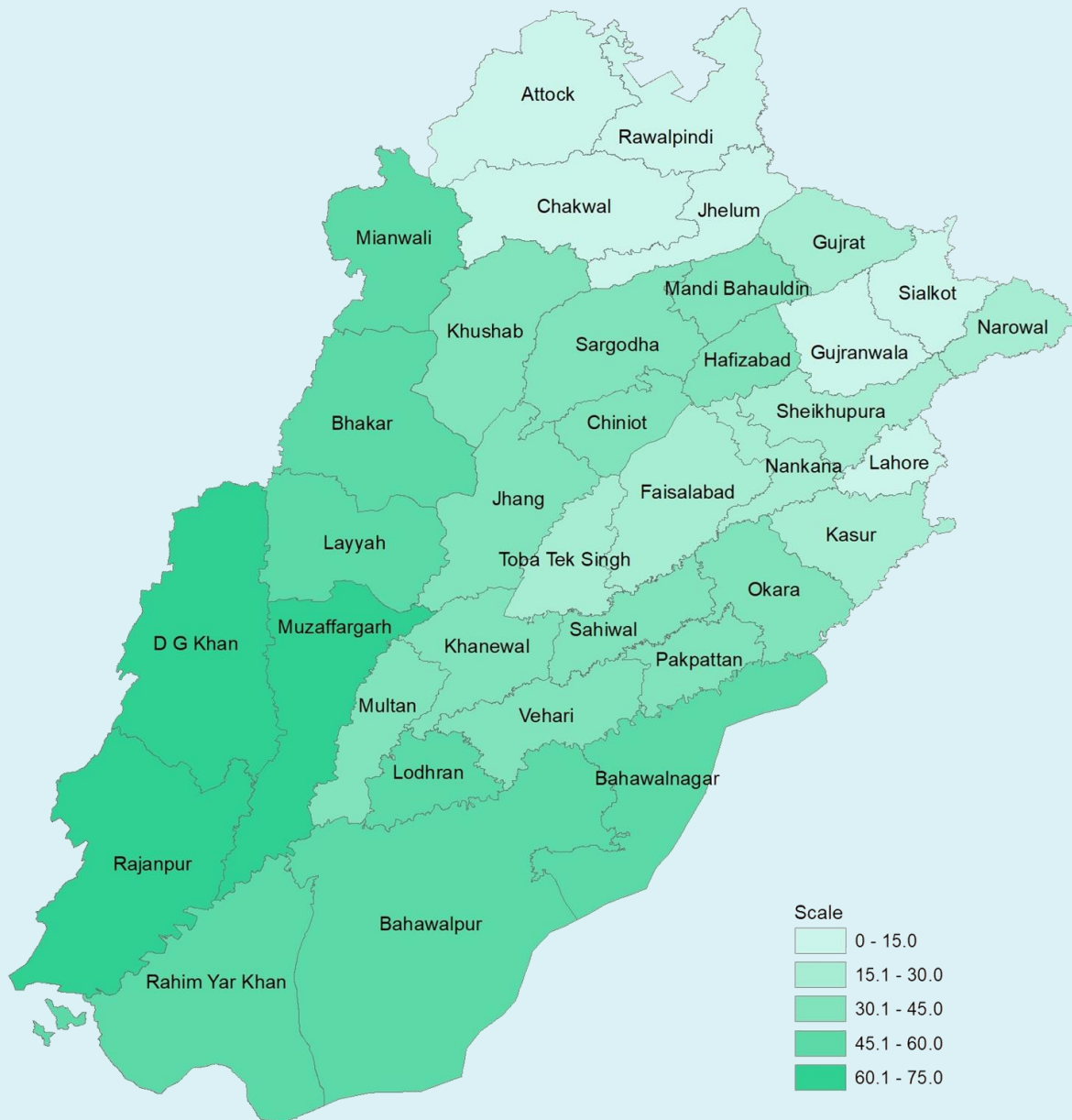
is also minimum in Punjab. Figure 4.5 shows the map of overall incidence of poverty by districts of Punjab. At the district level, Muzaffargarh, Rajanpur and Dera Ghazi Khan are the districts with poverty incidence above 60 percent. Similarly, the

Figure 4.4: Poverty Incidence by Province



Source: OPHI (2016).

Figure 4.5: Multidimensional Poverty Index 2016



Source: Data taken from the OPHI (2016).

districts Rahim Yar Khan, Bahawalpur, Bhakkar and Bahawalnagar have poverty incidence of above 50 percent. These rates are quite high, and the Government of Punjab need to pay highest attention to these districts. The districts with lowest incidence of poverty are Attock, Jhelum, Rawalpindi and Lahore. Less than 10 percent of people fall in the poverty line.

Figure 4.6 plots the relationship between ADP allocations and poverty. As can be seen from the scatter plot and the trend line passing through the points, there is a negative and statistically significant relationship between the ADP allocations to the districts and poverty. That mean the more the ADP allocation to the districts that have the high incidence of poverty would help to eradicate it. On average, 1 percent increase in the ADP allocation would decrease the incidence of poverty by 1.6 percent. This impact is quite high, and the government should increase allocation of ADP to districts with high incidence of poverty. The equation of their relationship is shown in Figure 4.6.

Conclusions

The different types of analyses undertaken in this Chapter clearly demonstrate that development priorities in the ADP do matter from the viewpoint of economic growth and development. Firstly, investments in roads, power generation and in enhancing the availability of water for agriculture have significant effects on growth. Within the ADP, the sector actually receiving the largest allocation currently in the area of infrastructure development is roads while other sectors are not well focused. However, recently under the China Pakistan Economic Corridor (CPEC) lot of investment is coming in the energy sector and also lot of investment in undertaking by the private sector. Once the projects in the CPEC and those by the private sector complete, the energy constraint will be over from the province.

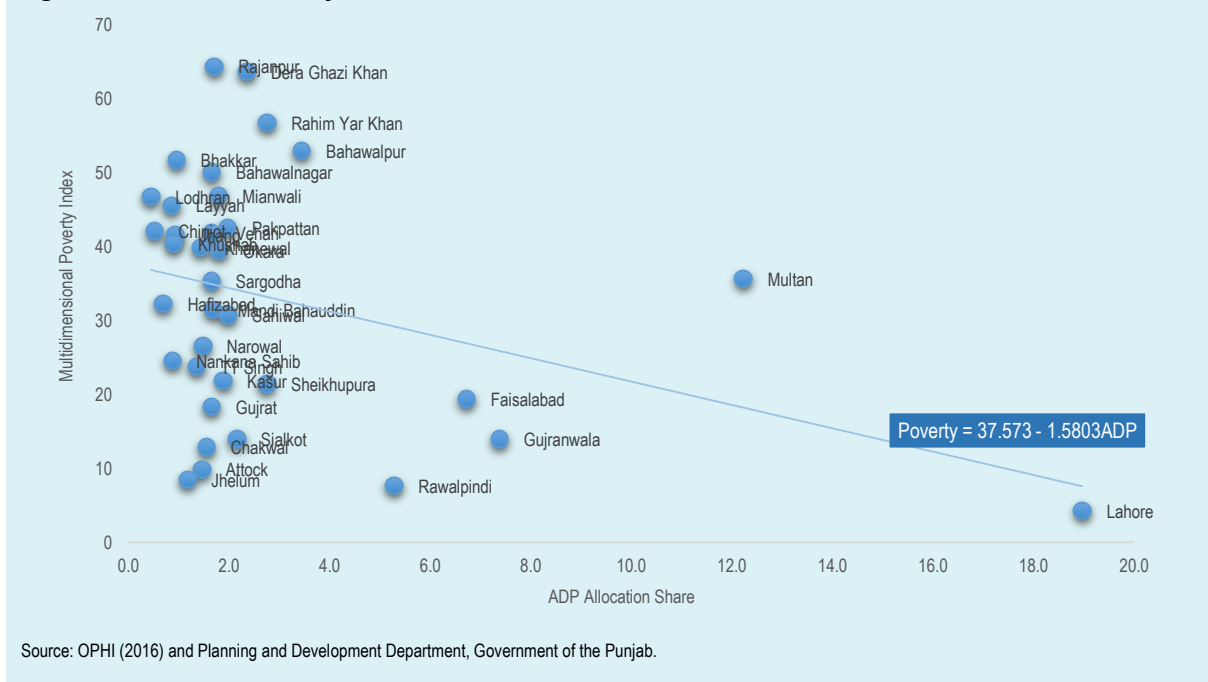
However, from the development priorities of the ADP, there is a case for changing the priority and diverting resources away from other sectors to water and power to achieve a bigger impact on GRP growth, within a given size of ADP. Further, the PPP/BOT mode may be explored.

Lahore has the least incidence of poverty...

... the highest incidence of poverty is Dera Ghazi Khan

Rajanpur is the least developed district of Punjab.

Figure 4.6: ADP and Poverty





EDUCATION SECTOR

Introduction

Punjab is committed to providing free and compulsory education to all children of the age of five to sixteen as per the Constitution and Punjab's Free and Compulsory Education Act 2014. With the province unable to fulfil the Education for All goal (UNESCO) by the year 2015, it implies that more efforts need to be made in the education sector especially at the primary level. In a province encompassing 110 million individuals, the highest among the rest of the provinces in Pakistan, provision of basic education is not only important for social development but also for economic prosperity.

With about 86 percent of the primary schools being part of the public sector², the access to education must be easier for majority. However, as per the calculations of National Institute of Population Studies (NIPS), with 51 million children aged between five to sixteen years, only 28 million children (56 percent) are enrolled in a public or private educational institute, whereas 23 million children (44 percent) are out of school. Since about 5 million children of primary school going age are not attending school, it seems that even the higher proportion of public educational institutions

have been unable to increase the enrolment in primary schools.

Compared to other provinces, Punjab has a much lower out of school children wherein of all school going aged children (3 to 17 years), 33 percent are out of school.³ At primary level, about 22 percent are out of school. The rate is relatively higher for females at 57 percent. Albeit the province is doing better in this regard, there is a need to reduce the gender disparity since educating females has known to have long term positive implications (Subbarao and Raney, 1995; Klasen, 2002). In fact, females attaining higher levels of education is extremely valuable (Pande et al, 2005) for a developing nation such as Pakistan. Realizing this, Punjab Government is establishing more girls' colleges in lesser developed areas to improve the participation of females at higher levels, in hopes that this will translate into a possibly competent and diverse workforce. Nonetheless, there is still a long way to go before this happens and for this purpose, the efforts need to be complemented with campaigns aimed at changing mindsets and accelerating the implementation process of projects.

² Source: Pakistan Education Statistics (NEMIS-AEPAM, 2015-16)

³ Punjab Economic Report 2017

With the Annual Development Programme (ADP) being the foundation for developmental schemes in the whole of province, inclusion of relevant projects in the programme is extremely crucial for attaining the desired objectives. Hence, ideally the ADP should be a mix of both demand and supply side interventions. However, as per the programme, the focus is on *demand* side interventions accompanied by increasing the supply side of educational inputs. Notwithstanding, more than 60 percent of the schemes in the ADP 2016-17 are related to providing additional/missing facilities (such as furniture, bathroom, boundary wall etc.), setting up new school buildings, and the physical expansion of existing schools. Thus, implying imprecise compliance with the sectoral plans.

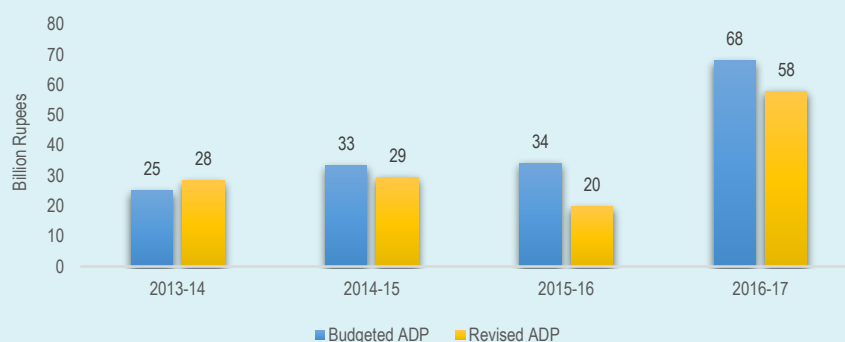
The following sections aim to provide a holistic view of the developmental efforts being made in the education sector by the Government of the Punjab (GoPB). For the purpose of our analysis, education sector comprises of school education, special education, higher education, and literacy and non-formal basic education. Section 2 illustrates the trends in the ADP over the years,

while section 3 gives an in-depth analysis of the ADP 2016-17. This is followed by section 4 wherein an evaluation of the ADP, in accordance with the various strategies and sectoral plans devised, has been conducted. While Section 5 gauges the performance of the sector with respect to the investment made over the years, Section 6 highlights the various development initiatives undertaken. The chapter concludes with Section 7 offering recommendations to enhance the planning and implementation of education related projects.

Trends in the Education Sector ADP

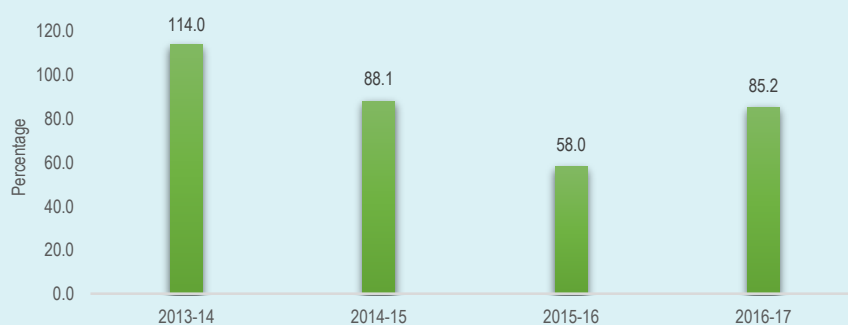
Figure 5.1 shows the apparent trend of the ADP allocations over the years and how it compares with the actual ADP allocated (or realized). Since the last two years, the allocation to the education sector has low at around Rs. 34 billion. Whereas the revised allocation was lesser than the budgeted ADP, at about Rs. 20 billion. However, this year the budget allocated (both budgeted and revised) to the sector has been almost twice (and more than twice in the case of revised) the ADP allocation in 2015-16. Moreover, the actual size of the ADP, after

Figure 5.1: Trends in the size of ADP (Budgeted vs Revised)



Source: Finance Department, Government of the Punjab.

Figure 5.2: Revised ADP as % of Budgeted ADP



Source: Finance Department, Government of the Punjab.

incorporating all the revisions has seen a reduction by about 15 percent over a couple of years (see Figure 5.2). While difference between the budgeted and revised is not extremely large. Nonetheless, the variation is not encouraging as it implies that the funds being allocated in reality are lower than what

year⁴ (FY) 2013-14. However, the subsequent allocation reduced to about 10 percent, only to be slightly raised to about 16 percent in 2015-16. But the ADP allocation to the sector during the 2016-17 period has significantly been cut to a mere 12 percent. It is important to note here that over the

Figure 5.3: Education Sector ADP as Percentage of Total ADP

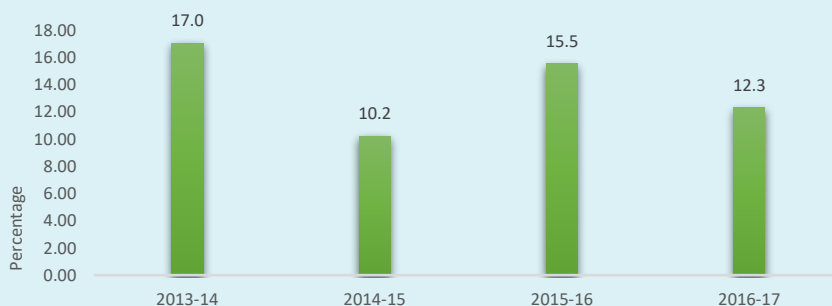
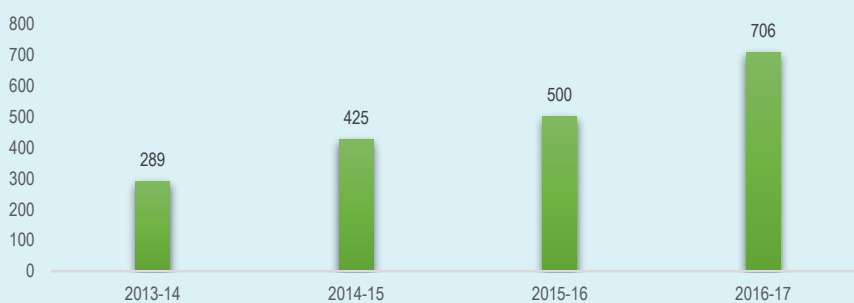


Figure 5.4: Total Number of Schemes



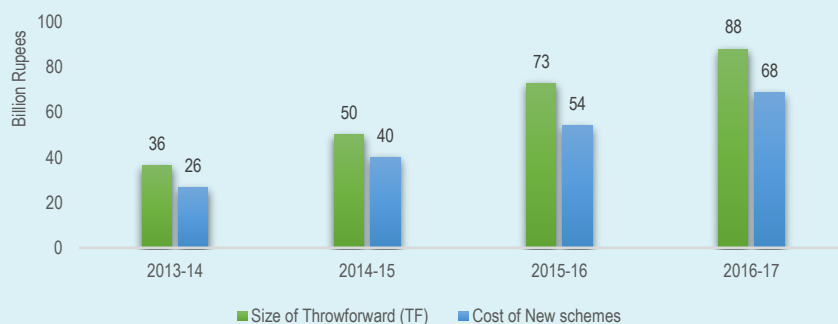
Source: Finance Department, Government of the Punjab.

was initially promised.

The much higher ADP allocation to the education sector in 2016-17 is an encouraging sign but if we analyze it in proportion to the total ADP, the results are not very heartening. As can be seen in Figure 5.3, approximately 17 percent of the actual ADP was allocated to development schemes in the education sector in the fiscal

years, the number of schemes included in the ADP have witnessed a rise with the total schemes increasing each year. However, it is still concerning that the number of schemes in the period 2016-17 have not received a higher portion of the total ADP (as seen in Figures 5.3 & 5.4). This inconsistent pattern of allocation to the education sector is concerning as majority of the on-going schemes

Figure 5.5: Throw-forward and Cost of New Schemes



Source: Finance Department, Government of the Punjab.

⁴ Henceforth referred to as FY.

are still part of the 2016-17 ADP. And with the inclusion of new schemes and the total number of schemes being much higher over the last two years (an average of 603 versus the 425 in the previous ADP), the size of the allocation to the sector is dismally low and insufficient. In addition to this, the size of the overall ADP has gradually increased over the years, but it seems that the education sector is still not getting the required attention due to the fluctuations as presented in the diagrams above.

Funds allocated to a particular sector are also contingent upon the size of the throw-forward⁵ (TF). As clearly visible in Figure 5.5, there is an upward trend of the size of the TF with the size of the TF in 2016-17 having increased 2.4 times more than the size in 2013-14. Additionally, the cost of schemes has also been rising since 2013. It can then be implied that with the increase in the number of new schemes each year (as stated in Table 5.1 below), the TF size is also expanding because the allocation to these new projects is initially low which automatically causes the leftover amount (i.e. the difference between the cost and the allocation) to become part of the TF.

A further look into the various components of the ADP will allow to identify the changes in the structure of the ADP over the time period 2013-2017. Given this, Table 5.1 provides a summary of the key indicators of the ADP.

The table shows how over the years, the average cost per scheme has gradually fallen. In comparison to overall average cost, the change is more pronounced for new schemes with Rs, 315 million in 2013-14 to almost less than half at Rs. 143 million. Thus, experiencing a negative average annual growth rate of about 23 percent.

Moreover, a look at the allocative efficiency figures indicate a lack of fiscal discipline with majority allocations being made to new schemes. While the optimal ratio of 60:40 (ongoing schemes: new schemes) is necessary to maintain fiscal discipline⁶, so far, this condition has not been met. As the trend of allocating majority amount (on average about 81 percent of the total allocation) to new schemes continues.

Table 5.1: Key Indicators of the ADP

	2013-14	2014-15	2015-16	2016-17
Number of Schemes	289	425	500	706
On-Going Schemes	205	238	248	227
New Schemes	84	187	252	479
Percentage of New Schemes	29 %	44 %	50 %	68 %
Cost of New Schemes as % of Total Cost	50 %	62 %	61 %	67 %
Average Cost per Scheme (Rs Million)	183	153	176	144
On-Going Schemes	81	105	138	146
New Schemes	315	214	214	143
Average Allocation per Scheme (Rs Million)	98	69	68	82
On-Going Schemes	26	25	21	41
New Schemes	275	126	114	101
Allocation as proportion to Cost of Schemes	0.538	0.452	0.387	0.569
On-Going Schemes	0.200	0.235	0.156	0.278
New Schemes	0.875	0.588	0.533	0.710
Allocative Efficiency of the Sectoral ADP*				
On-Going Schemes	19	20	22	16
New Schemes	81	80	78	84

Source: Finance Department, Government of the Punjab.

*Percentage of the total sectoral allocation going to on-going and new schemes

⁵ Henceforth referred to as TF.

In this report, throw-forward is defined as the difference between the estimated cost of schemes and the total expenditure incurred up until the start of the new FY. For example, the TF for the period 2016-17 will be calculated by

subtracting the total expenditure incurred till the start of the FY 2016-17 (i.e. up to June 2016) from the total estimated cost of the scheme/project.

⁶ Punjab Economic Report (2017)

Analysis of ADP 2016-17

This section will provide an in-depth examination of ADP 2016-17. More specifically, the nature, size (on the basis of estimated cost) distribution, and concentration of schemes have been analyzed. Additionally, the progress of on-going schemes has been evaluated and an estimation of the time left for these schemes to achieve completion has been done.

Size Distribution of New Schemes

Figure 5.6(A) illustrates the distribution of new schemes on the basis of estimated cost. Categorizing 479 schemes into various size brackets (as represented on the horizontal axis), it can be seen that almost half of the

schemes have an estimated cost up to Rs. 10 million. On the other hand, relatively expensive schemes costing more than Rs. 100 million constitute of only about 12 percent of the total new schemes. This reaffirms the observation made earlier that with increasing overall ADP allocation and the number of new schemes, the allocations being made to the projects is becoming smaller. And one reason for this is the fact that the magnitude of the projects is reduced as the average cost of schemes belonging to the first category is Rs. 6.7 million. Similarly, the allocations are being divided amongst the increasing number of schemes. At the other end, there are only three schemes worth more than Rs. 5000 million. These schemes

Figure 5.6(A): Size Distribution of New Schemes

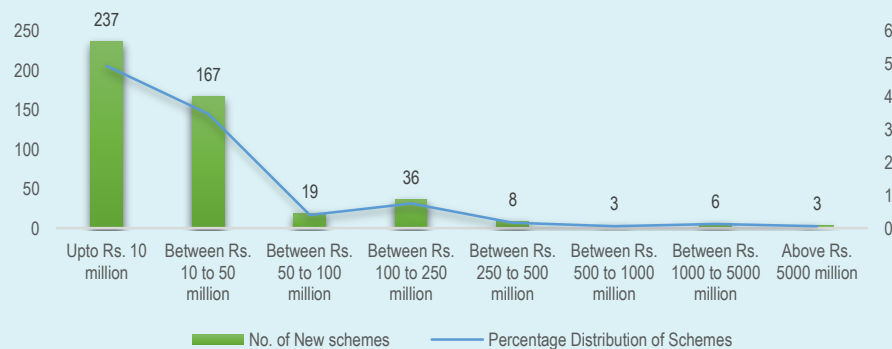
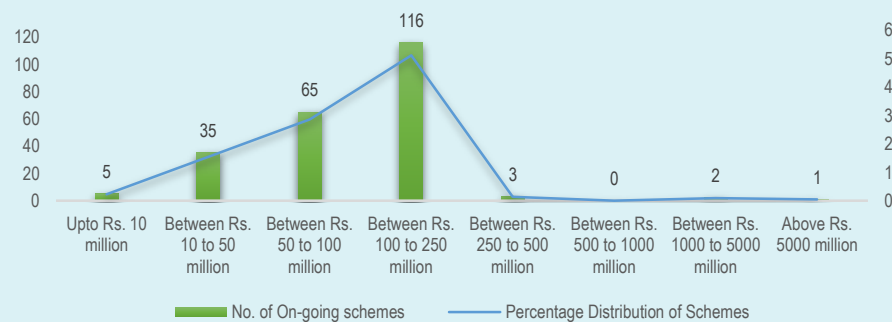
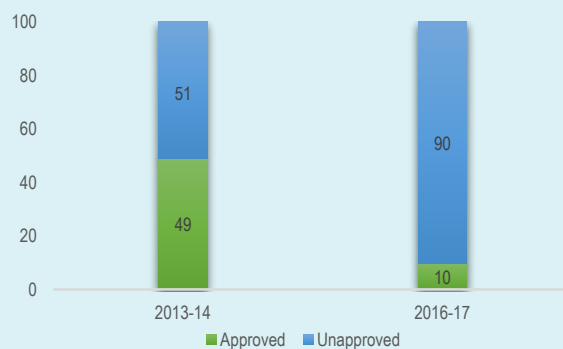


Figure 5.6(B): Size Distribution of On-Going Schemes



Source: Finance Department, Government of the Punjab.

Figure 5.7: Percentage of Approved and Unapproved New Schemes in the ADP



Source: Finance Department, Government of the Punjab.

are spread all over Punjab which has understandably raised the cost.

A look at the size distribution of on-going schemes indicates a somewhat different structure [see Figure 5.6(B)]. Carried forward from previous years, approximately 51 percent of the total on-going schemes have an estimated cost between the Rs. 100 to 250 million range. With active projects having high costs, the corresponding allocations also need to be adequate so that these schemes are completed on time. However, this is not the case as with increased number of new schemes in the ADP, the allocations to these schemes is also diminishing. Thus, resulting in a greater throw forward which means that the projects are unlikely to meet their deadlines. Given this, the actual cost of the schemes will exceed the estimated cost the longer the delay.

Unapproved Schemes in the ADP

According to the P&DD, Punjab, including schemes that are yet to be approved is not encouraged but Figure 5.7 suggests otherwise. In 2013-14, the proportion of approved and unapproved schemes was relatively fair with about 49 percent of the new schemes being approved and receiving allocations. For the year 2016-17, the proportion fell drastically to 10 percent. With such

a high percentage of new schemes being attributed to those schemes that are yet to be approved, the size of the ADP is inflated. Unapproved projects can be understood to be those project plans that are work-in-progress. Since these projects cannot be immediately implemented, it is likely to result in delays and budget under-execution.

Evaluating the Progress of On-going Schemes

While inclusion of new and widespread schemes in the ADP need to be encouraged so as to improve the equitable distribution between the thirty-six districts. Nonetheless, it is equally important that already active schemes are continuously monitored at regular intervals. This is primarily to ensure that these schemes are operating smoothly and also to determine whether they will be completed in the stipulated time or not. Given this, Figure 5.8(A) below presents the extent of completion of the on-going schemes. For this analysis, it is understood that once expenditure equals the total estimated cost of a scheme, the project is termed complete. Categorizing the number of schemes in terms of percentage completed, it can be seen that around 34 percent of the on-going schemes have just been completed up to 25 percent while 30 percent of the schemes fall in the 25 to 50 per-

Figure 5.8(A): Extent of Completion of the On-going Schemes

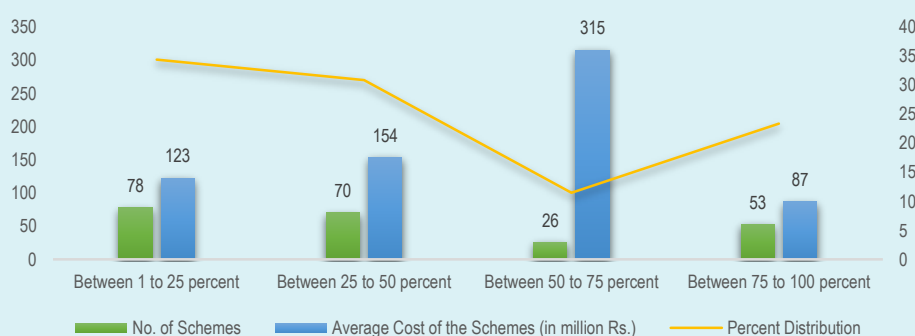
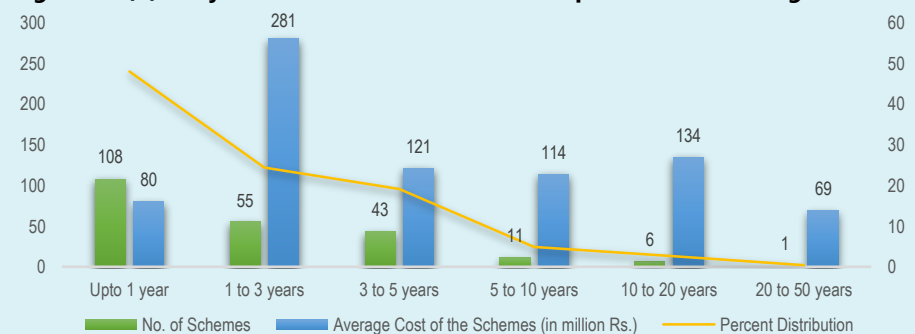


Figure 5.8(B). Projected Time to be taken for Completion of On-Going Schemes



Source: Finance Department, Government of the Punjab.

cent category. In comparison, only 23 percent of the total on-going schemes are at least 75 percent complete. This indicates that majority of the schemes are less than or half partially complete and still have a long way to go before the allocations over the years are sufficient to cover the cost of the schemes. It needs to be noted that very few schemes are 50 to 75 percent complete. However, the average cost of these schemes is relatively high at Rs 315 million.

Keeping in view the degree of completion of the on-going schemes, the duration in which the schemes are likely to be completed is illustrated in Figure 5.8(B). Assuming that the trend in the allocations to the schemes persists, the projected time to be taken for completion of on-going schemes have been calculated. According to the figure below, 48 percent of the schemes will be completed in about one year. Nonetheless, more than 50 percent of the on-going schemes will achieve completion beyond the one-year mark. In fact, 11 schemes are likely to take five to ten years to complete while other six have a projected time between ten to twenty years.

Quite a few of the on-going schemes have been continuing for a while. Given the time completion estimates in Figure 5.8(B), these schemes need to pick up pace and for this purpose receiving adequate allocations is extremely important. As otherwise, the longer the duration for project completion, the higher the financial and economic costs to be borne in the future.

Developmental Allocations at the District Level

While the overall development budget for the FY 2016-17 amounted to Rs. 58 billion, it is worthwhile to see how this amount has been allocated to the different areas of Punjab. As this will allow one to rationalize the (un)equitable appropriation of funds to the districts. The breakdown of allocations in per capita terms is illustrated in Figure 5.9(A).

From the figure above, it can be seen this year, Rahim Yar Khan received highest per capita allocations (of Rs. 2744 million) while Lahore came second with an allocation of Rs. 2053 million. On the end, Ha-

fizabad and Pakpattan have received allocations just below Rs. 200 million. While the rest of the districts have received somewhat equal allocations (ranging between Rs. 200 to 400 million) except for Faisalabad (Rs. 873 million), Gujranwala (Rs. 609 million), Multan (Rs. 533 million), and Sialkot (Rs. 677 million) which attained relatively higher per capita development funds. Figure 5.9(A) indicates that the distribution of funds has been relatively fair, excluding Lahore and Rahim Yar Khan. Figure 5.9(B) depicts the per capita size of TF of the thirty-six districts. The size is quite large for Lahore and Rahim Yar Khan. Similarly, the TF for Sialkot is also huge which can be partly attributed to a comparatively large number of schemes (which are approximately more than 35).

Figure 5.9(C) ranks the districts by the total number of schemes in the ADP. It can be seen that areas such as Faisalabad, Lahore, and Vehari have the highest number of schemes. It needs to be noted here that the figure represents only those schemes that are specific to a particular district⁷. With about 36 new schemes in Lahore the allocations are understandably higher and so is the TF. However, the high number of schemes in Vehari is less obvious with 43 of the 47 schemes being new but as indicated in Figure 5.9(A) the allocations per capita is relatively low for the district. A possible explanation for this is the comparatively smaller cost of these schemes with majority revolving around the upgradation of schools. While Hafizabad is one of the smaller districts in Punjab, only three schemes are planned for in ADP 2016-17. Albeit the construction of a government degree college (for women) is currently on-going, there is little diversity in the development projects outlined.

Additionally, the number of schemes is relatively high in the southern areas of Punjab. That is, areas such as Multan and Rahim Yar Khan have quite a few independent schemes. While districts like Bahawalpur and Bahawalnagar have received lower projects in comparison. One way to understand this is that both Multan and Rahim Yar Khan are relatively populous. However, in comparison to Punjab's literacy rate of 62 percent, the literacy rates for these areas are

⁷ That is, only those schemes that are based on a single district have been included in analysis. Schemes spread across multiple districts of Punjab have not been included. This has been done

so that the government's commitment to lesser developed areas, by introducing area-specific schemes, can be analyzed.

Figure 5.9(A): District wise Allocation Distribution (Rs Million)

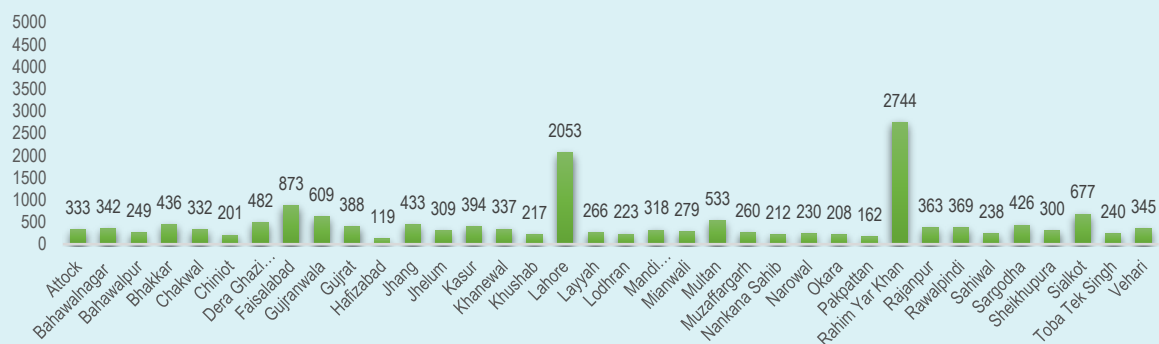


Figure 5.9(B): District wise Size of Throwforward

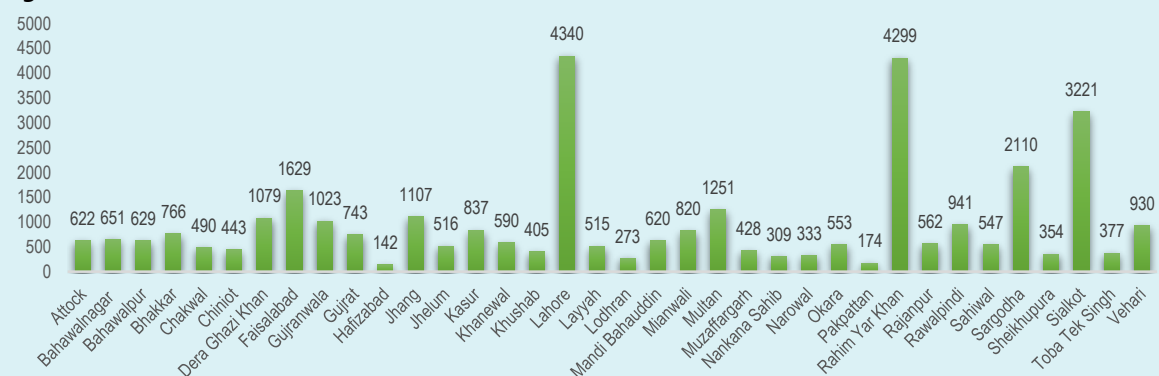
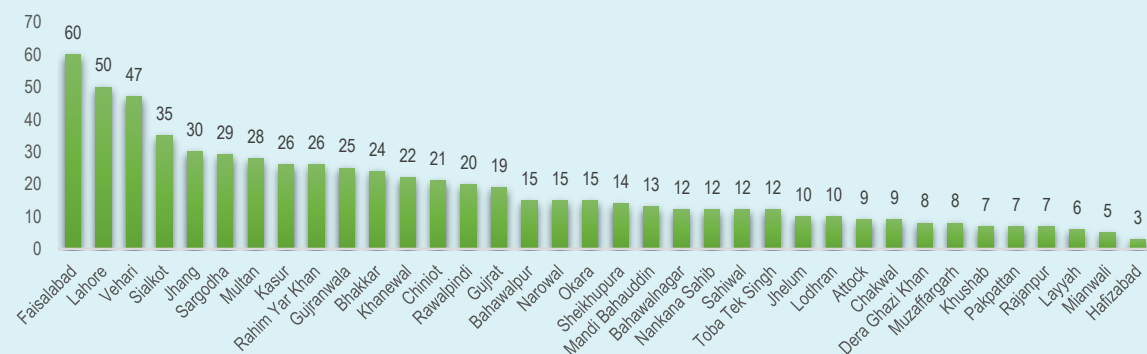


Figure 5.9(C): District wise Number of Schemes



Source: Finance Department, Government of the Punjab.

lower at 48 percent in Bahawalpur, 49 percent in Bahawalnagar, a concerning 39 percent in Rahim Yar Khan, and 58 percent in Multan⁸. Given this, it is extremely surprising that no schemes related to literacy and non-formal education have been included in the ADP 2016-17. So, while a huge number of schemes in the district is a positive sign, the type of projects being undertaken are also of immense value. Consequently, more efforts are required by the government.

Punjab’s Sectoral Strategies and Appropriation of Development Funds

A key term in the Punjab Growth Strategy’s objectives is to make Punjab a *knowledge-based* province. While programs under the Punjab Education Foundation (PEF) scheme, and other schemes such as E-Learn, Taleem Sab Kay Liay, and establishing development units are focused on the type and quality of learning being offered. Nonetheless, most of the schemes in the

⁸ Source: Punjab Development Statistics (2016), based on MICS (2014)

ADP revolve around the construction, up-gradation of the educational institutes, and the provision of important missing facilities in the institutes. With quality education being one of the seventeen Sustainable Development Goals (UN), the number of schemes related to curriculum development, teaching methods development, teacher's trainings etc. are comparatively quite few. So, while establishing new school buildings to farther areas is helping in achieving the increased enrolment target of the government, improving quality of education is also an objective against which there is not substantial representation in the ADP.

For the year 2015, Pakistan adopted sixteen targets in order to achieve the eight Millennium Development Goals (MDGs) set by the UNDP. One of the goal being the attainment of universal primary education, indicators including the net enrolment rate ratio, completion/survival rate Grade 1 to 5, and literacy rate were used to achieve this goal. Unfortunate for the province, the target was missed with the literacy rate being 62 percent (2015-16)⁹ against the set 88 percent. Similarly, the net enrolment rate at the primary level was 59 percent which is much lower than the targeted 100 percent. Having been unable to fulfil the MDG with regards to the primary level education, clearly the schemes in the ADP are either being ineffective or delayed due to managerial issues [as indicated in Figure 5.8(A) wherein about 34 percent of the on-going schemes are 1 to 25 percent complete].

Budget Phasing

The formulation of the ADP is a regular process upon which major development of the province is dependent. With various types of schemes being introduced every year and many schemes continuing over the time, managing the financial aspect of these schemes is crucial to the success of the development programs. While the size of

ADP to the sector is gradually increasing, so are the number of schemes which makes allocating adequate funds a highly strategic decision. For this purpose, the plan for every year involves setting a budgeted allocation to each scheme and also projecting allocations, otherwise termed as Medium-Term Development Framework (MTDF), to be made in the subsequent years (usually for the next two fiscal years).

Table 5.2 summarizes the planning pattern of the government since the year 2012. For the year 2012-13, the aggregate development budget allocated to schemes was Rs. 23.3 billion while it was planned that for the next two years, Rs. 25.3 billion and Rs. 28.04 billion respectively will be allocated to the sector. However, as clearly visible, the budget actually allocated was Rs. 24.9 billion in 2013-14, and Rs. 45.3 billion in 2014-15.

Moreover, the projected allocation at the time of ADP 2013-14 for 2014-15 was Rs. 31.5 billion. A careful analysis of Table 5.2 indicates that meeting the projected targets has increasingly become difficult for the government which implies that there are potential financial management issues which need to be addressed in order to improve the budgeting process. With unrealistic budgets being set for future time period, clearly the funds are not being appropriated in an efficient manner.

Endeavours to make Punjab a more Educated Province

Over the years, the ADP for the education sector is on a rise which signifies government's realization of the importance of education. With economic growth considerably dependent upon this sector, many initiatives have been taken. The most important being the Chief Minister's Reforms Roadmap which aims to achieve 100 percent enrolment and retention of students

Table 5.2	Fiscal Year				
	2012-13	2013-14	2014-15	2015-16	2016-17
ADP 2012-13	23,265	25,535	28,044		
ADP 2013-14		24,915	31,513	34,664	
ADP 2014-15			45,350	63,500	85,500
ADP 2015-16				50,564	67,250
ADP 2016-17					67,823

⁹ Source: The Economic Survey of Pakistan 2016-17.

aged 5 to 16 years, incentivize teachers, ensure quality of education, and reform school buildings. With the new roadmap targeting 2018 as the year of achieving the goals, projects like allocating more than Rs. 5 billion in ADP 2016-17 for provision of missing facilities in primary schools across Punjab, making education feasible by offering Internal Merit Scholarships, and improving accessibility by constructing more primary schools.

Apart from this, a major role has been played by the Punjab Education Foundation (PEF) by introducing diverse programs such as Foundation Assisted Schools Program (FAS), the Education Voucher Scheme (EVS), New School Program (NSP), and the acclaimed Public-School Support Program (PSSP). Having been allocated Rs. 12 billion in the ADP 2016-17, PEF intends to uplift the education sector of the province. This can be deduced from the fact that under FAS, enrolment increased by 40 percent and student achievement improved by the equivalent of one to two additional years of schooling (Habib, 2013). Similarly, as of last year, the EVS program established partnerships with 1,371 schools and was able to distribute more than three lakhs vouchers.

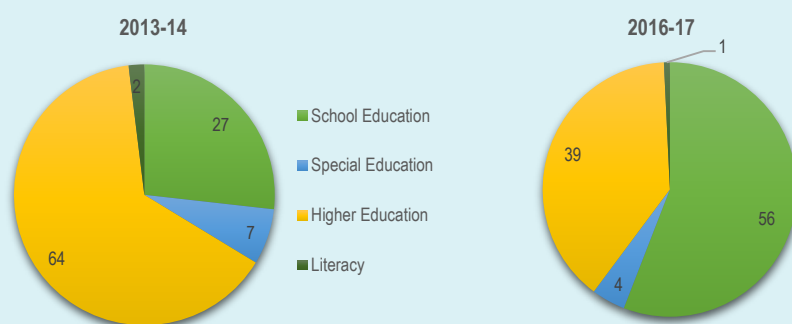
Following the footsteps of the School Education sector, the Special Education department has also devised schemes to enhance the enrolment of students with special needs (i.e. differently abled students). More importantly, new institutes are also being set up in different areas of Punjab for easier access. With the plan of setting up a degree college of special education in Multan, skilled workforce will be created, eventually contributing to the province's economy. Since inclusive education is part of the SDGs, programs such as the Punjab Inclusive Education Project and provision of special facilities (in the form of customized textbooks, special playgrounds etc.) in the ADP will help in achieving the goal. However, these achievements (as already stressed above) are contingent upon receiving adequate allocations for the projects to progress smoothly.

As stated in the ADP 2016-17, approximately 3.1 million children are out of school. To ensure that these children receive basic education, various initiatives are being undertaken by the Literacy & Non-Formal Basic Education Department. Amongst which an integral scheme is that

of establishing centers to devise appropriate curriculum and assessment materials in collaboration with the Punjab Curriculum & Textbook Board and the Punjab Information Technology Board (PITB).

Maintaining standards of higher education in the province fall under the purview of the Higher Education Department (HED) and the Punjab Higher Education Commission (PHEC). The development initiatives have been primarily geared towards provision of infrastructure and establishing new (sub) campuses in different parts of Punjab. Additionally, through the Punjab Educational Endowment Fund (PEEF), scholarships are being awarded to both needy and capable students in a bid to make higher education affordable. In ADP 2016-17, a special allocation of Rs. 4 billion has been made to PEEF. While construction of universities and colleges lead to better accessibility, there is lesser focus on enhancing the capacity of the faculty (i.e. no major schemes on the supply side) and bringing in curriculum reforms.

To give a better sense of the priorities of the government, Figure 5.10 compares the percentage distribution of the number of schemes in different sub sectors of the education sector. In 2013, 64 percent of schemes revolved around higher education. In contrast, only 2 percent of the schemes are from the literacy sector. School education sector was better off with 27 percent of the schemes being featured in ADP 2013-14. A look at the recent situation suggests a shift in government's attention from higher education to the school education sector with 56 percent of the schemes belonging to this sector in contrast to the 39 percent of schemes. However, the percentage of schemes under special education and literacy have actually reduced to a mere 4 percent and 1 percent respectively. So, while the number of schemes under special education rose marginally (from 32 in 2013 to 40 in 2016), the total number of schemes fell by 2. Nonetheless, total number of schemes has substantially increased from 289 to 709, but most of the schemes are cantered at school and higher education level. It is encouraging though that the proportion of schemes under school education is much higher in 2016 as resolving issues at the grass root level will benefit in the long run.

Figure 5.10: Percentage Distribution of Schemes in Different Education Sectors

Source: Finance Department, Government of the Punjab.

Gauging the Performance of the Sector

The increasing size of the development budget is leading to a diverse range of projects targeted towards upgrading school buildings to improving the overall of environment of schools by providing basic facilities such as electricity, clean drinking water, and toilets.

Table 5.3 provides a summary of the key indicators of school inputs based on the Annual School Census 2016 data (Punjab Education Sector Reform Program, Department of School Education, Government of Punjab). Compared to non-public schools, there are far more primary schools in the public sector. This is encouraging and indicates that accessibility to schools is being made easier and also highlights the government's commitment to meeting the objectives of compulsory education. However, as we move up the levels of school, the number of public middle and high schools are considerably lower than the private/non-SED schools. This is likely to become an issue in the future since growing enrolment and number of schools at lower school levels implies that more and more students will have to be accommodated and hence it is important the number of schools at middle and higher-level increase accordingly. A look at key ratios will help in assessing the present situation of education in the province. Compared to private institutions, the student-teacher ratio at primary level is considerably high, especially at primary level. Hence indicating that there is a

need to induct more teachers and to also retain the existing faculty (via incentivizing, ensuring smooth career progression, etc.). The ADP has also focused a lot on providing missing facilities, nonetheless about 7 percent of the schools are still deprived of this basic facility. While the provision of drinking water and toilet facility is present in almost all of the schools (as per the figures in the table), it needs to be noted that while toilets are present in schools, of the total number of toilets in each school, about 97 percent are in usable condition. Access to drinking water has an almost hundred percent coverage, but a closer look at the water situation in the province indicates that the percentage of unsafe water sources is 65 percent (2016)¹⁰. With majority of the public schools having access to water sources such as water pump (56 percent) and hand pump (30 percent), it is difficult to determine the quality of the drinking water available in these schools. Thus, one needs to be careful when interpreting these figures and not take them at face-value.

Over the last few years, educational institutes have become targets of extremism and terrorism. Given this, safety measures employed by schools has received considerable attention. School security is an important factor and one wherein due investment (in the form of deploying able guards, barbed wires on boundary wall etc.) is required. In Table 5.3, about 56 percent of the schools are satisfied with the security measures adopted by their respective schools. Due to lack of information, it is difficult to identify the nature/level of security

¹⁰ Source: Water Quality Status of Major Cities of Pakistan 2015-16, Pakistan Council of Research in Water Resources (PCRWR), Ministry of Science and Technology (2016)

Table 5.3: Key Indicators of School Inputs 2016

	Public	Private/Non-SED*
Number of Schools	52,231	60,502
Primary	36,059	22,525
Middle	8,358	24,535
High	6,402	12,296
Higher Secondary	680	1,146
Number of Teachers	343,458	567,003
Primary	113,504	86,329
Middle	80,724	243,194
High	125,216	211,753
Higher Secondary	22,832	25,727
Enrolment	11,294,533	10,726,114
Primary	4,306,175	1,686,344
Middle	2,321,794	4,603,793
High	3,898,947	3,955,509
Higher Secondary	718,819	480,468
Classrooms	269,704	517,474
Primary	111,803	85,997
Middle	61,552	225,194
High	81,404	185,042
Higher Secondary	13,909	21,241
Key Ratios on Quality of Schooling		
Student-Teacher Ratio		
Primary	38	20
Middle	29	19
High	31	19
Higher Secondary	31	19
Student-Classroom Ratio		
Primary	39	20
Middle	38	20
High	48	21
Higher Secondary	52	23
Provision of Facilities at Schools (% of schools)		
Electricity	93.3	96.6
Access to drinking water	99.5	99.2
Toilet facility	99.3	96.3
Boundary wall	97.6	96.4
Security	55.7	

Source: Annual School Census (2016), Punjab Education Sector Reform Programme (PESRP).

*Includes those schools that are not under the purview of the School Education Department (SED) Punjab.

Table 5.4: Public Schools Building Type

Type of Construction	Percentage
Primary	
% Pakka	91
Middle	
% Pakka	93
High	
% Pakka	91
Higher Secondary	
% Pakka	91

Source: Annual School Census (2016), Punjab Education Sector Reform Programme (PESRP)

measure present in these school. Nevertheless, more efforts are required to provide adequate security to schools.

Table 5.4 states the percentage of public schools that are completely *pakka*, i.e. the construction of the school building is “solid” and “permanent”. Most of the

buildings at each schooling level are *pakka* with middle schools having a slightly higher proportion (at 93 percent). However, it is concerning that still nine percent of the high and higher secondary schools are not completely *pakka*. At higher stages of schooling, more facilities such as science laboratory, computer lab, library etc. are necessary and hence it is important that the buildings are made of solid material.

Policies, Reforms and Achievements in the Education Sector

Since 2008, the Government of Punjab has introduced many reform packages and has taken several initiatives to improve the education system of Punjab. The central focus of these reforms and initiatives is that the people of Punjab have easy and affordable access to at least basic education. These reforms and initiatives of the Punjab Government are given in Boxes 5.1 and 5.2. The Reform package is very comprehensive and covers many aspects of all stages of schooling along with focus on the increasing quality of education and governance of the system as well.

The purpose of Reforms Roadmap and Initiatives is to accelerate the pace of improvement in education sector indicators, to bring all out-of-school children in the school, retain them to complete at least matriculation and improve their learning outcomes. It also focuses on improving the governance within the education department and in schools; completing the schools by accelerating the provision of school facilities; enhancing financing for public schools; improving the quality of public school teachers; and close monitoring of the school system and academic progress made by student through centralized examination for 5th and 8th grade student through Punjab Examination Commission (PEC). Since its inception, the *Roadmap* has made some remarkable progress in the education landscape of the province.

The education sector at the departmental level has undertaken a number of initiatives that will further increase the quality and quantity of education attainment in Punjab. The list of these initiatives is given in Box 5.2. These initiatives like the *Roadmap* contributing to the improvement of education system of Punjab and increasing the quantity.

Besides the reforms and initiatives, the Government of Punjab has to follow and

obey the international commitments give in the form of Sustainable Development Goals (SDGs). Specifically, the goals related to the education sector are given as Goal 4 on the Quality Education of the SDGs. The goals are given in Box 5.3.

Conclusion and Policy Recommendations

The benefits of education include, but are not limited to, improving people's capacity to diversify assets and activities, access information on health and sanitation, and enhance human agency. Given this, increasing allocations to the education sector indicates government's acknowledgement of the significance of the sector. With the development budget having increased by more than double since 2013, the sector is being provided with resources to carry out activities to strengthen the education system. Notwithstanding, there is a need to ensure that the available resources are being distributed in a socially, economically and financially efficient manner.

Given the challenges still facing the Punjab government, a way forward is proposed:

- **Focus on demand-side interventions:** there are still very few schemes targeted at increasing the demand of education. Out of school children and high dropout rates are partly due to parents' and the children's reluctance to pursue education. Hence it is extremely important that programs specific to awareness and marketing campaigns are introduced in the ADP. Consequently, ensuring compliance with the ADP.
- **Introduce curriculum development schemes:** majority of the development budget is being spent on increasing the number of educational institutions (setting up new schools, colleges and universities) and improving the physical state of the existing buildings (i.e. construction of new classrooms, provision of missing facilities etc.). More attention needs to be diverted towards enhancing the quality of education. This can be done

Box 5.1: Chief Minister's School Reforms Road Map

The Chief Minister's School Reforms Road Map is cover several aspects of the education system of Punjab. Its main agenda items of each component of the Reform Map are listed below.

Focus on teachers has the following agendas:

- 109,000 Contract Teachers have been regularized and pay scales of teachers have been up-graded;
- 100% increase in Mobility Allowance of teachers and Charge Allowance of Head teachers;
- incentives of Rs. 1 Billion for best performing teachers; and
- 1000 Cash Prize of Rs. 50,000/- of primary teachers enhanced from matriculation to B.A/B.Sc.

Focus on students include the following main points:

- free text books for all students up to Matric;
- stipend for girls' students in 15 districts;
- special cash prizes and foreign visits for position holders;
- scholarships for brilliant students through PEEF;
- progress towards a Uniform Education System;
- compulsory External Examination of Grade 5 and 8 on best international practices and internal merit scholarships;
- monthly class and term tests through DTEs; and
- exemption from examination fee; and elimination of Unfair Means in Examinations.

Focus on schools in include the following agendas:

- provision of 4,286 computer labs in High Schools and up-gradation of 2500 schools;
- Rs. 4 Billion every year for missing facilities in schools;
- conversion of Government Schools into English Medium;
- establishment of Daanish Schools for poor but intelligent students in Southern Punjab;
- establishment of Five Cadet College in Punjab, each in Okara, Pasrur, Chakwal, Esa Khel and Multan;
- agreement with Microsoft for I.T. training; and
- provision of libraries to Middle and High Schools.

Ensuring of 100% Enrolment has the following agendas:

- survey of all admissible students to ensure 100% enrolment rate; and
- free and compulsory education up to 16 years a fundamental and enforceable right of every child.

Ensuring of 100% Retention include the following points:

- monthly monitoring of enrolment attendance gap of each school and district by DMO's;
- special household survey will be done with smart phones;
- DMO's to mainly will focus on their original assignment i.e. monitoring and ensuring education targets; and
- there will be zero tolerance for dropouts.

Ranking of Districts on Targets under this goal the districts and officers will be ranked on 13 indicators:

- in every quarter two months' additional salary will be given to 5 best performing DCOs and EDOs (Education) as reward;
- all DCOs to ensure District Review Committee Meeting every month; and
- periodic review meetings will be chaired by the Punjab Chief Secretary to oversee the ranking and Punjab Chief Minister will review the progress after three months.

Ensuring Quality Education includes the following agendas:

- lesson plans will be given to every school and teacher Guides will be provided;
- monthly and term tests of students will be arranged on solo taxonomy through District Teacher Educators;
- compulsory PEC Examination of all Govt. and private students to promote healthy competition;
- teaching of science, Mathematics and computer in English;
- training of Teachers through international Experts; and
- provision of Science Labs.

Governance under this goal a committee is formed consisting of all Education Managers Executive District Officers, District Education Officers and Deputy District Education Officers linking with achievement of targets and performance. The committee will ensure all recruitments, transfers of Teachers and Education Managers are purely on merit through PPSC and Recruitment Committees with ZERO POLITICAL QUOTA. Teaching and non-teaching staff will be rationalized every year according to enrolment and retention of students on actual school need basis.

via devising a new curriculum, introducing updated textbooks and attrac-

tively illustrated school books especially for younger children etc.

- **Invest in Teachers:** another way to improve the quality of education is by hiring qualified teachers and investing in their personal and professional training. Teachers are an integral part of the education sector and have a strong influence on the students, especially at primary school level. Thus, these teachers need to be properly trained. There are schemes for training of teachers for special education, but it is equally important that other teachers are also given the relevant training.
- **Direct attention and resources to non-formal education:** out of school children (OOSC) is a huge challenge for the government, so is increasing the number of females attaining education. One possible way to educate/eradicate illiteracy is through non-formal schooling, hence also allowing to achieve the SDG of inclusiveness.
- **Budget Planning:** at the time of ADP, the allocations for the following two years are also budgeted. However, as highlighted earlier, the budgeted allocations are rarely followed through. Since these figures are based on a certain degree of planning, having erratic allocations diminishes the significance of these budgeted figures. Therefore, it is important to plan and follow through.
- **Optimize the number of schemes:** with the total number of schemes in the ADP gradually increasing, the distribution of limited funds is becoming challenging. Thus, there is a need to ensure that the proportion of new schemes does not overpower the size of on-going schemes. And that given the inclusion of new schemes, the on-going projects still receive adequate allocation so that these projects are completed on time. As otherwise, there exists a risk of delay in projects, resulting in costs overrun.
- **Maintain fiscal discipline:** majority of total development budget is continuously being allocated to new schemes. If this trend persists, the timely completion of active projects is becoming difficult. Thus, there is a need to optimize the allocative efficiency rule of allocating at least 60 percent of the budget to on-going schemes.
- **Minimize the number of unapproved schemes:** with majority of new schemes in ADP 2016-17 being unapproved, the development budget is over-estimated. With the approval still in process, the allocations to these schemes could have instead been attributed to other projects and hasten them to completion.

Box 5.2: Major Initiatives of Punjab Government in the Education Sector

School Education Department

- School Reform Road Map
- Punjab IT Labs
- District Ranking
- Real-time Monitoring Information (Public)

Higher Education Department initiatives target multiple subsectors of higher education and include the following

- Chief Minister Faculty Development Program
- Laptop Distribution (2014)
- Online College Admission System
- Establishment of New Examination Centres
- Punjab Education Endowment Fund
- Provision of Missing Facilities to Colleges
- Initiatives for Faculty Improvement

Special Education Department has taken the following initiatives for the welfare of special children:

- Provision of laptops to the special students from first year to 4th year of two-degree colleges
- Provision of 1902 solar energy panels to students with disabilities
- Provision of 508 buses to special education institutions for free pick & drop facility
- Provision of 45 cochlear implant for hearing impaired students
- Provision of 37 computer labs
- Provision of 34 ear mold fabrication units at districts level
- Provision of 35 institutions for slow learners at district level
- Provision of 8 low vision assessment centres
- Constitution of school management councils in special education institutions
- Establishment of special education parks at all divisional headquarters
- Introduction of inclusive education
- Outreach Program for hearing & visual assessment
- Allocation of the fund for renovation/face lifting of Directorate
- Up-gradation of 99 special education centres from primary to middle level
- Introduction of M.Ed. hearing impaired class in Government Training College for the Teachers

Sports and Youth Affairs Department

- 25,000 talented students studying on scholarships funded by PEEF
- PPSC given absolute autonomy to ensure merit and equal opportunities
- Daanish Schools System providing quality education to poor talented students

Box 5.3: Goal 4 on Quality Education under the Sustainable Development Goals

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The targets of Goal 4 are:

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development:

4.a build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b by 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4.c by 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

6

Health Sector

Introduction

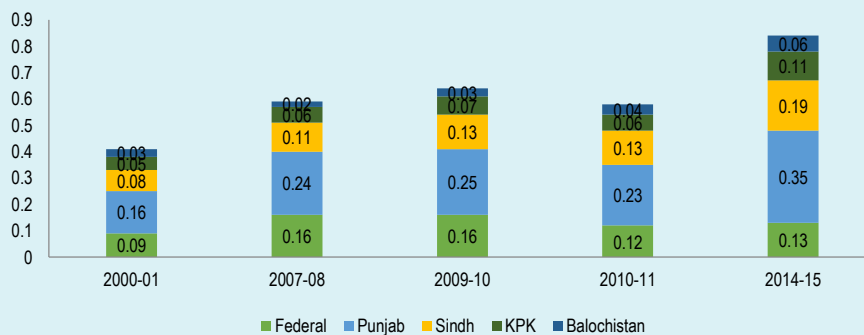
Good public health services can assist sick people, vulnerable children, and poor families, as well as provide the infrastructure, organizational capacity and integrative approaches needed to steer forward the economy. Improvement in health facilities not only transforms lives of people in a better manner but results in healthy workforce and human capital contributing towards development of a country. Investment in health sector is also crucial for enhancing human capabilities. As healthier people can work more productively, it also saves work days lost during illness. More productivity means

more contribution into economy. Therefore, one significant impact of improved funding for health facilities is on GDP.

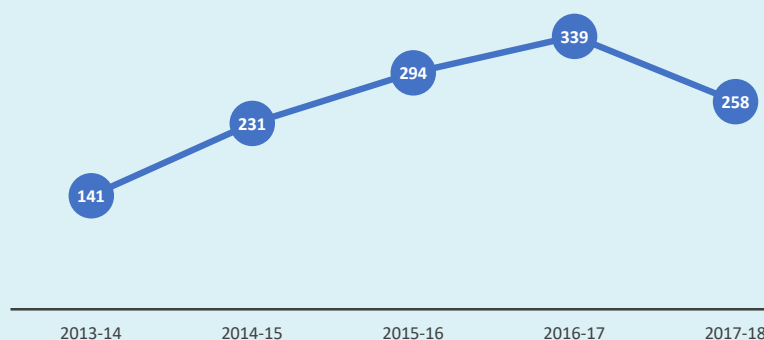
Health Sector of Punjab

After the 18th Amendment, the Government of Punjab has introduced a number of health initiatives to improve not only health services but to also make health care easily accessible. These measures are being taken at the primary, secondary and tertiary level. In order to improve service delivery, Government of Punjab bifurcated Health Department into two separate departments; (i)

Figure 6.1: Trends in Federal and Provincial Governments' Expenditure on Health Sector (% of GDP)



Source: SPDC (2016).

Figure 6.2: Number of Schemes

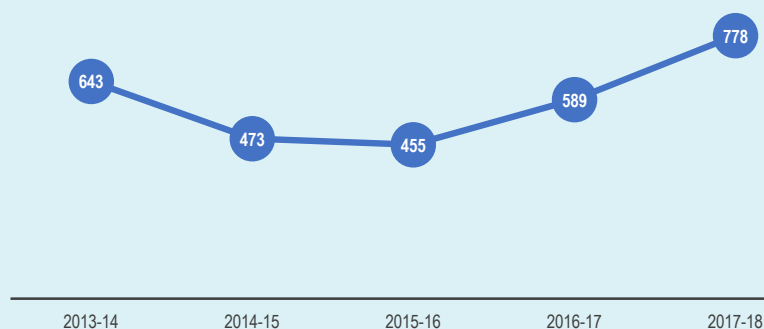
Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Specialized Health Care and Medical Education Department and (ii) Primary and Secondary Healthcare Department in FY 2016-17. As far as the functional classification of health services is concerned, it includes allocation for hospitals, healthcare Institutes, laboratories and other expenditure related to health administration, including the general administration.

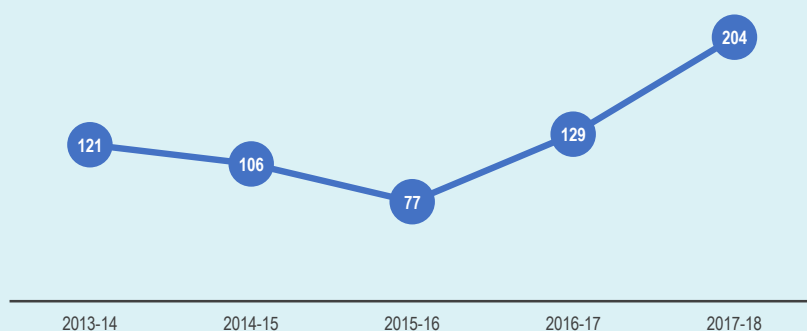
The overall allocation for Health Sector (in the current budget at provincial level) has increased by 58.4% from Rs. 70,060 million during FY 2016-17 to Rs. 111,026 million for 2017-18. The major allocations related to Health Sector are for purchase of medicine, repair of machinery and equipment. In view of the importance of medical supplies, an effort has been made to provide maximum possible resources for purchase of medicines and other supplies for both the departments. Resultantly, the allocation for free medicines has been enhanced from Rs. 14,742 million in FY 2016-17 to Rs. 20,413 million in FY 2017-18.

Figure 6.1 plots the health expenditure as percentage of Gross Domestic Product (GDP). The health expenditures are increasing continuously since 2000-01 but there is a visible upsurge since 2010-11. Punjab has increased its spending on health care from 0.16 percent to 0.63 percent of the GDP. On average, Punjab spends more than the combined health budget of other provinces. The increased expenditure has allowed the sector to significantly improve the infrastructure of the sector and provide better health care facilities.

There are several reasons for the slow improvement in the health sector. Especially in urban areas, the utilization rate of public health facilities is continuously declining due to difficult access and poor quality of public health care facilities for many decades. Consequently, the private sector has succeeded to fill the gaps to address the weaknesses of public services delivery. Nonetheless, in the absence of any regulatory mechanism, policy or modus operandi,

Figure 6.3: Average Cost per Scheme (Rs Million)

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Figure 6.4: Average Allocation per Scheme (Rs Million)

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

the private sector in health care systems has assumed a fairly exploitative role.

Salient Features of the ADP

- Revamping of few existing hospitals and completion of on-going projects.
- Strengthening / Improvement of Emergencies of Tertiary Care Hospitals in Punjab.
- Improving functionality of equipment and availability of quality medicines.
- Setting up of Health Management Information System.
- Establishment of Hepatitis Clinics & GI Departments in Tertiary Hospitals in the Punjab.
- Improving Medical Education through Establishment of Medical Education Directorate in Lahore.
- Provision of Missing Facilities in Tertiary Care Hospitals/Medical Institutions.
- Effective implementation of Health Insurance Program to reduce catastrophic health expenditures in Punjab.
- Pakistan Kidney and Liver Institute & Research Center (PKLI), Lahore.

The following sections are going to look at the health initiatives and programs introduced by the Government of Punjab. The trends in the size of health sector in the ADP, number of new and on-going projects along with their cost estimates, cost escalations, extent of completion and projected time of completion would be analysed. Then the analysis of sectoral ADP with the sectoral strategies and plans would be done in subsequent section to give specific policy recommendations for the sector.

Trends in Agriculture Sector ADPs

Number of Schemes and Average Allocation Per Scheme

The Figure 6.2 shows the trend of health schemes over the years. From this figure it can be observed that the number of health schemes from years 2013-14 till 2016-17 increased from 141 to 339, which shows an increase of 140 percent. But from 2016-17 to 2017-18 the number of health schemes decreased to 258. Which may be due to the reason that average allocation per scheme is now larger than previous, it means that now the schemes are larger in volume and less in number.

From 2013 to 2016 the increasing number of health schemes corresponded to decreasing trend in the average allocation per scheme (Figure 6.3). Which indicates that as the number of health schemes increased the average allocation for every scheme was reduced. But after 2015-16 it can be observed that the average allocation per scheme has steadily increased. In 2015-16 when there was a total of 294 health schemes the average allocation per scheme was Rs.77 million.

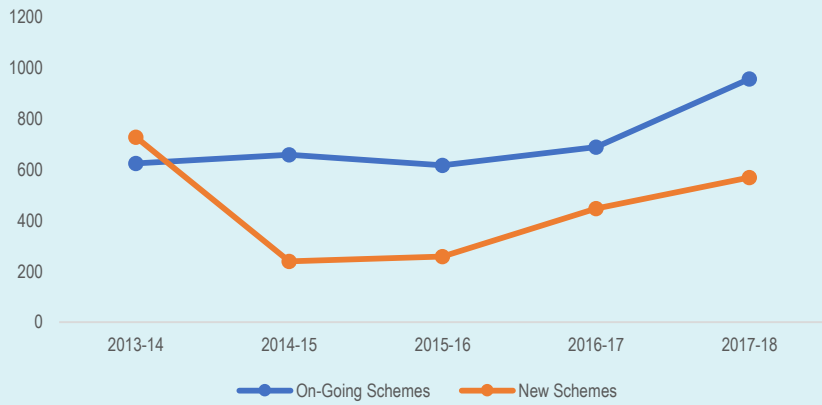
In 2016-17 the number of health schemes reached the maximum in recent years and at the same time it can be observed that instead of decreasing the average allocation per scheme there was an increase in it because for 339 health schemes the average allocation was increased to 129 million.

Average Cost per Scheme

The Figure 6.4 show the trends of average cost per health schemes of the ADP over the years. Initially the average cost per scheme shows a decreasing trend, with min-

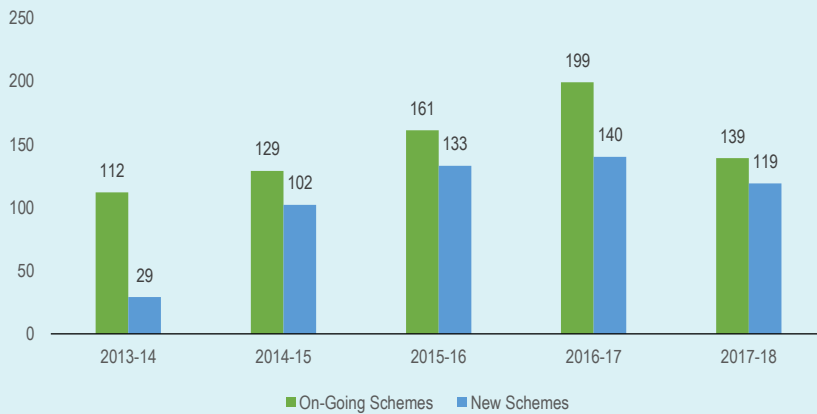
increasing trend in it as in 2016-17 the average cost per scheme was at Rs.589 million. This year also recorded the highest number of health schemes of ADP. From year 2016

Figure 6.5: Average Cost Trends of New and On-going Schemes



Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Figure 6.6: Number of On-going and New Scheme

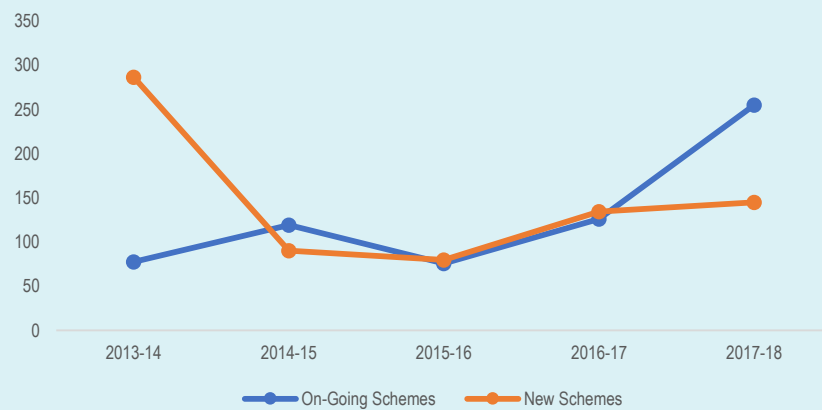


Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

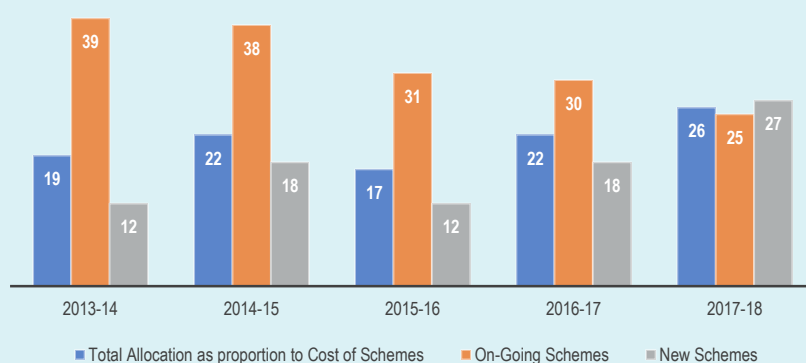
imum average cost per scheme in Rs.455 million. From the year 2015-16 there is an

onwards, the number of health schemes

Figure 6.7: Average Allocation of On-going and New Schemes



Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Figure 6.8: Allocation as Proportion to Cost of the Schemes

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

have decreased and the average cost per scheme rose to Rs.778 million in 2017-18. This means that a fewer large scale or higher cost health schemes were introduced in this year.

Average Cost Trends and Number of New and On-going Schemes

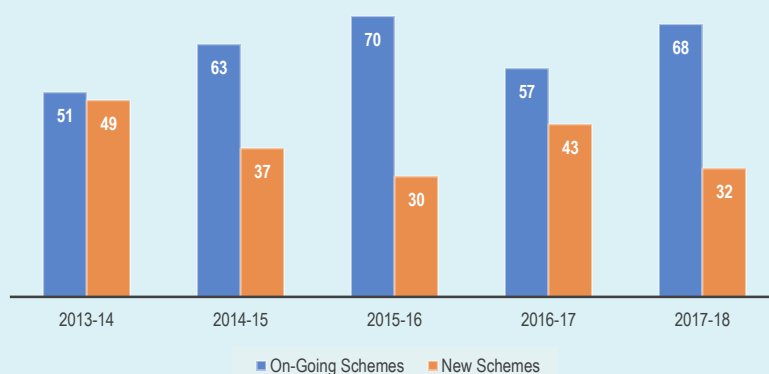
The average cost of the new schemes (figure 6.4) in 2014-15 was Rs.239.6 million, during this time there were 102 new health schemes (figure 6.5). After the initial fall in the average cost of the new schemes from Rs.727.7 million in 2013-14 to Rs.239.6 million in 2014-15, their average cost has continued to steadily increase, this is due to the reason that the number of new health schemes have also increased over the years.

was Rs.617 million. The number of on-going schemes rose to 199 in 2016-17 along with their average cost, Rs.688 million.

Figure 6.6 shows the number of on-going and new health schemes over the years. Over the years the number of new schemes has been increasing and their highest number reached 140 in 2016-17 while there were 199 ongoing schemes.

Average Allocation of On-going and New Schemes

Figure 6.7 shows the average allocations for the on-going and new schemes over the years. In 2014-15 the average allocation for the ongoing health schemes was Rs.119 million whereas from the figure 6.4 it can be seen that during that time the average cost

Figure 6.9: Allocative Efficiency of the Sectoral ADP

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

At the same time the average cost (Figure 6.5) of the on-going schemes have been also increasing along with their numbers (6.6). In 2015-16 there were 161 on-going health schemes and their average cost per scheme

per scheme incurred was Rs.658 million. For the year 2015-16 the average allocation for both the on-going and new health schemes decreased because during this year

the number of health schemes both on-going and new were increased more than the previous years. There were a total 294 health schemes as compared to 231 the previous year. For the succeeding years there has been an increase in both the number of health schemes and their average allocation Rs.134 million for the new schemes and Rs.125 million the on-going schemes.

Allocation as Proportion to Cost of the Schemes

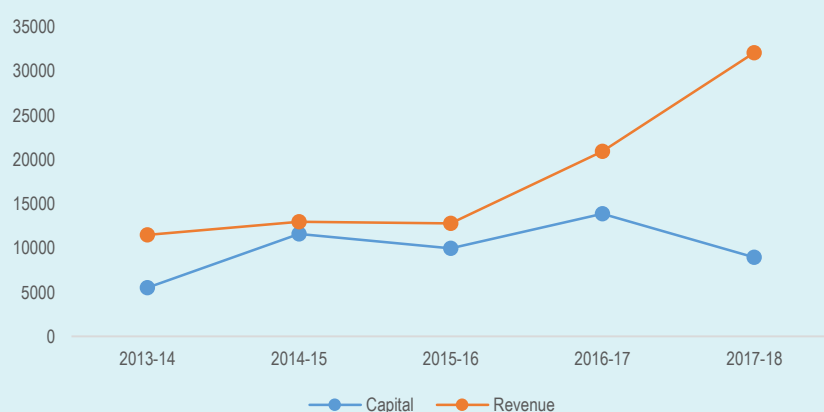
The Figure 6.8 shows the percentage of allocation done as compared to the cost of the schemes. The allocation as proportion to the cost of the scheme have always been higher for the on-going projects due to the

schemes as compared to the 30 percent of the new schemes.

Trends of Capital and Revenue Expenditures of ADP

The figure 6.9 shows the trends of capital and revenue expenditures of ADP over the years. From the graph lines it can be clearly seen that the revenue expenditures (red line) have always exceeded the capital expenditures (blue line). Revenue expenditures are the recurring expenses to meet the ongoing operational costs of the project as compared to the capital expenditures which are the costs for the acquisition of long term assets. Both these expenditures were almost equal for the year 2014-15. But then for the

Figure 6.10: Trends of Capital and Revenue Expenditures of ADP



Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

priority given by the government to complete them first. For the year 2014-15 out of the cost only 22 percent was allocated to both the on-going and new health schemes. But over the years the allocations for the new schemes have also been increased. As for 2017-18 the allocation as proportion of the cost for the on-going schemes was 25 percent while for the new schemes was 27 percent.

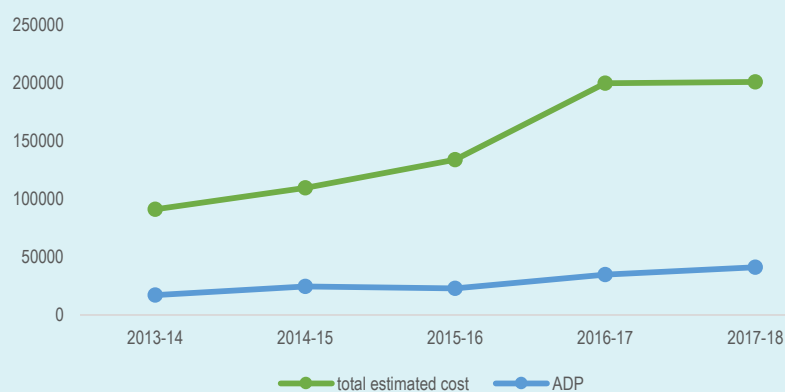
Allocative Efficiency of the Sectoral ADP

Figure 6.9 shows the allocative efficiency of the sectoral ADP. From the figure it can be observed that the in 2014-15, 63 percent of the allocations in the health sector were made to the on-going schemes while 37 percent to the new schemes. From the trends it can be ascertained that the government has always focused on completing the on-going projects as compared to the new schemes. In 2015-16 for 70 percent of the sectoral allocations were made for the on-going

next one year there was a declining trend in them but the revenue expenditure (Rs.12794 million) was still observed to be more than the capital expenditure of Rs.9981 million. From the year 2015-16 it can be observed that there was an increasing trend in both these expenditures with revenue expenditure at Rs.20930 million and capital expenditure at Rs.13882 million. From the year 2017 onwards both these expenditures show different trends as the revenue expenditure continues to increase the capital costs are declining, this could mean that lesser cost would be incurred for the acquisition of new capital assets.

Estimated Cost and Allocation of ADP

The Figure 6.11 shows the estimated cost and allocation of ADP. It can be observed that the estimated costs far exceed the allocation of ADP. For the year 2015-16 the

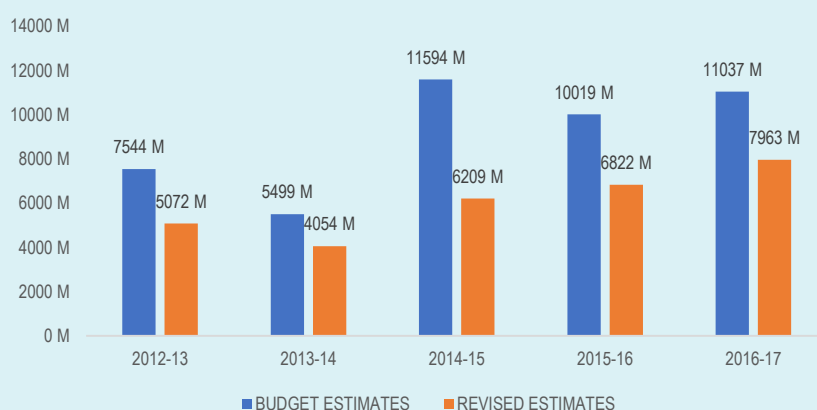
Figure 6.11: Estimated Cost and Allocation of ADP

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

health allocation for the ADP was Rs.22775 million whereas the estimated cost for this year was Rs.133641 million. The estimated

Budgeted and Revised Allocation

The size of the revised ADP in 2016-17 is Rs.7963 million as compared to Rs. 5072

Figure 6.12: Budgeted Vs Revised Allocation

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

cost for the next year 2016-17 increased to Rs.199502 million whereas the allocation was Rs. 34813 million.

million in 2012-13 (Figure 6.12) which shows that there has been 56.9 percent increase in the size of the revised ADP over

Table 6.1: Key Indicators of the ADP

	2013-14	2014-15	2015-16	2016-17	2017-18
Number of Schemes	141	231	294	339	258
On-Going Schemes	112	129	161	199	139
New Schemes	29	102	133	140	119
Percentage New Schemes	20.56	44.15	45.23	41.29	46.12
Cost of New Schemes as % of Total Cost	23.19	22.34	25.65	31.33	33.73
Average Cost per Scheme (Rs Million)	643.30	473.45	454.56	588.50	777.83
On-Going Schemes	623.94	658.35	617.11	688.42	956.76
New Schemes	727.78	239.61	257.78	446.46	568.82
Average Allocation per Scheme (Rs Million)	120.56	106.36	77.46	129.30	203.90
On-Going Schemes	77.60	119.08	75.63	125.80	254.68
New Schemes	286.47	90.27	79.67	134.28	144.58
Allocation as proportion to Cost of Schemes	18.68	22.46	17.04	21.97	26.21
On-Going Schemes	39.36	37.67	30.90	30.07	25.41
New Schemes	12.43	18.08	12.25	18.27	26.61
Allocative Efficiency of the Sectoral ADP*					
On-Going Schemes	51.13	62.52	70.12	57.11	68.33
New Schemes	48.87	37.48	29.88	42.89	31.67

Source: Planning and Development Department, Government of the Punjab.

* Percentage of the total sectoral allocation going to on-going schemes and new schemes.

the years. But the overall trend shows that the revised allocations have always been lesser as compared to the budgeted ones. In 2014-15 the budgeted estimates were Rs 11594 million but then the yearly revised allocations were reduced to Rs.6209 million for the health schemes. For the year 2015-16 the budgeted estimates were around Rs. 10019 million which saw a cut of 31.9 percent and the revised allocation were Rs. 6822 million.

Analysis of ADP 2016-17

Size Distribution of the On-going and New Schemes

Of the on-going health schemes 51 were the size of Rs.200 million (Figure 6.13) while there were 16 with a size of Rs.1500 million and 7 with a size of more than Rs.3000 million in 2016-17.

Of the new health schemes 36 were the size of Rs.100 million, another 36 were of Rs.200 million and 11 were more than the size of Rs.1000 million in 2016-17 (Figure 6.13).

Extent of Completion of The On-going Schemes in ADP 2016-17

From the Figure 6.14 it can be seen that majority of the on-going health scheme i.e. 87 are less than or fifty percent complete. As

compared to this there are 30 schemes which are 90 percent complete.

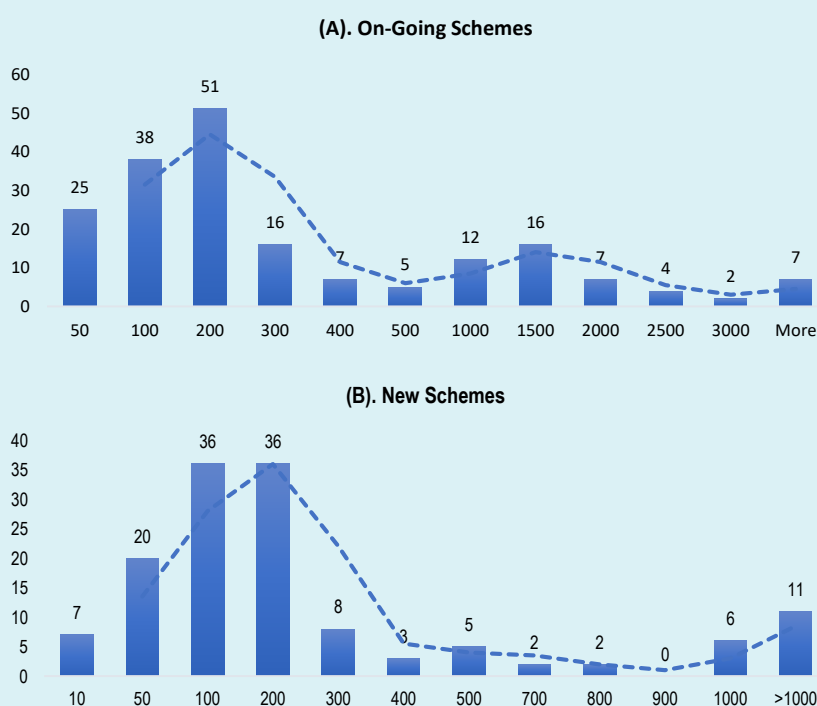
Projected Time of Completion for the On-going Schemes

The Figure 6.14 also shows the projected time³ of completion for the on-going schemes. It can be observed that 69 on-going health schemes are projected to be completed in a year, while 75 schemes would be completed in one half to two and half years. Besides this, 9 schemes are projected to take ten years.

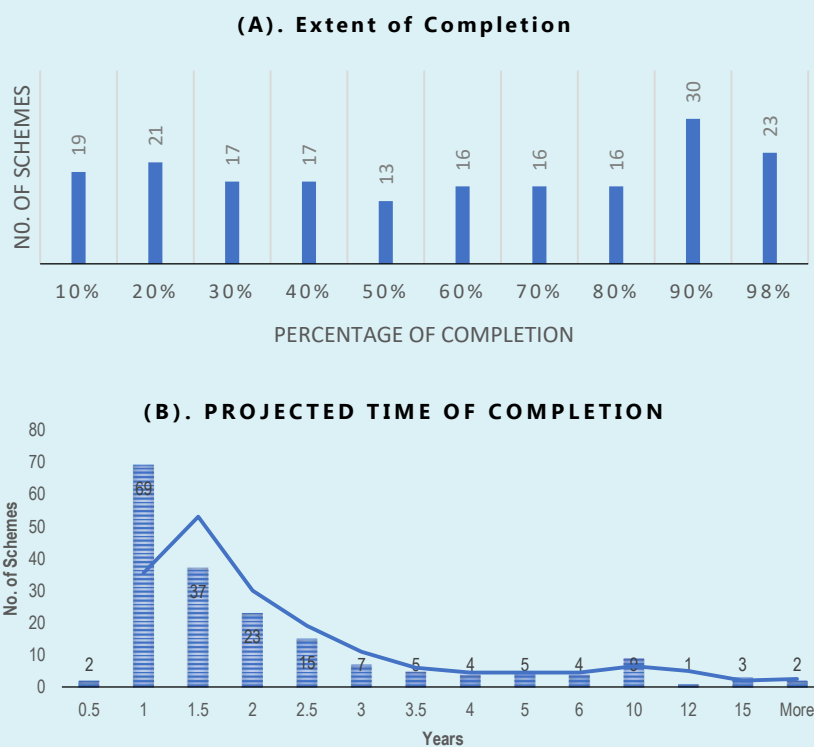
Extent of cost escalation and Time Over-run

The Appendix, Section A.2 highlights the various reasons for which the major health projects have been revised. It can be observed that most of the PC 1 of these projects have been revised several times. The PC 1 of the project Establishment of Institute of Urology and Transplantation Rawalpindi has been revised three time. These revisions not only lead to an escalation in the cost but delays in the implementation also. In the case of projects Provision of Missing Specialties for Up-gradation of DHQ Hospital Dera Ghazi Khan into Teaching Hospital Dera Ghazi Khan and Comprehensive

Figure 6.13: Size Distribution of Schemes 2016-17



Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Figure 6.14: Projected time of Completion and Extent of Completion of the On-going Schemes

Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Punjab TB Control Program their costs almost doubled in the revised estimates. These cost escalations and time over-runs can put strain on the limited economic resources and the delays in the implementation can also have both social and economic repercussions.

Major Development Projects in the Sectoral ADP

The Government of Punjab is focusing on achieving the target of universal health care and the Sustainable Development Goals (SDGs) therefore there are a number of major on-going and new health schemes which focus these aims. Punjab is the most populous province of the country and therefore has to face a higher burden of diseases. Among these the preventable diseases, which were previously believed to have had been effectively curtailed have re-emerged and therefore put a heavy toll on the already scarce health resources. As the SDGs also focus on ending epidemics like Tuberculosis, Hepatitis, Malaria, AIDS, water-borne diseases and various non-communicable and communicable diseases. The Government of Punjab is therefore focusing on controlling these diseases to help improve

the health indicators. For this purpose, a major project of “Prevention and Control of Hepatitis B and C in Punjab” has been initiated at a cost of Rs.9973 million. This project is to be implemented in all the districts of Punjab. Through this program treatment and diagnostic facilities would be provided to 340,000 patients in three years and it aims to eliminate Hepatitis according to WHO Hepatitis Elimination Strategy by 2030.

Similarly, another project “Comprehensive Punjab TB Control Program” is also aimed at eliminating TB from all the districts of Punjab. The cost of the project is Rs.3364.13 million. Pakistan ranks fifth for both Drug Sensitive (DS) and Drug Resistant (DR) -TB among 30 high-burden-countries globally. Therefore, this program aims to reduce the incidence of TB by 20% by 2020 and the number of deaths due to TB by 35% by 2020.

Besides these programs to eliminate the diseases the Government of Punjab has also introduced nutrition programs to improve the health of the down-trodden people. The project “Chief Minister’s Stunting

Reduction for 11 Southern Districts of Punjab” at a cost of 3.902 billion aims at improving the health outcomes among women, children and newborns by enriching coverage and provision of preventative and curative health and nutrition services to the poor and vulnerable (particularly the stunted children) in the rural and less developed parts of South Punjab.

How much Sectoral ADP is aligned with Sectoral Strategies and Plans?

This section sheds light on the fact that how much the health sector ADP is consistent with the strategies and plans of the health sector in order to improve the health facilities and life of the people in Punjab. There are two main documents that provide details about the plans of the Punjab government for health sector: Punjab Growth Strategy 2018 and Pakistan Vision 2025. These documents highlight the role of investments in health sector as a key to enhance human capabilities.

The Government of Punjab has undertaken many new policy initiatives and among them the initiatives related to the primary and secondary health care are more important. However, the infant mortality rate and maternal mortality rate still remains high in Punjab. Overall, the number of health facilities per million population has increased. Moreover, it continues lag behind in order to achieve the targets of sustainable development goals. The indicators in Table 6.2 shows the current facts about key health sector inputs.

The health facilities in Punjab are unevenly distributed. BHUs are supposed to provide the health facilities to large number of population and consider as the first stop of rural households seeking medical attention. Currently there are 2,570 BHUs spread across the province. But the number of BHUs is still insufficient to cater to the population of backward areas. Although lot of efforts has been made to improve the provision of health facilities

Box 6.1: Key Parameters of Punjab Growth Strategy related to Health

- ~ Health Sector stream to include health, population welfare, and water & sanitation sub-sectors
- ~ Efforts to achieve related SDG's Targets.
- ~ Critical governance and institutional measures outlined
- ~ Budgetary allocations in MTF to follow Strategy guidelines
- ~ Sector Plan activities to be geared towards achieving 8% growth target

Source: Punjab Growth Strategy 2018

Table 6.2: Key Indicators of Health Inputs

	2012	2013	2014	2015	CAGR%
Number of Health Institutions					
Hospitals	340	357	363	368	2.68
Dispensaries	1201	1304	1325	1325	3.33
Rural Health Centers	337	348	341	350	1.27
T.B Clinics	42	45	45	45	2.37
Basic Health Units	2606	2535	2547	2570	-0.47
Number of Beds					
Hospitals	39185	45319	45590	45956	5.47
Dispensaries	438	480	452	444	0.46
Rural Health Centers	6026	6212	6120	6284	1.41
T.B Clinics	82	86	86	46	-17.53
Basic Health Units	4936	4940	4666	4833	-0.70
Health Facilities per million Population					
Doctors	543	567	593	620	4.52
Nurses	558	571	584	597	2.28
Beds in Hospitals	410	466	461	458	3.76
Number of Hospitals	16	17	17	17	2.042
Patients Treated by Hospitals					
Indoor	2826	3073	2351	3154	3.73
Outdoor	69135	74521	35005	39806	-16.81

Source: Punjab Development Statistics (2016)

but still improvements are required to provide access to health care equally in all areas. The quality of the infrastructure also needs to be kept in mind along with quantity.

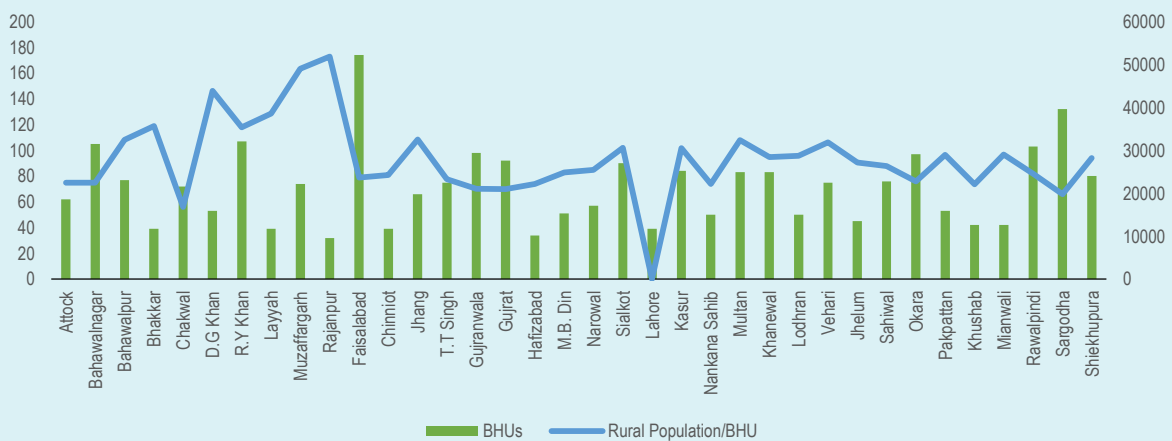
As the equal distribution of primary health facilities are more significant to achieve primary health care outcomes. The distribution of RHCs and BHUs across the province are presented in the figure.

Figures 6.15 and 6.16 shows variations in the number of BHUs per districts. The variation is also translated into the average rural population per BHU as presented in figure apart from the population of Lahore,

population. There us therefore no relationship between the size of the rural population and number of BHUs in a district.

On the other hand, RHCs are better equipped as compare to BHUs to manage minor emergencies and surgeries. They also have better diagnostic facilities, since most are equipped with the basic laboratories. Each unit is staffed by two to three doctors, who are supported by dispenser, lady health visitors, nurses etc. unlike BHUs, these centres operate for longer hours to deal with emergencies, so their staff works in shifts. In some cases, the government has

Figure 6.15: District Wise Distribution of BHUs and Rural Population per BHU

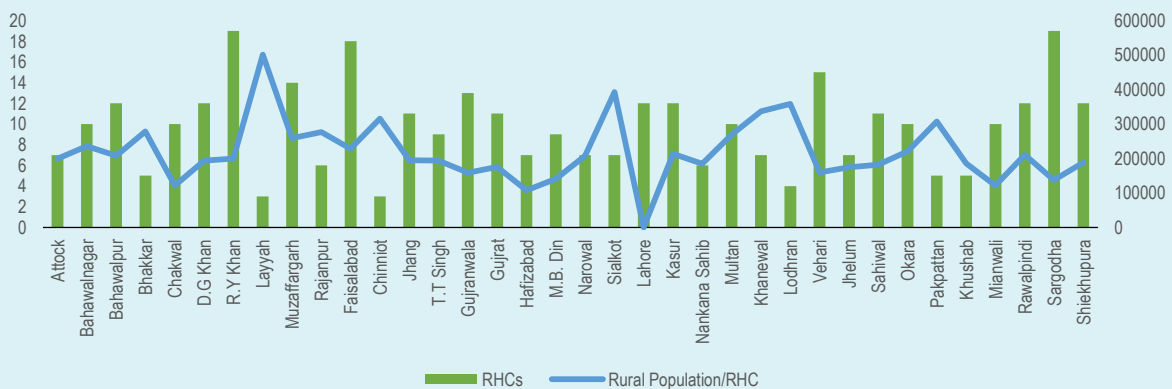


Source: Punjab Development Statistics (2016); Population & Housing Census (2017)

which has been considered as an urban district in the Population and Housing Census 2017. Rajanpur, Layyah and Chinniot, with the fewest BHUs of all the districts, as higher rural population per BHU. In R.Y Khan and Faisalabad, a BHU serving on average a less amount of

appointed specialists apart from general physicians to these facilities. Although a lot of efforts have been made to improve the provision of health facilities but still a great effort need to be made to provide access health care equally in all areas.

Figure 6.16: District Wise Distribution of RHCs and Rural Population per RHC



Source: Punjab Development Statistics (2016); Population & Housing Census (2017)

Health Sector Performance in Key Indicators

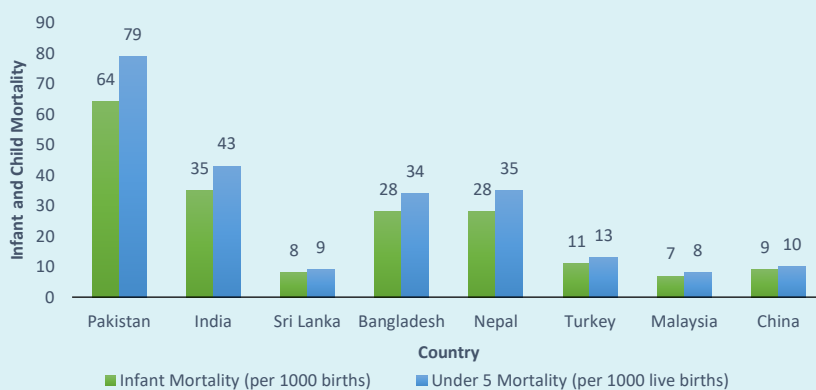
As shown in Figure 6.17, Pakistan's under five mortality rate and infant mortality rate are still higher in the region.

Although the expenditure on health sector has increased over the years. Govt. of the Punjab is also very keen to achieve the targets of SDGs especially related to the primary & maternal health care. But the province has not been able to reduce child

facilities for many decades. Consequently, the private sector has succeeded to fill the gaps to address the weaknesses of public services delivery.

For preventive health care, the Punjab Government is working on major interventions related with integrated maternal and child health care, immunization and control of hepatitis, enhanced HIV/AIDS program and TB control program. The extended program on

Figure 6.17: Comparison of Infant Mortality Rate (per 1000 births)



Source: World Bank (2016)

mortality or improve maternal health. Thus, a great room exists for improvement in the health sector of Punjab. In urban areas, the utilization rate of public health facilities is continuously declining due to difficult access and poor quality of public health care

immunization is mainly to reduce infant and child mortality rate. Although the

Box 6.2: Sustainable Development Goals

Goal 3: Ensure Healthy Lives and Promote Well-Being for all at all stages

- The SDGs related to health sector are mentioned below:
- By 2030, reduce the global maternal mortality ratio to less than 70 per 10,000 live births.
- By 2030, end preventable deaths of newborns and children under 5 by 25 per 1000 and 12 per 1000 respectively.
- By 2030, epidemics of AIDS, tuberculosis, malaria and neglected tropical disease and combat hepatitis and water borne disease.
- By 2030, reduce by one third premature mortality from non-communicable disease through prevention and treatment and promote mental health
- By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
- By 2030, substantially reduce the number of deaths and illness from hazardous chemicals and air, water, soil pollution and contamination.
- Support research and development activities in medicines and vaccines for the communicable and non-communicable disease that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha declaration on the TRIPS agreements and public health.
- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developing countries and Small Island developing states.
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

Table 6.3: Health Indicators of Punjab Pertaining to SDGs

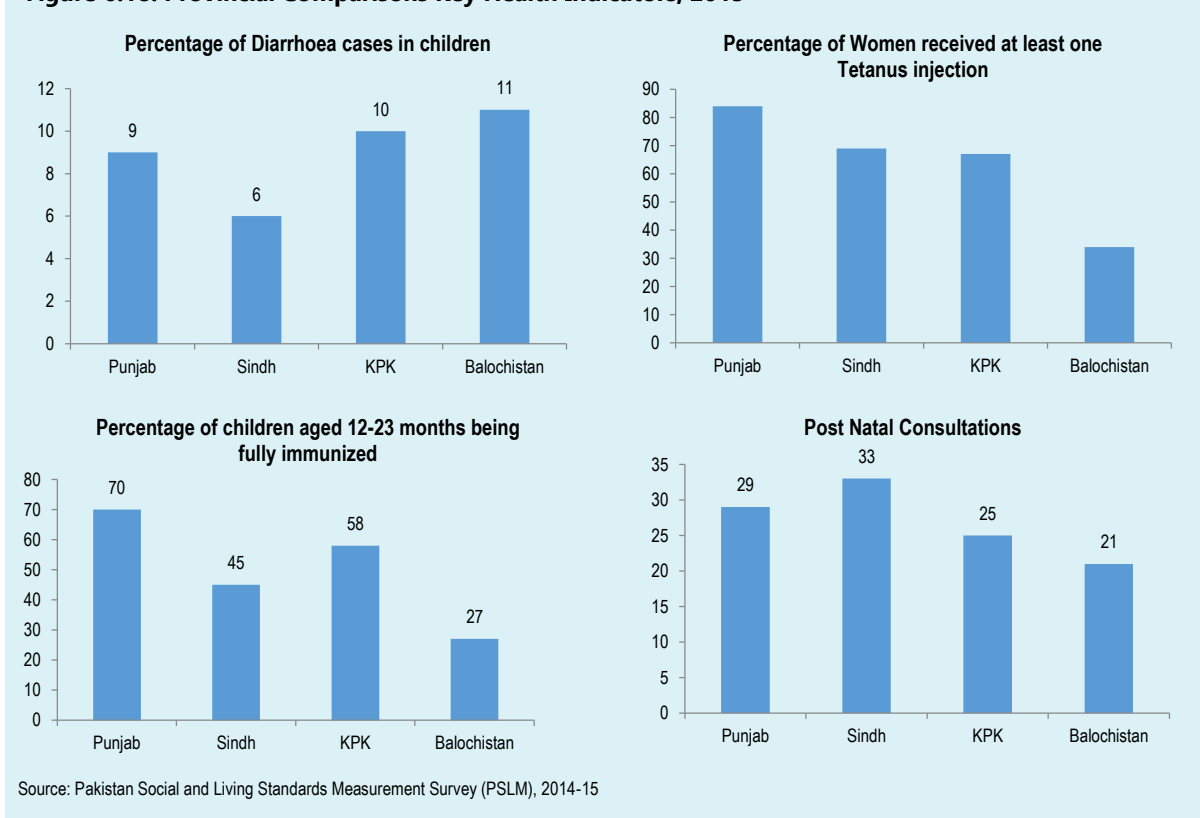
SDGs Indicators	SDG Targets	Value
Maternal Mortality Rate (Deaths per 10,000 Live Births)	70	93
Infant Mortality Rate (Deaths per 1000 Live Births)	12	75
Under 5 Mortality Rate (Deaths per 1000 Live Births)	25	62.3
Number of Cases of Suspected HIV/AIDS	End	3875
Number of Cases suspected TB	End	734,325
Number of Cases suspected malaria	End	797,648
Number of cases of suspected viral Hepatitis	End	355,724

Source: Health Department; DHIS Annual Report (2015); MICS (2014)

government has made progress in the immunization program; chronic disease like HIV/AIDS, Hepatitis B & C, Malaria knowledge about HIV/AIDS among ever married women age 15-49 years.

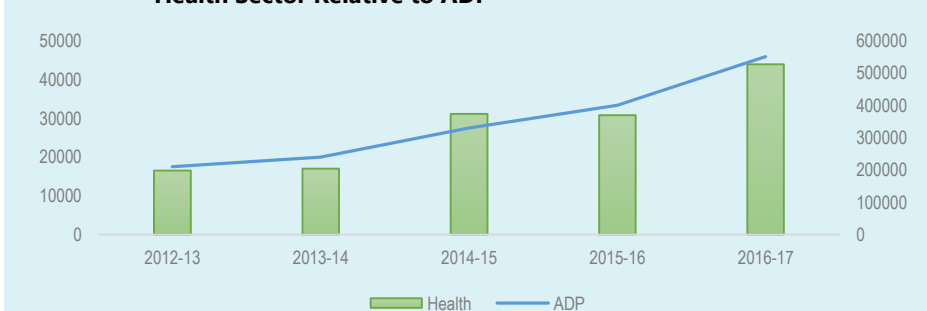
The performance of health sector of

Figure 6.18: Provincial Comparisons Key Health Indicators, 2015



and TB are still higher in numbers. The progress on the enhanced HIV/AIDS program is able to increase comprehensive Punjab is quite satisfactory compare to other provinces of Pakistan. As shown in Figure 6.18, Punjab is performing better in

Figure 6.19: Trends in Provincial Governments' Development Expenditure on Health Sector Relative to ADP



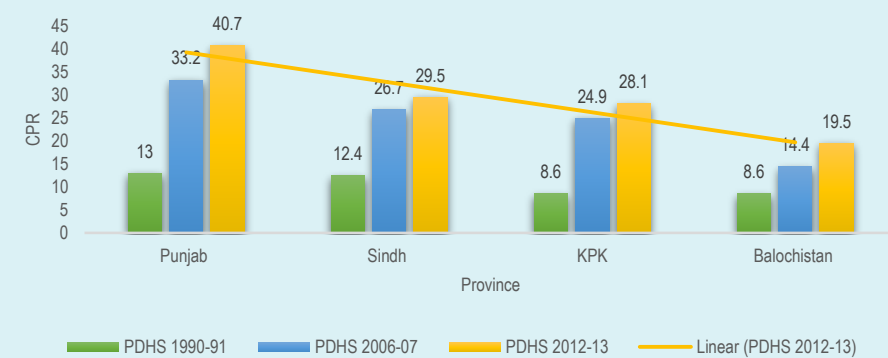
Source: Annual Development Programme

only some of the key indicators of the sector: full immunization of children and pre-natal care received by women. Moreover, the development expenditures of the province are also increasing over the years (Figure 6.19). However, Punjab has not been able to reduce the percentage of diarrhoea cases in children. The province has low number of post-natal consultations in comparison to Sindh, too. Punjab is ahead of the provinces in terms of providing immunization to children and in providing pre-natal care to women because the province spends more on health care in comparison to other provinces. The

challenge of population and to slow down the growth rate of population, the programmes related to family planning and contraception played an important role in Punjab. For the last few years the performance of the programmes becoming more effective due to change in the socio-demographic characteristics including education & awareness among women, effective media campaigns on population welfare programmes and female labour force participation increased the demand for small family.

Punjab Govt. took important

Figure 6.20: Contraceptive Prevalence Rate (Modern Method)



Source: PDHS (1990-91, 2006-07, 2012-13)

province Punjab has not been able to reduce child mortality or improve maternal health. Thus, a great room exists for improvement in the health sector of Punjab.

Performance in Family Planning Outcomes

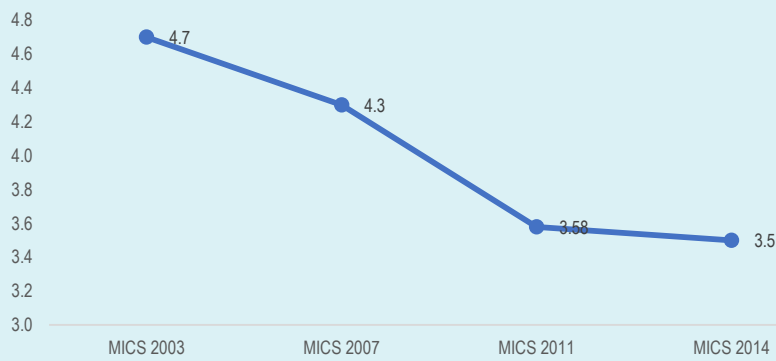
Punjab is the most populous province of the country with a population of more than 110 million. It is accommodating 52 percent of the total population of Pakistan with 26 percent of the land area of the country. Population growth rate is 2.13 percent as compare to country's population growth rate of 2.40 percent (Population Census, 2017). Although the population share of Punjab in total population of the country declines but still it is higher in the region; as in Sri Lanka and Nepal it is 1.1%, in India & Iran it is 1.2%, in turkey it is 1.6% and 0.5% in China (World Bank, WDI 2016). A swift increase in the population presents the challenge to address issues like poverty and income inequality. The current growth rate of population in Punjab will leads to double the population in 2050. To address the

initiatives for population control and for contraception prevalence. The Govt. is aimed to ensure easy accessibility of quality services throughout the province for furthering the cause of family planning and reproductive health.

The above Figure 6.20 shows the province wise change in contraceptive prevalence rate (modern method) and indicates that Punjab shows more progress in CPR over the period of 1990-91 to 2012-13 from 13% to 40.7% (27% change). Followed by 17% in Sindh, 19.5% in KPK and 10.9% change in Baluchistan. Similar patterns can be observe in case of traditional methods for contraception in Fig 2 presented below:

In Fig 6.21 total fertility rate also goes down overtime. Currently the fertility rate in Punjab is lowest as compare to other provinces with 3.8 births per women. Sindh and KPK with 3.9 & 3.9 births per women while Baluchistan with 4.2 births per women. Fig 4 shows the Trends of Punjab

Figure 6.21: Total Fertility Rate



Source: MICS (2003; 2007; 2011; 2014)

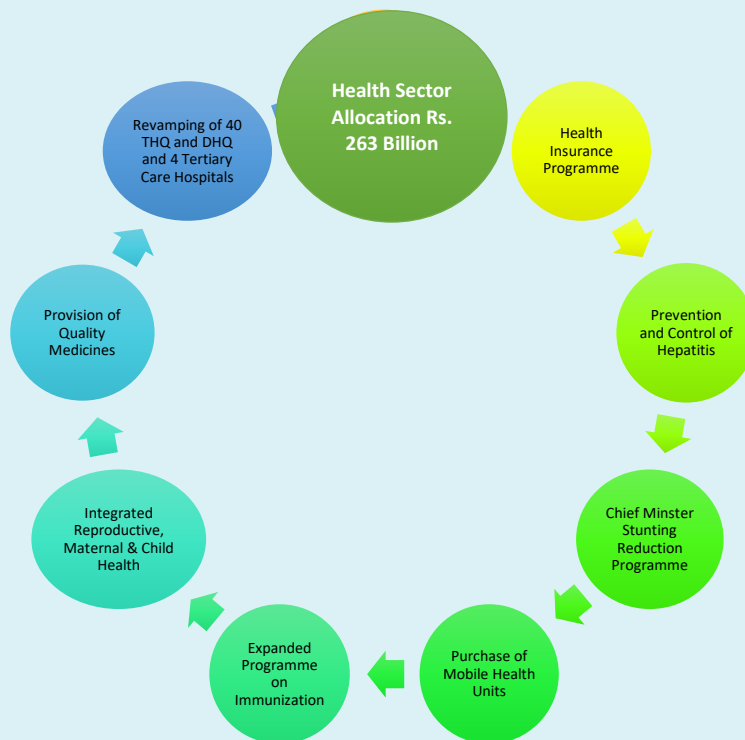
in fertility decline reported in all four round of MICS over the period of 2003 to 2014.

From the above discussion it can be seen that Punjab shows progress in the family planning indicators as compare to other provinces so that the population share is also showing downward trends in the country’s total population.

family planning and primary health care and Integrated Maternal and Child Health Program that intends to improve quality of life of women and children, Pakistan Kidney and Liver Institute (PKLI).

The health sector at the departmental level has undertaken a number of initiatives that will further increase the quality and quantity of health care in Punjab. Major initiatives are given in Figure 6.22. These initiatives like the *National Programme for*

Figure 6.22: Major Development Projects in Health Sector



Source: Planning & Development Department

Policies, Reforms and Achievements in the Health Sector

Pakistan is committed to achieve Sustainable Development Goals (SDGs) till 2030. The central focus of these initiatives is that the people of Punjab have easy and affordable access to at least basic health

focused to achieve primary and preventive health care including post-natal and ante-natal goals. A huge amount pertaining to new schemes of primary and secondary health care are spending by the health department. It also focuses on improving the governance within the health

Box 6.3: Punjab Health Sector Strategy 2012-18

The strategy for 2020 has the following objectives:

Service Delivery:

- Improved access and quality of healthcare
- To build an efficient, safe and effective health services delivery system which caters to the specific needs of all population groups with enhanced emphasis on MNCH, emergency care, family planning and nutrition services
- To reduce the morbidity and mortality related to communicable and non-communicable diseases (NCDs)
- To raise community awareness for health promotion and disease prevention
- To institutionalize quality of care in the health services delivery system

Governance and Accountability:

- An efficient system of health sector governance, accountability and regulation
- To rejuvenate management of health organizations and facilities in Punjab
- To create a higher capacity in Department of Health for its key roles in health policy making, programming, human resource management, monitoring and evaluation
- To reorganize Directorate General of Health Services and equip it with appropriately designed systems, data and capacities for orchestrating implementation of health policy initiatives in the province
- To seek efficiency, effectiveness and responsiveness gains through decentralized health management and service delivery, optimal autonomy to decentralized districts and autonomous health facilities and integration of vertical programmes
- To establish a robust, comprehensive and responsive regulatory regime to provide optimal regulatory environment to healthcare delivery in the province

Health Workforce:

- Adequate and skilled workforce available to fulfill population health needs
- To establish a governance and leadership structure for Human Resource policy, planning, production and management of health workforce to meet the health needs of the population
- To ensure availability of healthcare providers especially that of female healthcare providers in rural health facilities and specialists at secondary level hospitals
- To establish ways of improving quality and productivity of the health workforce
- To develop a favourable and attractive contractual policy for health professionals
- To improve retention of health workers and revitalize the concepts of continuous professional education and training
- To update medical education curriculum with a focus on community-oriented medical education

Health Information Systems

- A comprehensive, timely, accurate and functional information foundation for health policy and planning decisions
- To enhance scope and contents of health data systems for policy and planning.
- To improve access to readily useable data for informed decision making and evidence-based policy making
- To plug data gaps by instituting additional approaches for autonomous tertiary hospitals and private sector
- To integrate facility-based and community-based MIS to enhance planning process at the provincial level
- To develop a mechanism for dissemination of the performance of health sector

Essential Medicines and Health Technologies

- Uninterrupted supply of quality essential drugs for healthcare facilities and outreach workers
- To improve logistic and supply chain management system for regular, uninterrupted and adequate availability of essential drugs at all levels of health care
- To implement PPRA rules and regulation for public sector procurement
- To regularly review the Essential Drugs List (EDL) for making it response to burden of disease faced by the population of Punjab
- To create strategic assets at district level for assuring proper and sufficient storage of essential medicines
- To improve quality of drugs by enforcement of drug regulation in Punjab at all levels of manufacturing, testing and sale

Health Care Financing

- Efficient, effective, equitable and prioritized healthcare spending
- To enhance public sector financing of health service delivery
- To protect the disadvantaged and vulnerable from catastrophic health expenditures
- To enhance linkages of planning, budgeting and monitoring systems and to increase budgetary utilisation
- To increase use of private sector participation in provision of publically provided health services by contracting through transparent competitive process

department; improving access of healthcare care. Primarily the health sector is more through effective health services delivery system; improving quality and productivity of health workforce to fulfil population health needs and providing uninterrupted supply of quality drugs.

Several initiatives are currently taken by Punjab Government in order to streamline the objectives and outcomes of the health sector.

District wise Distribution of Development Finance

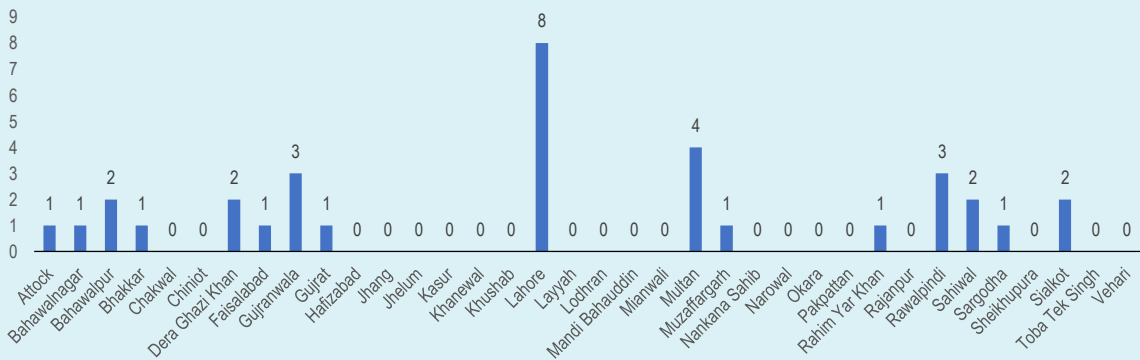
Figure 6.23 depicts total number of schemes in each district. It indicates that number of schemes are greater in number in major cities like Lahore, Faisalabad, Rawalpindi and Bahawalpur. The number of schemes in each district are supposed to be mostly based upon need basis.

Figure 6.23: District Wise Distribution of ADP Schemes



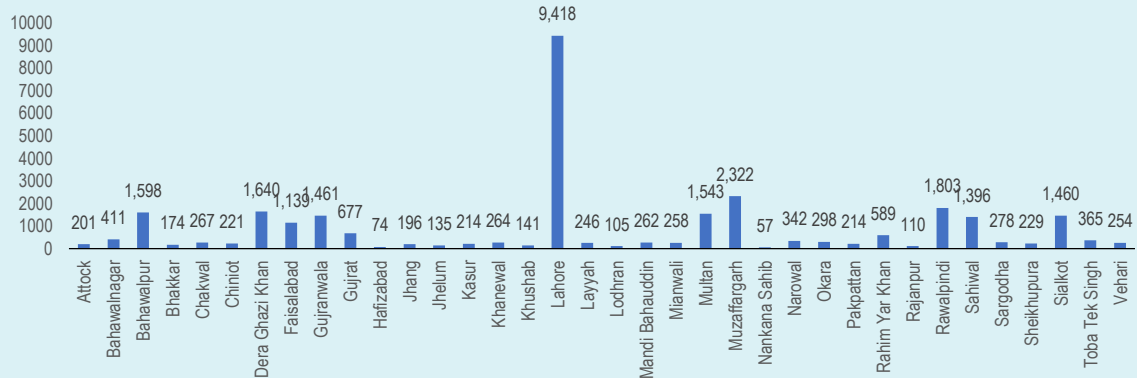
Source: Planning and Development Department, Government of Punjab.

Figure 6.24: District wise Distribution of Schemes More than One Billion



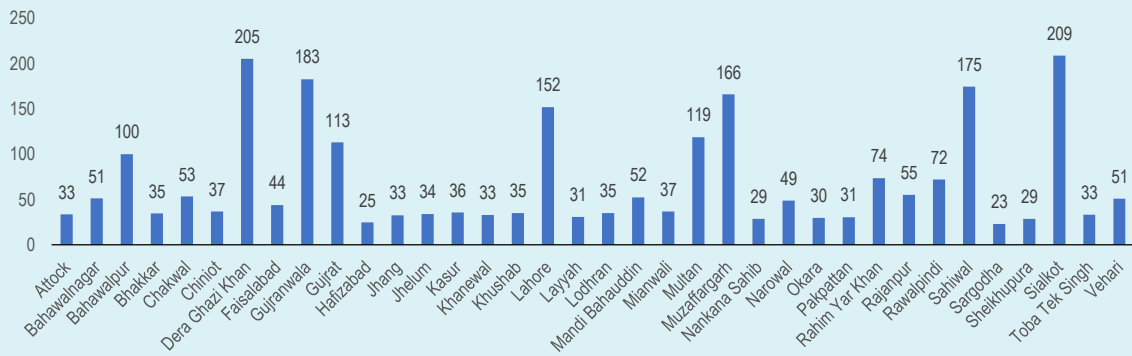
Source: Planning and Development Department, Government of Punjab.

Figure 6.25: District Wise Total Per Capita Allocation of ADP



Source: Planning and Development Department, Government of Punjab.

Figure 6.26: District Wise Average Per Capita ADP Allocation



Source: Planning and Development Department, Government of Punjab.

The figure given below shows district wise number of scheme's greater than one billion rupees which are mostly in Lahore, Multan, Rawalpindi and Gujranwala.

The figure given below indicates district wise average per capita release (sum of releases divided by number of schemes).

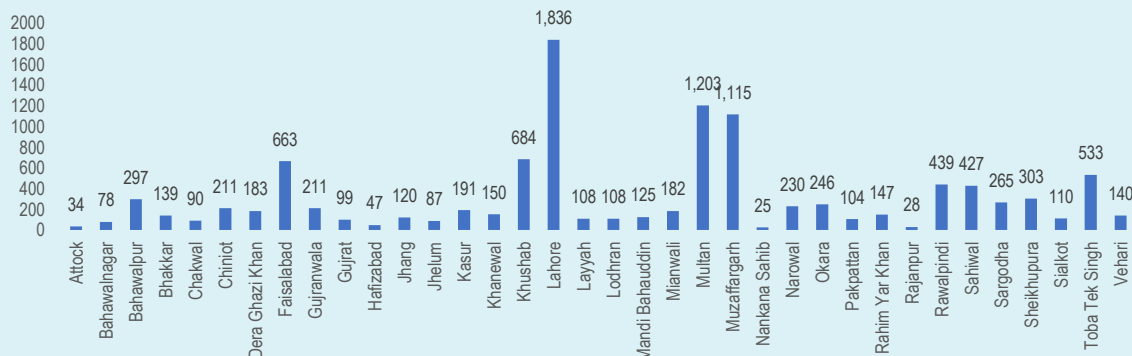
Figure 6.27: District Wise Average Per Capita Release



Source: Planning and Development Department, Government of Punjab.

The figure given below represents the district wise total per capita allocation (Sum of allocation to each scheme).

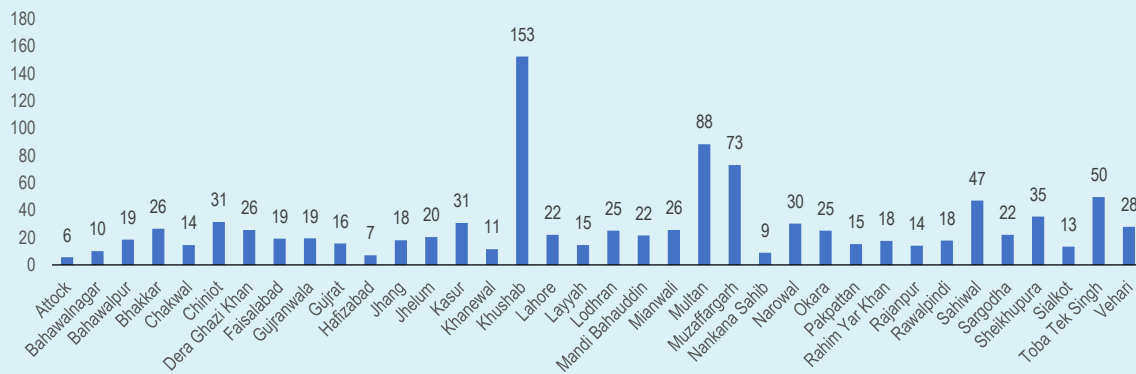
Figure 6.28: District Wise Total Per capita Release



Source: Planning and Development Department, Government of Punjab.

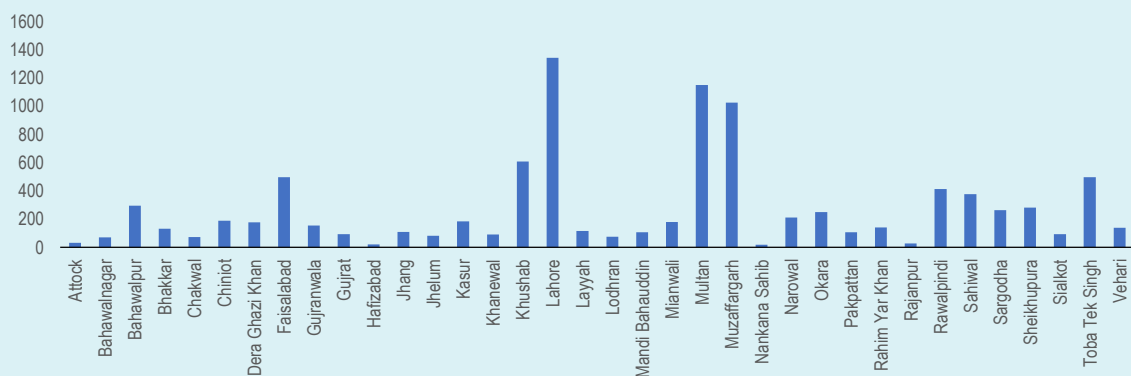
Figure 6.29 given below indicates district wise average per capita allocation (sum of allocations divided by number of schemes).

Figure 6.29: District Wise Average Per Capita Allocation



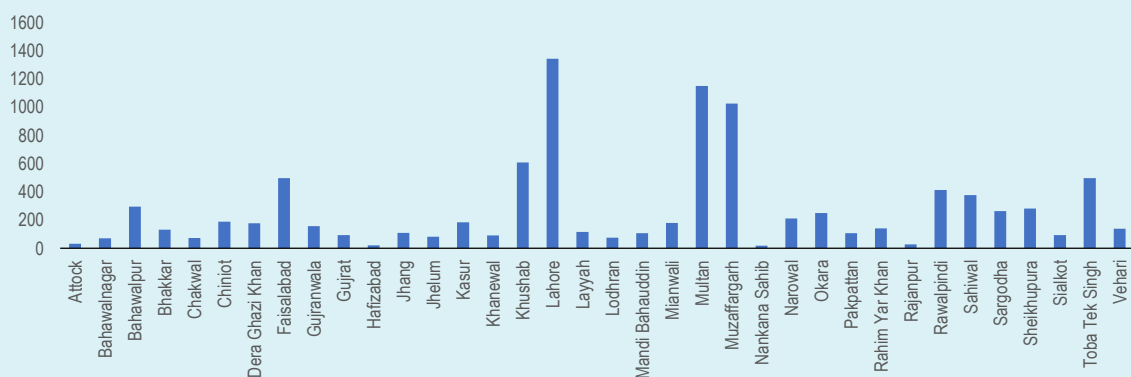
Source: Planning and Development Department, Government of Punjab.

Figure 6.30: District Wise Total Per Capita Utilization



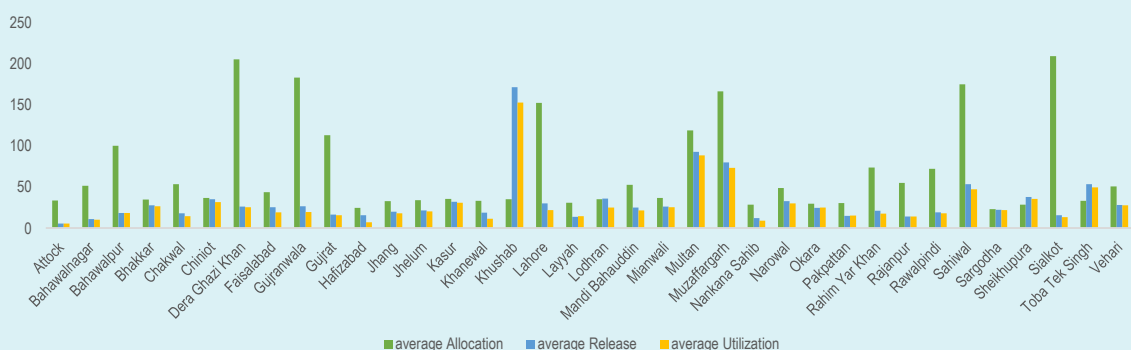
Source: Planning and Development Department, Government of Punjab.

Figure 6.31: District Wise Total Per Capita Utilization



Source: Planning and Development Department, Government of Punjab.

Figure 6.32: District Wise Comparison of Average Per Capita ADP Allocation, Release and Utilization



Source: Planning and Development Department, Government of Punjab.

The figure given below represents the

district wise total per capita release (Sum of releases to each scheme).

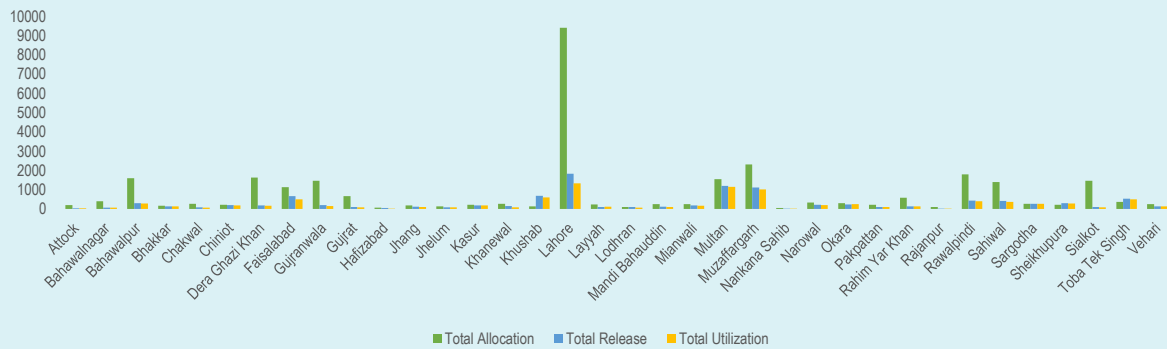
The figure given below indicates district wise average per capita utilization (sum of utilizations in each scheme divided by number of schemes).

Figure 6.33 represents the district wise total per capita utilization (Sum of utilizations to each scheme).

it specialized health care facilities are concentrated only in big cities.

- The access and quality of health care should be improved by:
- Recruiting dedicated MEA Health team for independent BHU and RHC monitoring
- Ensuring timely completion of bulk procurement of medicines based on

Figure 6.33: Fig: District Wise Comparison of Total Per Capita ADP Allocation, Release and Utilization



Source: Planning and Development Department, Government of Punjab.

Policy Recommendations

- The health sector’s ADP and the MDTF should be formulated in accordance with the SDG indicated targets. The performance of the sector and the indicators related to primary and preventive health care should be observed and monitored annually in order to update the status which can help to achieve the SDGs by 2030.
- The equal distribution of the health services in all regions of the province is necessary. This can help to increase the access of the general public to the health care facilities. The concentration of tertiary health care facilities is also needs to be address as

specified timeline

- Increasing districts’ budget allocation for BHU medicines
- Developing and implementing tools to increase use of health watch data for EDOs in district management and ensuring use of health watch data by EDOs in monthly meetings and filing of actions taken reports
- Fill vacant posts of BHU/RHC staff (including LHVs, midwives, nurses, dispensers, medical technicians).
- Decentralization to districts and autonomy to health facilities should be optimized.



WATER & SANITATION SECTOR

Importance of Water and Sanitation Sector to the Economy

Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant determinant of diseases such as cholera and typhoid. Drinking water can be contaminated with chemical and physical contaminants with harmful effects on human health. In addition to preventing disease, improved access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances. Inadequate disposal of human excreta and personal hygiene are associated with a range of diseases including diarrheal diseases and polio and are important determinants of stunting. Improved sanitation can reduce diarrheal disease by more than a third and can substantially lessen the adverse health impacts of other disorders among millions of children in many countries. Government of the Punjab has internalized the recently launched Sustainable Development Goals (SDGs). The SDG target 6 has focused on clean water and sanitation.

According to Pakistan Council of Research in Water Resources (PCRWR), the majority of the population in the country is exposed to the hazards of drinking unsafe and polluted water from both surface and ground water sources. It is estimated that around 40 percent of all reported diseases in

Pakistan are attributed to poor water quality. As one indicator of the magnitude of the problem, it is estimated that 250,000 children in Pakistan die every year due to diarrheal diseases alone. Safe water alone can reduce diarrheal and other related diseases by up to 50 percent, but an estimated 62 percent of Pakistan's urban population and 84 percent of the rural population do not treat their water. Pakistan's ranking in maintaining water quality standards is 80th out of 122 nations (UNESCO's World Water Development Report). The National Conservation Strategy states that almost 40 percent of all disease related deaths are connected to water borne diseases. Other sources of water pollution are industrial effluents, solid waste, hospital waste, chemical fertilizers and pesticides.

Rapid urbanization and growing population has led to rising demand for water sanitation and hygiene (WASH). As per vision 2025 document of government of Pakistan water contamination and poor water quality have direct and very significant impact on the nation's health with water borne diseases accounting for 70 percent of all common diseases that impact the national health. Studies have shown that poor sanitation; diarrheal and nutritional status have a close correlation⁴.

Recent data from the Economics of sanitation initiative support by The Water and Sanitation Program (WSP) suggests that the economic impact of poor sanitation and

water in Pakistan may be as high as 3.94 percent of GDP. A study⁵ on cost and impact analysis of water supply and environmental sanitation in Pakistan revealed that if water supply facilities are available to 90 percent of households and latrine facilities are available to at least 60 percent of households in villages, the benefit-cost ratio is 2.7 at 6 percent discount rate and 1.75 at 12 percent discount rate. The same study also mentioned that 25 deaths or more per 1000 children born could be prevented by investing in water and sanitation.

The importance for the sector is equally important at Punjab level in which problem of stunting due to poor water and sanitation sector has been at 36 percent.^{6,7} All this points to how seriously investment in this sector should be taken by policy makers.

Water and Sanitation Sector of Punjab

The performance of water and sanitation sector of Punjab is quite satisfactory compare to other provinces of Pakistan. As shown in Figure 7.1, Punjab is performing well in providing water and sanitation facilities to its citizens. Punjab ranks highest in providing water facilities to people by public tap. Moreover, in terms of sanitation facilities Punjab is able to provide 80 percent of its population with flush facilities. Although, the number of people without toilets are more in Punjab in comparison to other provinces but still the overall picture shows that people in Punjab have better access to sanitation facilities. In Punjab, the quality of publicly provided water is not good in comparison to other provinces. In terms of clarity, color, smell and stability of service around 40 percent of the people have expressed that quality of water is bad or very bad. Thus, sincere efforts are needed in order to improve the quality of water.

The water and sanitation expenditures are increasing continuously since 2000-01 but there is a visible upsurge since 2010-11.

Punjab has increased its spending on water and sanitation from 0.041 percent to 0.099 percent of the GDP. On average, Punjab spends more than the combined water and sanitation budget of other provinces. The increased expenditure has allowed the sector to significantly improve the infrastructure of the sector and provide better water and sanitation facilities (SPDC⁸ 2016).

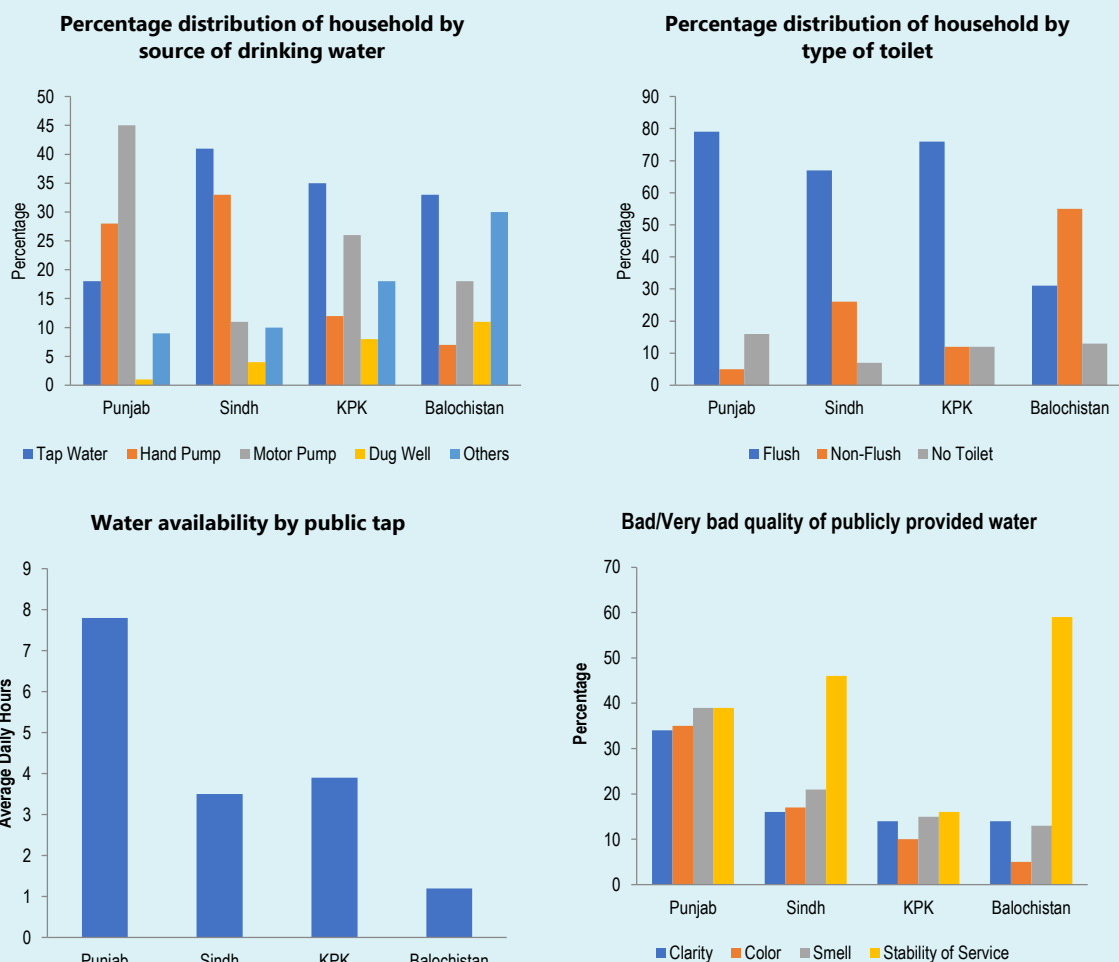
Punjab's water and sanitation sector performance is satisfactory within the context of Pakistan. Similarly, within Punjab the water supply and sanitation indicators show improvements. As shown in Table 7.1, use of improved sources of drinking water has improved and the number of households using unimproved sources of drinking water has decreased dramatically from 2011 to 2014 by around 42 percent. For sanitation too, access has been improved significantly. According to MICS 2014, 66.2 percent of household members use improved sanitation facilities. The specific places for hand washing are available to 79.6 percent of the households of Punjab in comparison to 76.8 percent in 2011.

The sections below first describe the reforms, efforts and initiatives of the Government of Punjab to reform the water and sanitation sector. The focus in these sections will specifically be on the role of water and sanitation sector financing and its impact on the water and sanitation sector performance. Lastly is the way forward to further improve the water and sanitation facilities in Punjab.

Sectoral Indicators

The Government of Punjab has undertaken many new policy initiatives and among them the major focus has been on providing improved sources of water to the citizenry. However, the quality of water and access to sanitation facilities need to be improved. As per the Punjab Multiple Indicator Cluster Survey (MICS) 2014, about 94 percent of the population of Punjab uses an improved source of drinking water – 89 percent in urban areas and 97 percent in rural.

Figure 7.1 Key Water and Sanitation Indicators, 2015



Source: Pakistan Social and Living Standards Measurement Survey (PSLM), 2014-15 and SPDC Household Survey (2015)

Further, 19.2 percent population of Punjab province has access to tap water followed by 41.7 percent motorized pump and 30.6 percent hand pumps. The proportion

of population using tap water as a main supply of drinking water is higher in urban areas (39.2 percent) as compared to only 9.6 percent in rural areas. Thus, there is a need to improve sources of water in rural areas.

Moreover, there are disparities and differences across the regions and districts.

Table 7.1 Water Supply and Sanitation Indicators Punjab

	MICS 2011	MICS 2014	Percentage Change
Use of Improved Drinking Water Sources			
Percentage of household members using improved sources of drinking water	94.1	94.4	0.3
Percentage of household members in households using unimproved drinking water who use an appropriate treatment method	3.6	2.1	-41.7
Use of improved sanitation (Not shared)			
Percentage of household members using improved sanitation facilities which are not shared	62.7	66.2	5.6
Percentage of children age 0-2 years whose last stools were disposed of safely	66.1	71.4	8.0
Percentage of households with a specific place for hand washing where water and soap or other cleansing agent are present	76.8	79.6	3.6
Percentage of households with soap or other cleansing agent available anywhere in the household	94.6	92.8	-1.9

Source: MICS, Punjab, 2011, 2014.

District Lahore leads all other districts in piped water with 64 percent population enjoying this facility, while less than 3 percent of the population in Bhakkar, Layyah, Muzaffargarh, Rajanpur and Jhang use piped water. The situation in district Faisalabad is considerably worse than other districts - only 70 percent get drinking water from an improved supply source. The highest use of hand pumps is found in Muzaffargarh (84 percent), motorized pump/tubewells in Gujrat (75 percent), protected well/spring in Sahiwal (about 18 percent) and rainwater collection in Khushab (5.3 percent). Overall, out of those household members who are using unimproved drinking water supply sources, only 2.1 percent are found using an appropriate water treatment method, slightly higher in urban areas (2.4 percent) than rural areas (1.6 percent). About 4.1 percent are boiling the water followed by 1.8 percent who use a water filter.

As per Punjab MICS 2014, 75 percent of the population is living in households who use improved sanitation facilities, which is higher in urban (92 percent) as compared to rural areas (67 percent). Sanitation in Punjab has wide inequities. Residents of district Khanewal, Rajanpur, Jhang, The purpose of WASH Sector Development plan is to improve water supply quality, sanitation and waste water management

Vehari, Multan, Lodhran and Muzaffargarh are less likely than others to use improved sanitation facilities. The 'flush connected to piped sewer system' is most common in Lahore district where 84 percent population are using it. The use of septic tank is more prevalent in Gujrat, Sialkot and Nankana Sahib where more than 80 percent of population is using it.

Although lot of efforts has been made to improve the provision of health facilities but still a great effort need to be made to provide access to water and sanitation facilities equally in all areas.

Plans, Developments and Accomplishments in the Water and Sanitation Sector

The government of Punjab has taken several measures in order to improve the access of water and sanitation facilities in the province. In this regard, the government of Punjab has formulated Water, Sanitation and Hygiene (WASH) sector development plan 2012-2014, Punjab Drinking water policy 2011 and Punjab Sanitation Policy 2015.

Box 7.1: Water, Sanitation and Hygiene (WASH) Sector Development Plan 2014-24

The objectives of WASH plan are as follows:

Water Supply:

- All rural areas, cities and towns have surveys, strategies and action plans for integrated water supply, sewerage and drainage, and solid waste management.
- 100 percent piped water coverage in cities and towns
- 65 percent piped water coverage in rural areas.
- Enhanced coverage of filtration plants
- Water flows monitored at tube wells

Water Quality:

- Monthly water quality testing at water resource
- Periodic monitoring of water quality zones
- All ground and overhead reservoirs supplied with chlorination treatment

Sanitation:

- Optimal sewage flow capacity to be maintained
- 82 percent sewerage coverage in cities and towns
- 70 percent sewerage coverage in rural areas
- Replacement of open drains by sewers
- Promote safe sanitation practices in high open defecation zones

Waste water Management:

- Water supply and sanitation schemes linked with waste water treatment
- Waste water treatment plants for cities
- Monitor contamination levels of industrial effluent
- Increase proportion of treated industrial waste water

Box 7.2: Punjab Drinking Water Policy 2011

- The vision of the Government of the Punjab is provision of safe drinking water of an adequate quantity at an affordable cost through equitable, efficient and sustainable services to all citizens by 2020.

Legislation:

- The Government of the Punjab, with the consensus of all stakeholders (provincial departments, elected representatives, and the civil society) will enact the Punjab Municipal Water Act. This Act would provide a statutory, independent, institutional setup that will regulate policy principles; standards and the performance of service delivery agencies in the light of this policy.

Institutional Reforms:

- The Government will launch an institutional reform program which will not only focus on improvement in service delivery but also address allied issues such as rationalization of tariff, improvement in management of organization and introduction of performance monitoring systems so as to ensure that the WASAs are transformed into a progressive; accountable and financially viable institution

Rural Water Supply:

- The Government of Punjab will devise plans to provide training to rural Community Based Organizations through Local Governments and Public Health Engineering Departments.

Monitoring:

- The Government through water testing laboratories will ensure water profiling of each district on annual basis. This would be the basic data on which the quality of service delivery will be gauged.

Public Awareness:

- This Policy is aimed at creating a future in which all citizens of the Punjab are provided with clean drinking water and in which water resources of the Province are safe from over mining, contamination and depletion. 70 percent sewerage coverage in rural areas
- Replacement of open drains by sewers
- Promote safe sanitation practices in high open defecation zones

Waste Water Management:

- Water supply and sanitation schemes linked with waste water treatment
- Waste water treatment plants for cities
- Monitor contamination levels of industrial effluent
- Increase proportion of treated industrial waste water

in the province. Moreover, it aims at providing 100 percent piped water to cities and 65 percent in rural areas. Replacement of open

drains by sewers is also one of the objectives of the plan (See Box 7.1

To improve the access and quality of drinking water, the Punjab government formulated Punjab Drinking Water Policy 2011 (See Box 7.2). The objective of this policy is to improve rural water supply and to create awareness among public about clean drinking water.

For the purpose of improving access to sanitation facilities both in urban and rural areas, the Punjab government formulated Punjab Sanitation Policy 2015 (See Box 7.3). The objective of this policy was to involve community and invest in public toilets so that open defecation by people can be reduced.

Water & Sanitation Section of Annual Development Plan 2016-2017

According to the Punjab's Annual Development Plan (ADP) 2016-2017 the total size of ADP for Physical Planning and

Housing section (PPH) was Rs 45 Billion. This included block allocation (ODP) of Rs 30 billion for Punjab Saaf Pani Program. Apart from this block allocation to one project (Punjab Saaf Pani Project size of ADP comprising of numerous schemes was at Rs. 15 billion. This amount was spent on schemes belonging to Water and Sanitation (WATSAN) sector. Around 34 percent of total allocated amount of Rs.45 billion was allocated for urban areas while the rest 66 percent of the amount was allocated for rural areas. Looking at from North South divide 59 percent of total money was allocated to North and rest was for South. However, this allocation is highly sensitive to the inclusion/exclusion of a single program i.e. Saaf Pani Program. Saaf Pani has huge block allocation which distorts the true picture ADP allocation. As can be seen in figures below without the Saaf Pani Initiative rural urban & North South divide is great. Following two pictures depict what happens to

Box 7.3: Punjab Sanitation Policy 2015

Punjab Sanitation Policy envisions facilitating the processes for improved access to hygienic, affordable and equitable sanitation facilities leading to healthy and liveable environment for all residents, in all cities, towns and villages of the province.

Financial Resources:

- The Punjab government shall provide the required financial resources from its own budget, private sector, donor grants and by tapping community investment with least loaning from international agencies.

Programmatic Approach:

- The policy envisages execution of Pakistan Approach to Total Sanitation PATS for sustainable sanitation improvement within communities. The PATS approach endorses the use of a number of branded total sanitation models which include community led total sanitation, school led total sanitation, component sharing, sanitation marketing and disaster response.

Mapping/Documentation:

- Mapping/documentation of existing sanitation infrastructure in universal terms will be undertaken to know exactly the scope of work in each administrative unit to avoid duplication of services by various departments.

Gender Mainstreaming:

- Gender mainstreaming will be given substantial consideration in components involving educating and engaging with communities, especially women as important clients, as they are directly dealing with sanitation issues at the household and neighborhood levels in both rural and urban settings.

Effluent Quality Monitoring:

- A data base of effluent quality monitoring at district, tehsil or union council level will be developed which will help in time series analysis and to see the improvement being made with the different steps taken by the government to improve environmental sanitation.

Provision of Public Toilets:

- Provincial government will invest widely, or collaborate with private sector, in construction, operations and maintenance of facilities such as public toilets.

Public Private Partnership:

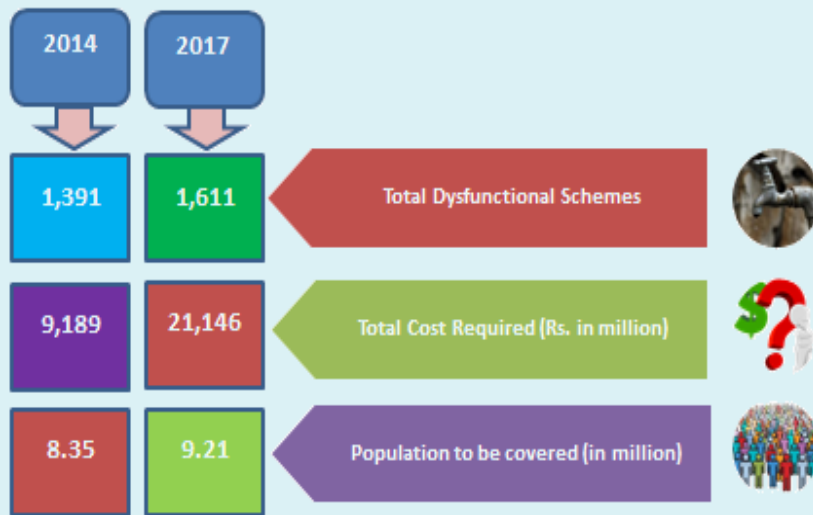
- By-laws will be developed, implemented and monitored by the provincial government for ensuring development of sanitation and sewage and wastewater treatment facilities for different sizes of private housing schemes and townships across the province.

amount allocated once this program is taken out of the calculation.

Aim of most of the schemes in ADP related to WATSAN is to increase coverage of water and sanitation in Punjab. The schemes in ADP this year reflected money being spent for the aforementioned purpose. However, it is possible for these schemes to become dysfunctional after couple of years. This could happen due to variety of reasons. Azhar (2017) provides an overview on the dysfunctional rural water supply schemes. It mentions the problems that lead to dysfunctionality of water schemes along with the possible solutions to avoid such problems in future. Author along with many other solutions mentions the need for rehabilitating the dysfunctional schemes. In the ADP 2016-2017 there were total of 72 schemes that directly or indirectly catered to rehabilitating the dysfunctional schemes. Of these reflected in ADP 30 were unapproved. Apart from one scheme all these 72 schemes were done at *ad hoc* basis. One scheme that showed systematic rehabilitation of large number of rural water supply scheme which had a cost of Rs. 3000 million was unapproved.

Figure 7.2 taken from Azhar (2017) depicts how grave is the problem of dysfunctionality of rural water supply schemes. As of January 2017, there were 4662 total rural supply schemes in Punjab maintained by Public Health and Engineering Department (PHED); of these schemes 3051 were functional while the rest 1611 were dysfunctional. Simply put, approximately 65 percent schemes were functional whilst the rest remained dysfunctional. As a result of this dysfunctionality 18 percent of population remains un-served in Punjab. These figures are in addition to un-served areas where PHED is not present and people do not have access to clean drinking water. In 2014 there were 4216 total rural water supply schemes of these 1391 (33 percent of the 4216) were dysfunctional. Resultantly cost required to rehabilitate these schemes have also risen from Rs. 9,189 million in 2014 to 21,146 million in 2017. This indeed should be a cause of concern for the policymakers

Figure 7.2: Snapshot of rural water schemes



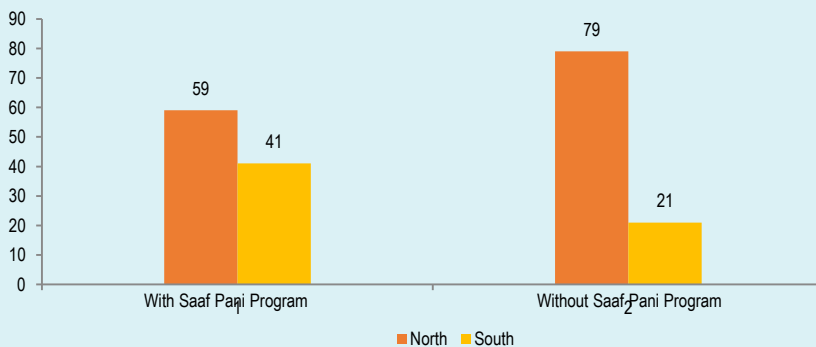
Source: Azhar (2017).

of the sector. The facts just highlighted points to the need of having large project

that should rehabilitate bot water supply and sewerage schemes in Punjab.

gap between rural and urban areas. How-

Figure 7.3: North South Allocation of PPH Section with and Without Saaf Pani Project (Rs Million)



Source: Authors illustration using data from ADP

Financing of the Water and Sanitation Sector

Geo Spatial Sensitivity Analysis

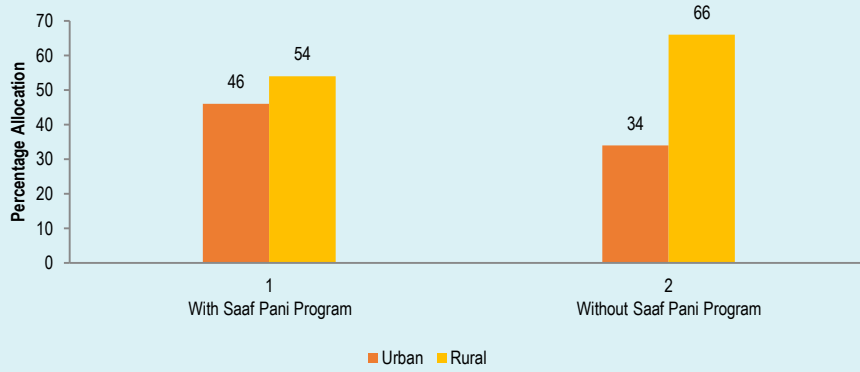
Figure 7.3 shows first pair of bar one can see that 59 percent of total money was allocated to North and rest was allocated to South. There is 18 percent gap between North and South. However, when PSPC project is excluded from analysis this divide rises to 58 percent thus clearly showing the sensitivity of ADP to one project only.

Figure 7.4 shown above first pair of bar one can see that 54 percent of total money was allocated to rural areas and rest was allocated to urban areas. There is 8 percent

ever, when PSPC project is excluded from analysis this divide rises to 32 percent. Again, it clearly shows the sensitivity of ADP to one project.

Punjab growth strategy proposes improved investment on water supply and sanitation. This can be seen by the fact that overall allocation to WATSAN sector has grown. Saaf Pani project has raised many questions itself since it does not technically help in achieving the goal of safe drinking water which is one of the aims of the SDGs and also of draft Punjab Drinking Water Policy. This policy talked about achieving MDGs. This policy needs to be revised given the new global development agenda under the SDGs. This makes one think about the priorities of government. WASH

Figure 7.4: Rural-Urban Allocation of PPH Section with and Without Saaf Pani Project



Source: Authors illustration using data from ADP

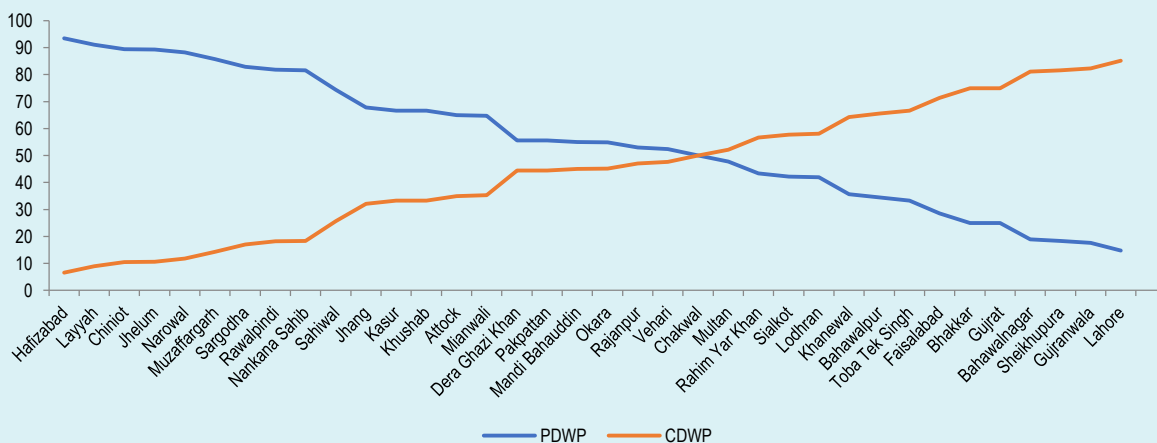
Sector plans talks about conserving water resources, but ADP 2016-2017 does not reflect any project that may help in achieving this aim. Research has shown that water metering can be one of the ways in which water can be conserved in urban areas. Overall there needs to be more need based schemes. Many schemes are politically motivated. Also schemes of water supply and sanitation may be provided in tandem, this will help in solving problems like malnutrition which leads to stunting. Also, problems like diarrhea can also be solved. Capacity building of TMA needs to be done in order to achieve the objectives of sectoral plans. There is need to improve sustainability of schemes for which Community Based Organization (CBO) needs to be strengthened and that is policy decision needs at provincial level. However, PC-I related to strengthening of CBOs may be a good addition to ADP of this section.

Figure 7.5 shows district level break up of total number of schemes in WATSAN ADP in terms of their size. The Districts showed in left half of graph displays that they have higher percentage of schemes belonging to PDWP level. Thus, reflecting that these districts had higher number of schemes whose values exceeded 400 million rupees. Whereas districts on right half of graph shows that number of schemes belonging to Central Development Working Party (CDWP) had high proportion. Chakwal on the other hand equal has percentage of CDWP and PDWP schemes.

Following graph shows district level break up of ADP in terms of allocation and number of schemes Multan, Kasur, Sheikhupura and Lahore had highest number of schemes along with the greatest level of allocation. Whereas Chiniot, Jhang and Rawalpindi had the lowest number of schemes along with the least level of allocation in terms of cost.

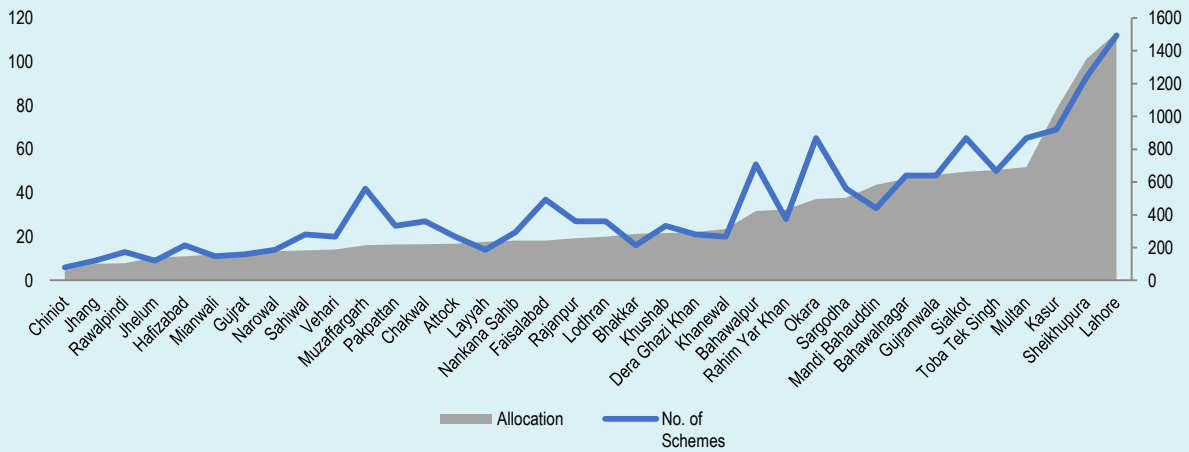
District Level Analysis

Figure 7.5: District level Break up of ADP in number of schemes



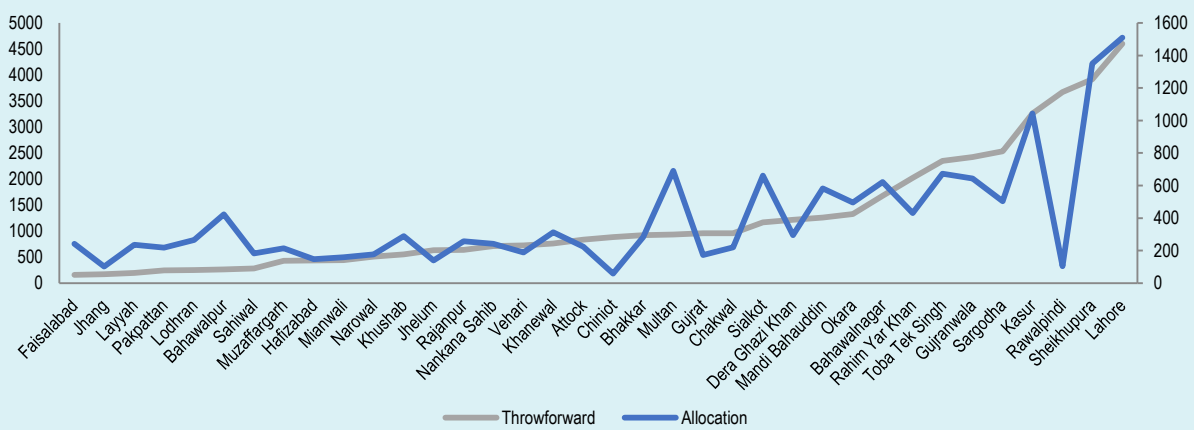
Source: Authors illustration using data from ADP

Figure 7.6: District level Break up of ADP in terms of allocation and number of schemes



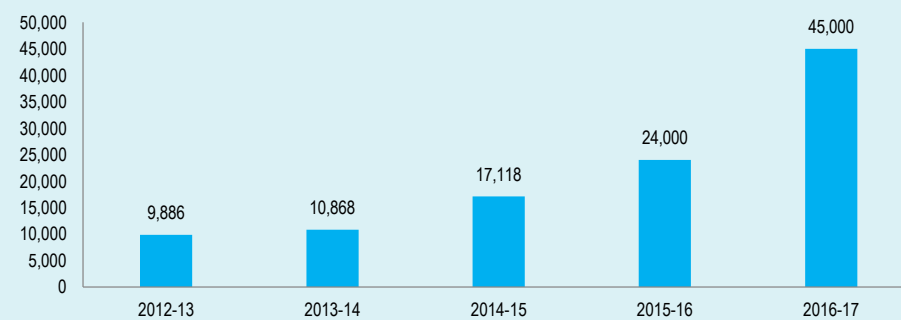
Source: Authors illustration using data from ADP.

Figure 7.7: District level Break up of ADP in terms of allocation and throw forward



Source: Authors illustration using data from ADP.

Figure 7.8: Trends of Size of ADP over the period of five years (Rs Million)



Source: Authors illustration using data from ADP.

Figure 7.6 shows which districts require greater allocation in term of ADP funds so that their throw forward can decrease. Rawalpindi had less allocation in 2016-2017 even though its throw forward is one of the highest in Punjab. Lahore had highest throw forward but its allocation in

ADP was also highest. Districts whose allocation is greater than their throw forwards show a positive sign which means that overall throw forward will fall over time.

Trends in the Size of ADP

The size of ADP for the WATSAN sector has been grown over the past five years as shown in Figure 7.8. There was steady increase in ADP for this sector. However, there was huge jump in the allocation for this sector from Rs. 24 billion in 2015-16 to Rs. 45 billion in 2016-2017. This was mainly because of the block allocation of Rs. 30 billion for the Punjab government’s flagship Punjab Saaf Pani Company (PSPC). However, there is criticism on the model adopted by the company. PSPC will provide drinking water only instead of commodity water and that too will be available at filtration plants far from the houses of people. It is debatable whether this huge endeavor by the government will yield any economic benefits.

projects money is allocated but project fails to start in time for example to legal issues like stays orders from courts etc. due to which money is surrendered by department in that particular year. Another major reason is that many unapproved schemes show up in ADP which inflates the overall size of ADP. Once the schemes get not approved then their cost element from the overall ADP is taken out. Also, it is likely that due to changing government priorities size of a sector can be reduced thus reducing the overall size of ADP.

Revised allocations (see Figure 7.9) have been lower than the budgeted allocation for the past five years. It can be seen in the table 7.3 that revised ADP as percentage of budgeted ADP is lower than

Table 7.2: Budgeted vs. Revised Sectoral Allocation (Rs Million)

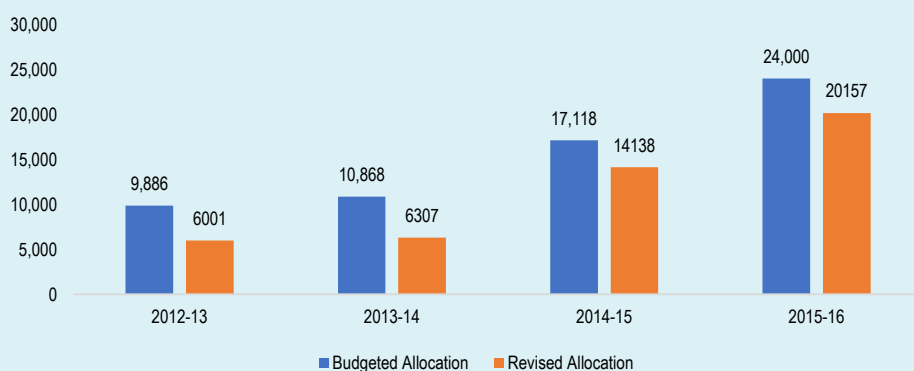
Year	Budgeted Allocation	Revised Allocation
2012-13	9,886	6,002
2013-14	10,868	6,306
2014-15	17,118	14,138
2015-16	24,000	20,157
2016-17	45,000	30,819

Source: Planning & Development Department.

Table 7.2 shows budgeted versus revised allocation of WATSAN Section.

100 percent. Lowest figure for the aforementioned ratio has been in 2013-14

Figure 7.9: Trends of Budgeted vs Revised Allocations over the period of five years (Rs Million)



Source: Authors illustration using data from various issues of ADPs.

There is systematic trend of revised allocation being lower than budgeted ones. Glance at the data shows various reasons for the aforementioned trend. One major reason is that for mega projects sometimes sizable money is allocated but after deliberations at the Provincial Development Working Party (PDWP) the cost of many schemes is revised, mostly to lesser amount than before. Other reason is that for some

and the highest it has been in 2015-2016. Reasons for this divergence in revised versus budgeted figures are mainly due to resource constraints faced by the government. Due to which government has to rationalize its ADP which leads to multiple revisions at various forums of government.

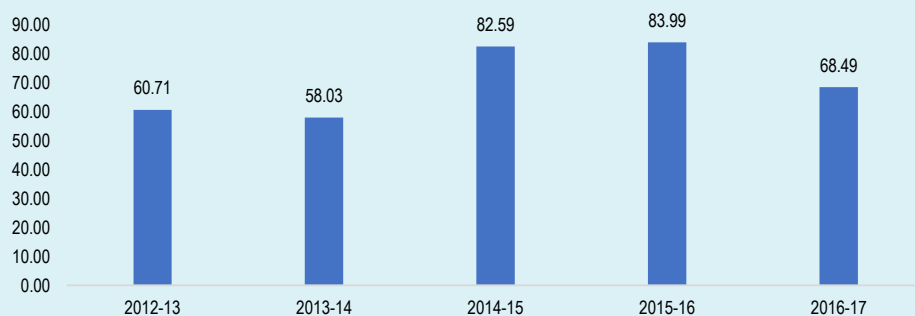
Table 7.4 shows the true picture of money spent on WATSAN sector as

Table 7.3: Revised ADP as percent of Budgeted ADP

Years	Revised ADP as percent of Budgeted ADP
2012-13	60.71
2013-14	58.03
2014-15	82.59
2015-16	83.99
2016-17	68.49

Source: Authors calculation using data from ADP

Figure 7.10: Revised ADP as percent of Budgeted ADP over the period of five years



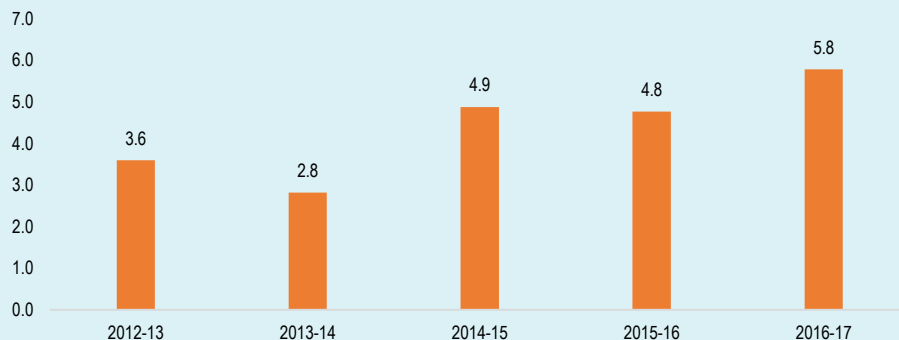
Source: Authors illustration using data from various issues of ADPs.

Table 7.4: Revised Sectoral ADP as percent of Total ADP

Years	Revised Sectoral ADP as percent of Total ADP
2012-13	3.6
2013-14	2.8
2014-15	4.9
2015-16	4.8
2016-17	5.8

Source: Authors illustration using data from various issues of ADPs.

Figure 7.11: Revised Sectoral ADP as Percentage of Total Revised ADP



Source: Authors illustration using data from various issues of ADPs.

percentage of total ADP. Overall figures remain under 6 percent. Whereas average for the five years is at 4.38 percent.

Table 7.5 shows the year wise size of throw forward and cost of new schemes. For all the years shown except 2013-2014 cost of new schemes was lower than the throw forward. 2013-14 is unique since it

was the election year. So it is possible the new government spent a lot fulfill the promises made in the election year. This resulted in size of

forward rising from 6897.4 in 2013-14 to 27587.4 in 2014-15. This huge throw forward then persistent in the following years as well.

Table 7.5: Size of Throw forward and Cost of New Schemes

Years	Size of Throw forward	Cost of new schemes
2012-13	13,981.1	5,283.2
2013-14	6,897.4	8,256.5
2014-15	27,587.4	13,017.4
2015-16	25,157.2	21,220.8
2016-17	22601.0	30,834.3

Source: Authors calculation using data from ADP

Key Indicators of the Sectoral ADP

As seen in Table 7.6, Total Number of ongoing schemes are 696 whereas total number of new schemes are 548. There one major scheme reflected in Other Developments Program (ODP) which gives us total of 1245 number of schemes reflected in ADP 2016-2017 of WATSAN sector. Of the 15 billion allocated to this sector 53 percent went to ongoing schemes and the remainder of 47 percent went to new schemes. Total number of schemes have risen from 396 in 2012-13 to 1245 in 2016-17. There was sharp decline in number of schemes from 2012-13 to 2013-14. This is interesting since 2013-14 was election year. It is because the size of schemes had increased. As seen by the fact that average cost of schemes increased from Rs. 79.9 million to Rs. 179.9 million, reflecting that more schemes of bigger size were in ADP leading to less space for small schemes. Similarly next elections of 2018 are approaching fast and again we see average

allocation for new schemes has increased in magnitude. Also allocations for new schemes have increased in order to finish these schemes before election. This has led to increased allocative efficiency of new schemes from 23.5 percent in 2015-16 to 82.2 percent in 2016-17.

Analysis of ADP 2016-17

Figure 7.12 shows the number of schemes and percentage distribution of schemes according to the size of new schemes. For example around 40 percent of the schemes of ADP 2016-18 ranged from Rs,10 to 50 million and 25 percent of schemes were under less than 10 million rupees. This shows that there were many schemes of relatively small size in ADP 2016-17. Right tail of above graph shows that very few schemes had size greater than Rs. 250 million. This figure can be seen in conjunction with figure titled District level Break up of ADP in number of schemes. This paints clear picture how schemes are distributed according to size in all districts of Punjab. Similarly figure shown below

Table 7.6: Key Indicators of the ADP (Rs. In Million)

	2012-13	2013-14	2014-15	2015-16	2016-17
Number of Schemes	396	156	369	936	1245
On-Going Schemes	389	145	207	509	696
New Schemes	7	11	162	427	548
Percentage New Schemes	1.8	7.1	43.9	45.6	44.0
Cost of New Schemes as percent of Total Cost	16.7	30.4	22.6	31.2	49.3
Average Cost per Scheme (Rs Million)	79.9	173.9	155.8	72.7	99.1
On-Going Schemes	67.8	130.1	214.9	92.0	89.8
New Schemes	754.7	750.6	80.4	49.7	110.8
Average Allocation per Scheme (Rs Million)	25.0	69.7	46.4	25.6	36.1
On-Going Schemes	11.8	19.4	55.7	14.5	11.5
New Schemes	754.7	732.4	34.4	13.2	67.5
Allocation as proportion to Cost of Schemes	31.2	40.1	29.8	35.3	36.5
On-Going Schemes	17.5	14.9	25.9	15.7	12.8
New Schemes	100.0	97.6	42.9	26.5	60.8
Allocative Efficiency of the Sectoral ADP*					
On-Going Schemes	46.6	25.9	67.4	30.7**	17.8
New Schemes	53.4	74.1	32.6	23.5	82.2

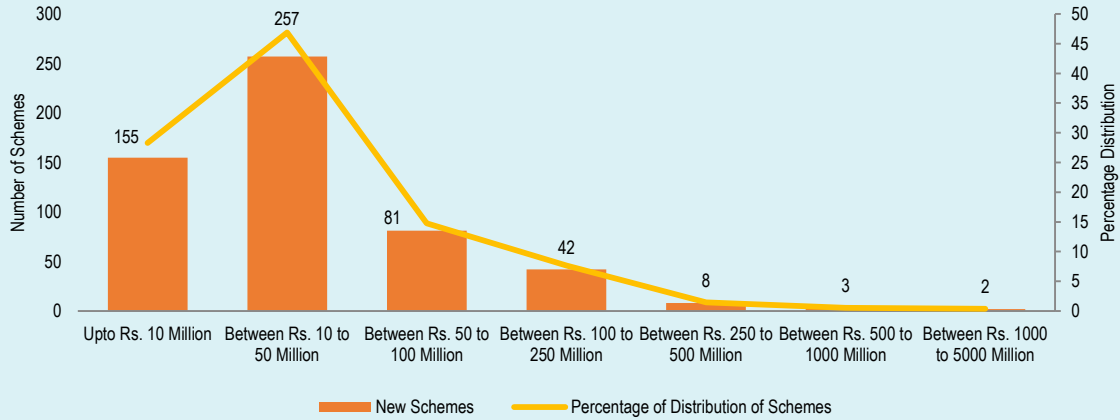
Source: Authors calculation using data from ADP

Note: * Percentage of the total sectoral allocation going to on-going schemes and new schemes. **Sum of On-going and new Schemes is not equal to 100 because ODP is ambiguous in 2015-16 ADP which is 11,000 m and whole ADP is taken as 24,000 m in this analysis.

shows the number of schemes and percentage distribution of schemes according to the size of on-going schemes.

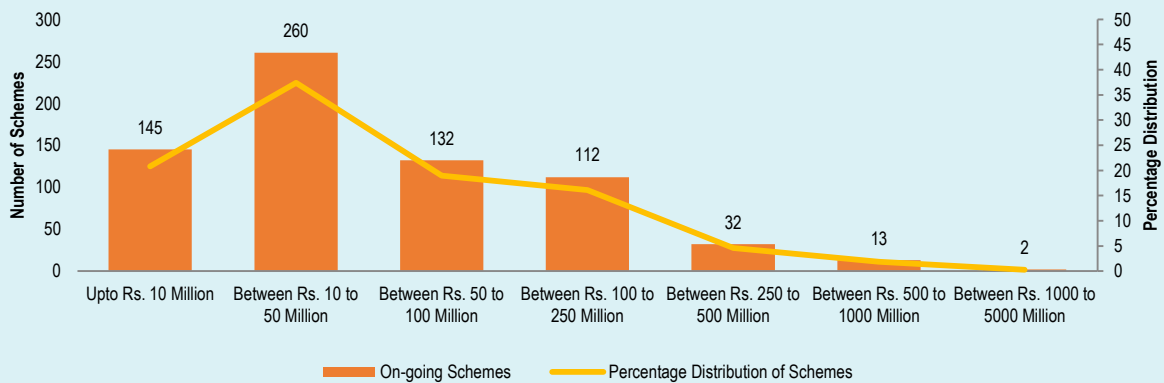
Figure 7.13 follows the same pattern as shown in earlier Figure.

Figure 7.12: Size wise distribution of new schemes



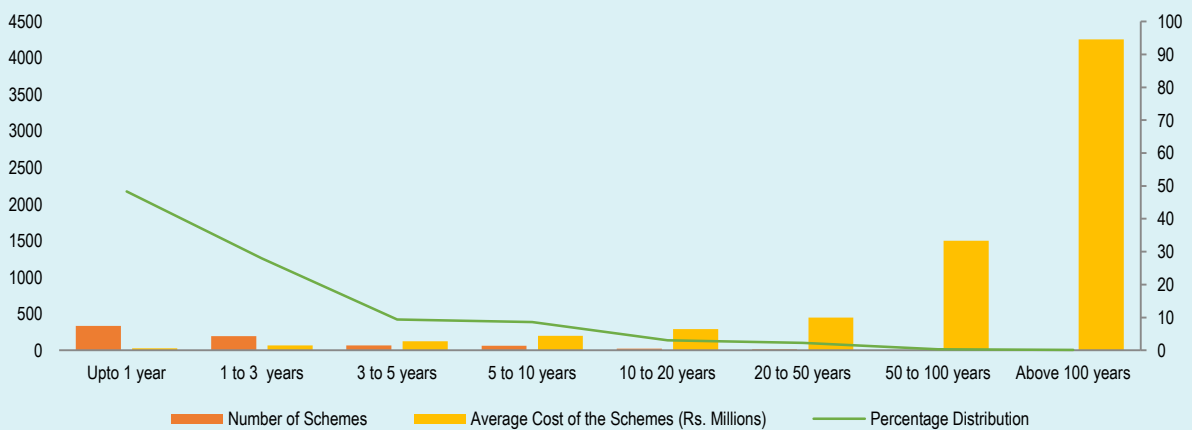
Source: Authors illustration using data from ADP
 Notes: Above figures excludes the ODP allocation of Rs. 30,000 million

Figure 7.13: Size wise distribution of on-going schemes



Source: Authors illustration using data from ADP
 Notes: Above figures excludes the ODP allocation of Rs. 30,000 million

Figure 7.15: Projected time that it will take to complete the On-going Schemes



Source: Authors illustration using data from ADP
 Notes: Above figures excludes the ODP allocation of Rs. 30,000 million

Schemes that have the highest average cost have the lowest completion rate i.e. it has completion rate of less than 1 percent, which is understandable because of thin allocation to these projects. (see Figure 7.14) Similarly projects that have low average cost have high completion rate since they have small gestation periods. Most of the on the ongoing schemes have been completed between 25 and 50 percent.

PC-Is

Project benefits and analysis is a critical section of the PC-I, which in many water supply and sanitation proposals is taken

had to go through. There is still lack of consensus at various forums whether this scheme needs to be taken forward. Most of the scheme have normal gestation period. Also it has been practice in past that after few years or before election year allocation to the ongoing schemes is increased. This further reduces the gestation period.

Conclusions and Policy Recommendations

- Any water supply scheme reflected in ADP should be on need basis and

Box 4: PC-Is

(a) Project benefits and analysis

- Financial: Income to the project along with assumptions.
- Social: Quantify benefit to the target group
- Environmental: Environmental impact assessment negative/positive.

(b) Project analysis

- Quantifiable output of the project
- Unit cost analysis
- Employment generation (direct and indirect)
- Impact of delays on project cost and viability

lightly or not addressed at all. This section requires the following information.

For the ten major PC-Is of the WATSAN sector we found that 9 out of ten PC-I had no economic and financial analysis. 5 out of 10 projects had revisions in the PC-Is and two out of ten PC-I had been started before 2008 and are still not completed.

There was one scheme that needed around more than hindered years to complete (See Figure 7.15). This scheme was regarding bulk water supply Murree. It had thin allocation and other reason for its delay was the administrative issues that it

should not be politically motivated. In order to check feasibility of these schemes line department should strictly conduct financial, social, economic & environmental analysis.

- Technical Analysis of the project should show that the proposed design conforms to the best international standards to the maximum extent possible.
- Government of the Punjab should take policy decision to authorize an O & M budget for PHED so that schemes do not become dysfunctional as a result of major

Figure 7.14: Extent of Completion of the On-going Schemes in ADP 2016-2017



Source: Authors illustration using data from ADP
 Notes: Above figures excludes the ODP allocation of Rs. 30,000 million

repair of machinery/pipeline or lack of electricity payments to WAPDA. This would require increases in budgetary allocations

(capital/recurring expenditures) from the provincial/federal government to ensure current level of coverage is sustained.



Agriculture Sector

“Kissan Package” intending to lend financial relief to the small farmer. The relief package is targeted to the poor farmers having 5 acres or less of land, so that they can purchase quality seeds and manure for increased production.

SMART will help improve the sustainability of agricultural production by strengthening the management of irrigation water and help tackle ground water depletion.

Introduction

More than 60 percent population of Punjab resides in rural areas with approximately 45 percent labour force of the province engaged in the agriculture sector⁹. Agriculture sector is not only back bone of the Punjab’s economy but also of the national economy as well. Most of the rural population are dependent on this sector.

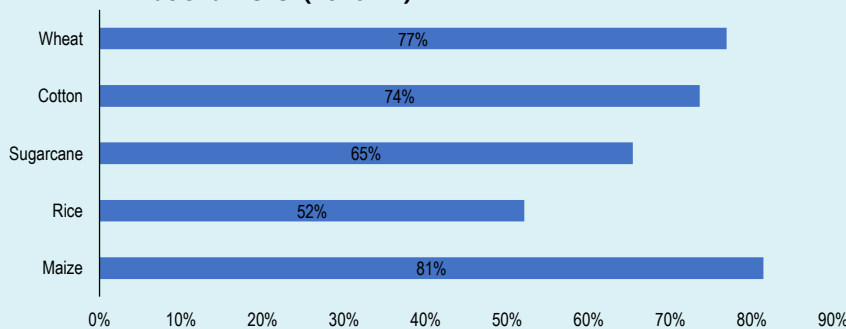
The Punjab province has about 29 percent of the total reported area, 57 percent of the total cultivated area and 69 percent of the total cropped area of Pakistan. It contributes a major share in the agricultural economy of the country by providing about 83 percent of cotton, 80 percent of wheat, 97 percent fine aromatic rice, 63 percent of sugarcane and 51 percent of maize to the national food production. Among fruits, mango accounts for 66 percent, citrus more than 95 percent, guava 82 percent and dates

34 percent of total national production of these fruits¹⁰.

On average, Punjab’s share in major crops is almost seventy percent in the national production¹¹. Figure 8.1 shows that wheat contributes 77 percent of total national production in Punjab. Maize has the big share of production by Punjab in national production, which constitutes 81 percent of total. While cotton, sugarcane and rice share in national production is 74 percent, 65 percent and 52 percent respectively. Punjab province has 49% of Pakistan’s cattle, 65% of the buffaloes, 24% of the sheep, and 37% of the goats. In value of product, it is producing 62% of milk, 43% of beef, 32% of mutton and 75% of poultry of Pakistan. The Province of Punjab, with an area of 50.96 million acres and meagre forestry

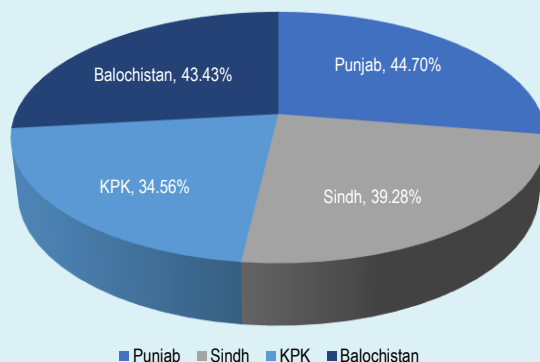
Almost 45 percent labour force of Punjab is engaged in agriculture. Average share in national production by Punjab is 70 percent in five major crops.

Figure 8.1: Punjab's Share in Production of Agriculture Commodities at the National Level (2016-17)



Source: Punjab Development Statistics: Bureau of Statistics, GoPb.

Figure 8.2: Labour Force in Agriculture Sector (%)



Source: Pakistan Bureau of Statistics (Labour Force Surveys)

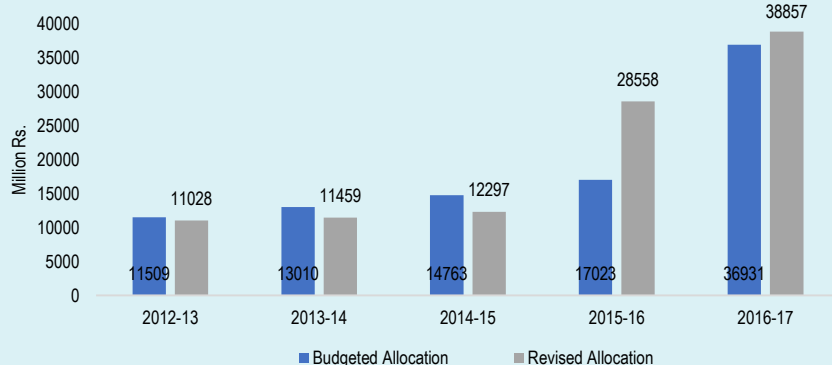
resources over only 1.66 million acres in the public sector. The resources managed by the forest department include compact plantation i.e. Coniferous Forests (144120 acres), Scrub Forests (676336 acres), Range Lands (203321 acres), Irrigated Plantations (424776 acres), Riverain Forests (175702 acres) and deserts (38238 acres). The Punjab has an extensive expanse of fisheries resources with great potential. The major natural resources are Rivers, Canals, Reservoirs, Lakes, Water Logged Areas etc. covering a total area of about 3 million hectares (7.5 million acres). Besides sustainable exploitation of natural resources, the fish culture activities in private sector

against the budgeted size of Rs 36931 million. In 2016-17 size of revised ADP has increased more than three times as compared to 2014-15 and previous years. But revised allocation as percent of budgeted allocation has seen a cut of almost 53 percent as compared to 2015-16. As it was 167.7 percent in 2015-16 and 105.2 percent in 2016-17 (see Figure 8.4).

Sector ADP in Relation to Punjab’s Total Expenditure

Below figure demonstrate that level of ADP of agriculture in Punjab has first increased

Figure 8.3: Trends in the Size of ADP (Budgeted vs Revised)



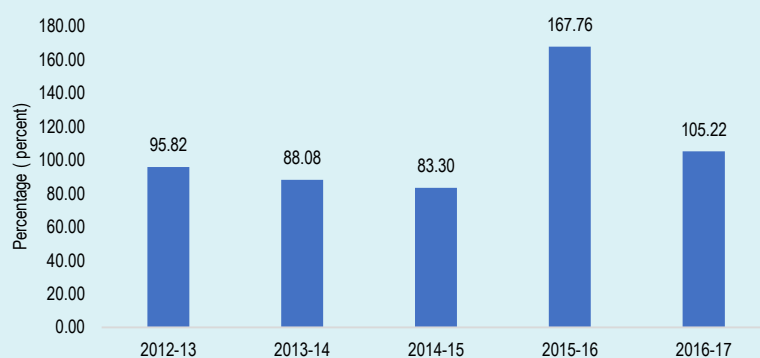
Source: Finance Department, Government of Punjab.

have been considerably increased in the last two decades. At present about 56,540 acres have been brought under fish culture and more than 50% fish is coming from private fish farms.

Trends in Agriculture Sector ADPs

This section analyses the size and trends of ADPs of the agriculture sector in the last five years. Figure 8.3 show that the size of revised ADP in 2016-17 is Rs 38857 million

from 2013-14 to 2016-17 from 2 percent to 4 percent then again decrease to 3 percent (Figure, 8.5). But still Punjab has highest share of ADP in agriculture as compared to other provinces. For 2017-18, Punjab has allocated Rs 21005 million for agriculture, which constitutes 46 percent allocation of all provinces. Sindh has allocated Rs 14509 million, Baluchistan has allocated Rs 8289 million and the least allocation to agriculture

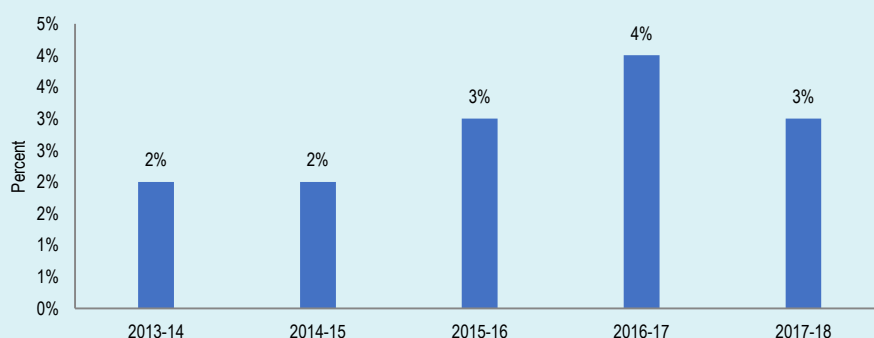
Figure 8.4: Revised Allocation as Percentage of Actual Allocation

Source: Finance Department, Government of Punjab.

sector is made by KPK, which is only Rs 2084 million which make only 5 percent of all provinces.

Panel C of Figure 8.6 indicate that both

and the least allocation is made to food department to about 0.5 billion only. The new and on-going schemes of agriculture sector for the FY 2015-16 can be divided into the following categories.

Figure 8.5: Agriculture Allocation as Percentage of Total Provincial Expenditures

Source: Finance Department, Government of Punjab.

nominal and real ADP are increasing over the time. In 2016-17, both nominal and real ADP are more than three time greater than it was in 2012-13. Size of real ADP is more than half less than nominal ADP in 2016-17.

This section broadly discusses agriculture and all of its subsectors including livestock, fisheries, food, forestry and wildlife. Greater emphasis is placed on agriculture and livestock as they received about seven times more allocation in ADP 2017-18 than the other subsectors combined. The total budgetary allocation for the aforementioned sectors is Rs 34.7 billion. The following pie chart shows the breakdown of this amount among the six subsectors.

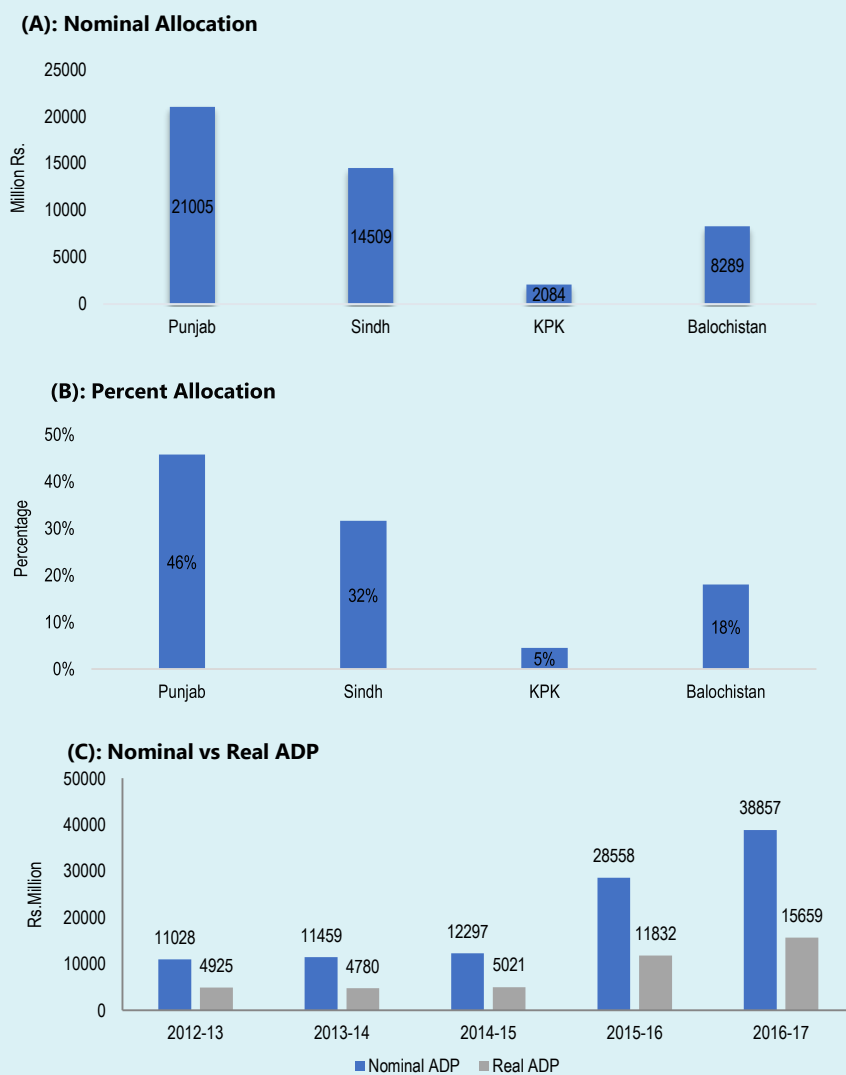
After the agriculture sector, livestock department is getting more shares, about Rs 9.5 billion. Forestry department is allocating with Rs 2 billion, wildlife and fisheries department is allocated sum of Rs 1.6 billion

As shown in the Table 8.1, agricultural education, agriculture research and initiatives of water management dominate the development portfolio in terms of total cost. The highest allocations, however, are made to water management and agriculture extension. Most of funding in FY 2016-17 was provided in form of domestic resources. The department distributed about Rs. 18.2 billion in domestic resources which is about 87 percent of the total budgetary allocation. Figure 8.8 demonstrate the share of foreign aid in original allocation and express expected capital expenditure as percentage of the overall expenses.

Financial Phasing

Comparing budgetary and revised allocations with the remaining cost of projects, figures provide a broader context to analyse the financial phasing of the development

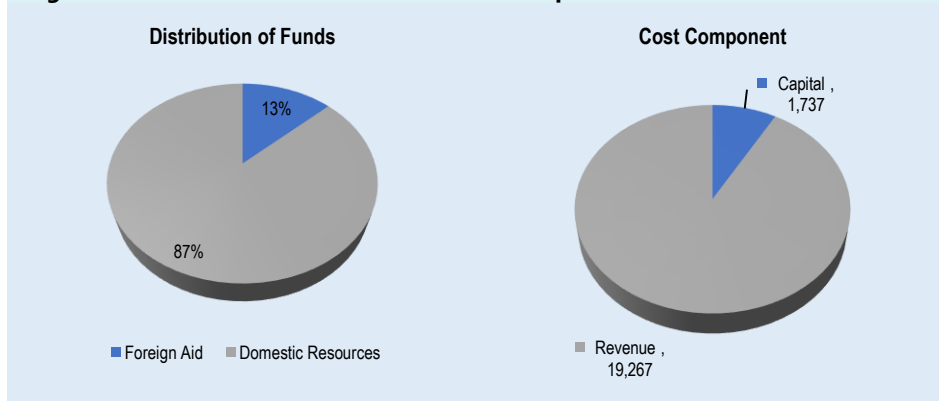
Figure 8.6: Nominal Allocation in ADP of Agriculture by Provinces



Source: Finance Department, Government of Punjab.

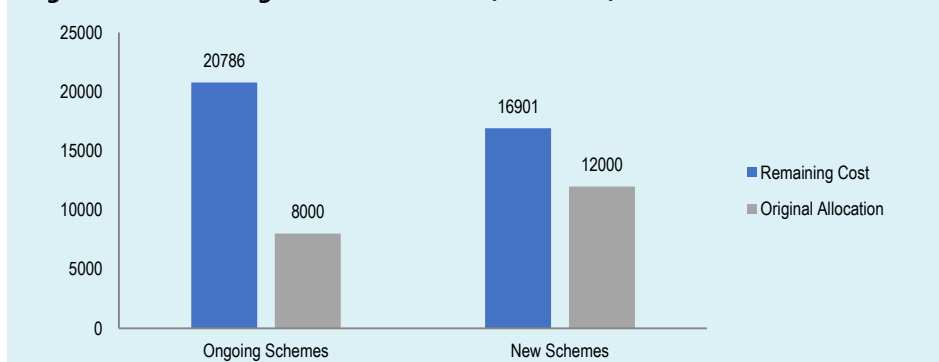
portfolio. The on-going schemes are well funded as financial allocations covered almost half of the finances required for completion of the on-going projects. Estimated cost of on-going schemes for the year 2016-17 was Rs 41710 million out of which 50 percent of expenditures were made till June 2016-17.

Figure 8.8: Distribution of Funds and Cost Component



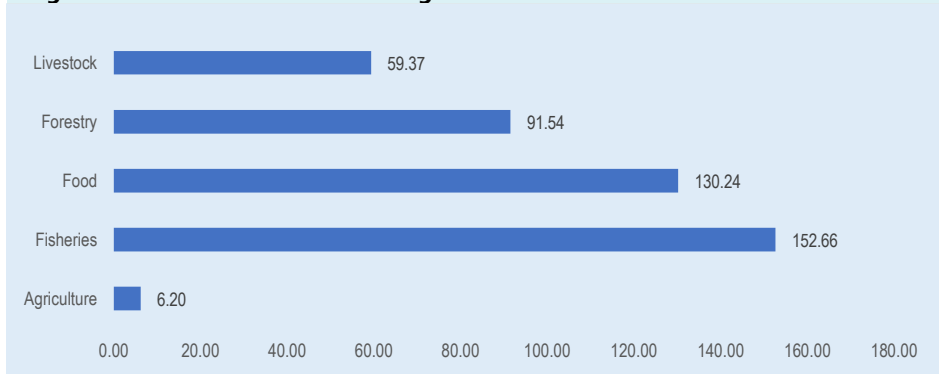
Source: Finance Department, Government of Punjab.

Figure 8.9: Remaining Cost vs Allocation (Rs Million)



Source: Finance Department, Government of Punjab.

Figure 8.10: Utilization as Percentage of Revised Allocation



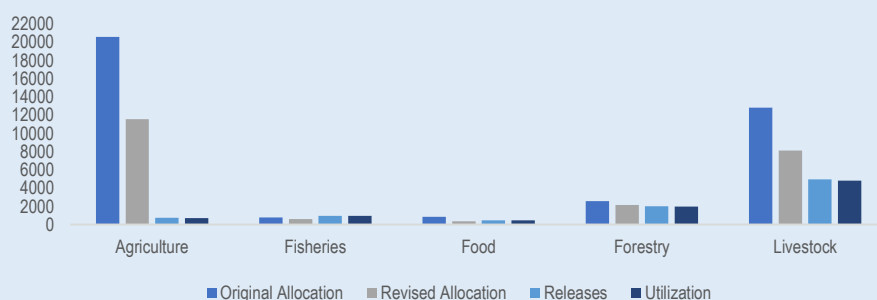
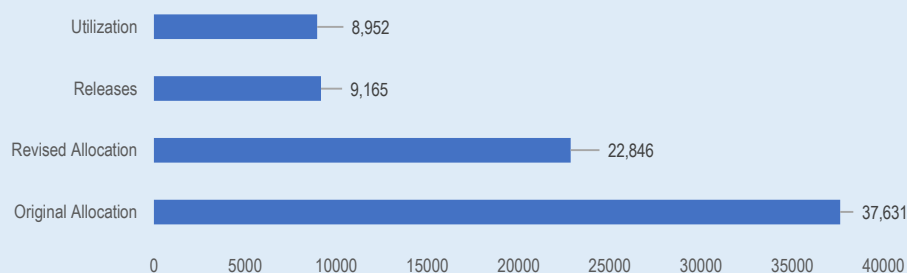
Source: Planning & Development Department, GoPb

Utilization in agriculture sector is very low as percentage of revised allocation than the other sub-departments of agriculture. Only six percent of total revised allocations are utilized in agriculture sector, while forestry and livestock department has utilized 92 percent and 59 percent respectively of their revised allocation. Overall utilization of funds in agriculture sector is 39 percent of revised allocation which is less than half.

The throwforward for agriculture sector has increased by more than 150 percent in FY 2016-17 as compared to 2015-16 as shown in Figure 8.10. This rapid increase should be of concern as it might inflate further and reduce the implementation rate of the development projects.

Table 8.2 show the key indicators of ADP progression in Agriculture, Punjab.

Throwforwards

Figure 8.11: Sectoral Wise Financial Phasing**(A): Financial Phasing****(B): Financial Phasing of Overall Agriculture Sector**

Source: Planning & Development Department, GoPb

Number of schemes, their costs and allocations are evaluated for the recent past five years in this analysis.

schemes is decreased from the mere 60 percent in 2012-13 to 42 percent in 2017-18 up till June 2017.

Table 8.2: Key Indicators of ADP Progression

	2013-14	2014-15	2015-16	2016-17	2017-18
Number of Schemes	15	33	35	40	59
On Going Schemes	6	16	17	25	34
New Schemes	9	17	18	15	25
Percentage New Schemes	60.00	51.52	51.43	37.50	42.37
Cost of New Schemes as percent of Total Cost	2.70	43.63	53.57	28.84	14.61
Cost of On Going Schemes as percent of Total Cost	97.30	293.82	46.43	71.16	73.92
Average cost Per Scheme (Rs Million)	1655.27	924.39	1486.00	1465.30	1417.00
On Going Schemes	4026.50	1660.06	1420.59	1668.40	2053.09
New Schemes	74.44	232.00	1547.78	1126.80	551.92
Average Allocation Per Scheme (Rs Million)	348.67	241.21	303.54	495.00	184.83
On Going Schemes	820.33	432.69	323.65	320.00	234.26
New Schemes	34.22	61.00	284.56	786.67	117.60
Allocation as Proportion to Cost of Schemes	0.21	0.26	0.20	0.34	0.13
On Going Schemes	0.20	0.26	0.23	0.19	0.11
New Schemes	0.46	0.26	0.18	0.70	0.21

Source: Finance Department, Government of Punjab

- Total numbers of on-going and new schemes are increased up to four times in 2017-18 as compared to 2013-14. The rate of change of the on-going and new scheme is 25 and 67 percent respectively. Share of new
- Average cost of the scheme has decreased from Rs 1655 million to Rs 1417 million mainly due to the low average cost of new schemes.
- The average allocation to the schemes has decreased from Rs 349 million to

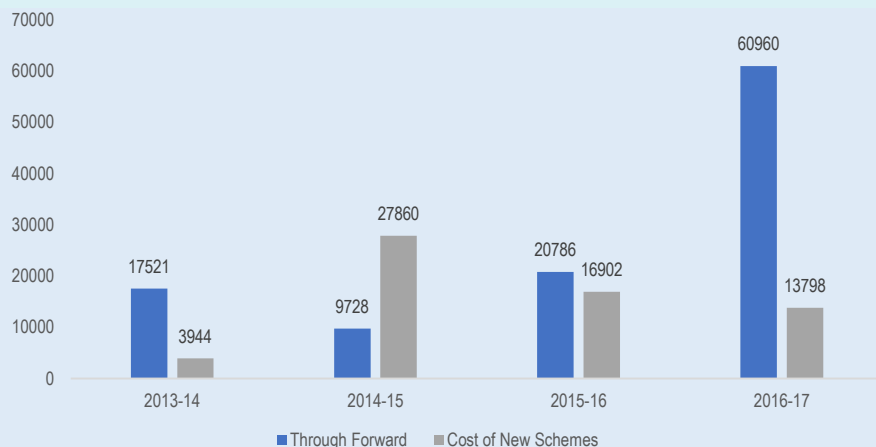
Rs184 million. However, there seen a huge allocation in new schemes during 2016-17 which is more than three times that in 2015-16.

- Overtime, the pattern pointing out to

Analysis of ADP 2016-17

This section provides detail about size of ADP plan 2016-17 for agriculture sector. Size of new schemes, on-going schemes and their percentage distributions are repre-

Figure 8.12: Through Forward and Cost of New Schemes (Rs Million)



Source: Finance Department, Government of Punjab

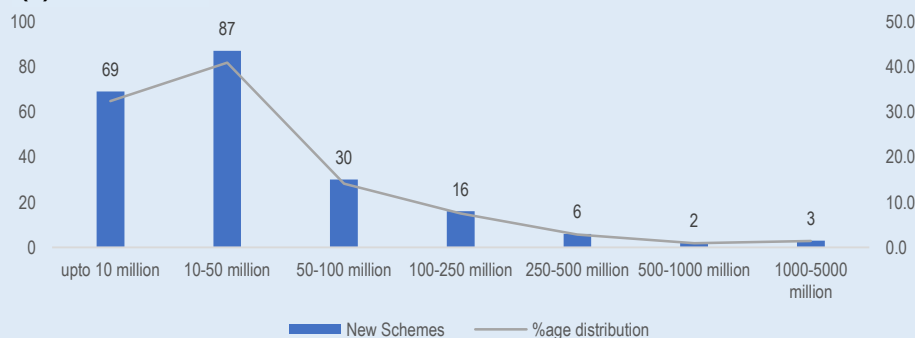
the fact that the allocation to schemes is becoming inverted U-shaped.

- Large increase in the approval of new schemes is making development portfolio immature and unsustainable.

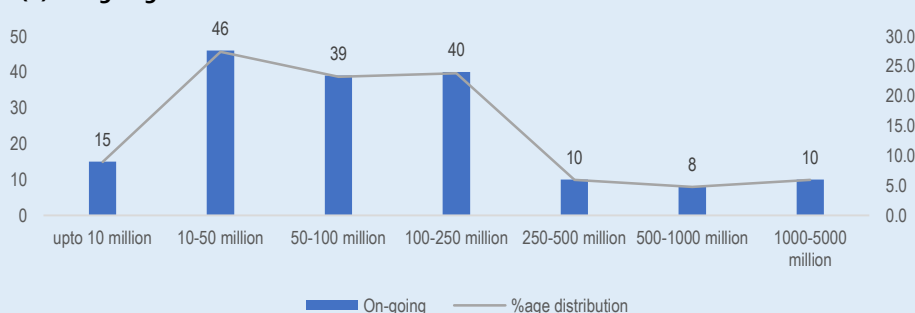
sented in figure 8.13 (panel a and b). similarly, extent of completion of ongoing schemes and their time over-run are presented in figures 8.14 and 8.15 respectively. Out of 213 new schemes, 72 percent of new schemes are of less than 72 million. While only 2 percent proportion is fixed for larger

Figure 8.13: Size and Distribution of Schemes in ADP 2016-17

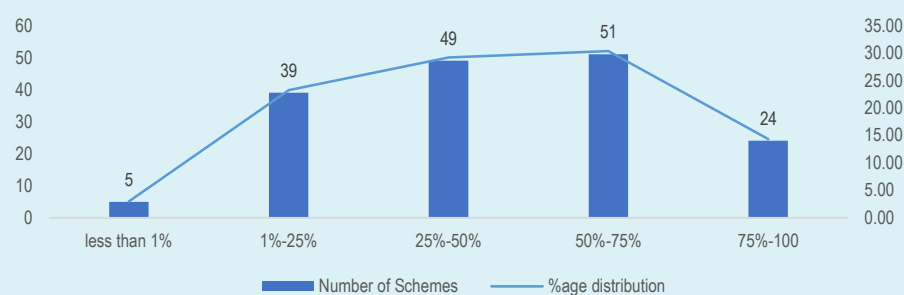
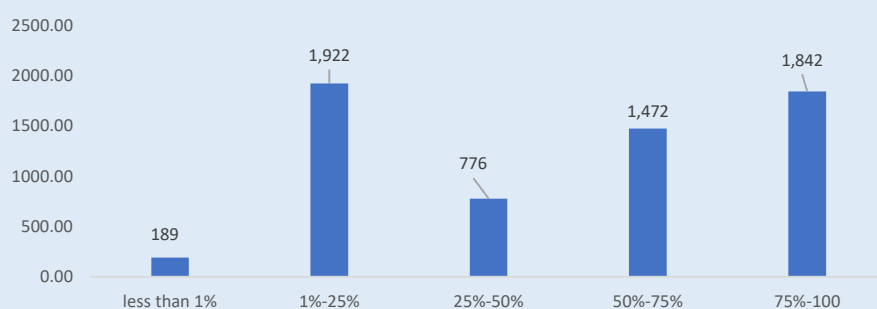
(A): New Schemes



(B): On-going Schemes



Source: Planning & Development Department, GoPb.

Figure 8.14: Completion rate of On-going schemes**(A): Extent of Completion of On-going Schemes****(B): Average cost of Schemes (Rs Million)**

Source: Planning & Development Department, GoPb.

schemes up to the extent of Rs. 500 million or more. In case of on-going-schemes, one-third proportion is fixed for those on-going schemes that are amount less than 50 million. While 50 percent of ongoing schemes are of 50 million to 500 million.

The proportion of large on-going schemes are more than large new schemes. About one-fourth ongoing schemes are still completed only by 25 percent and one third ongoing schemes are completed less than 75 percent but more than 50 percent. Only 24 out of 166 ongoing schemes are completed between the range of 75 percent-100 percent. Average cost of schemes completed by 1 percent-25 percent is Rs 1922.08 million and constitutes the sum of total thirty-nine schemes. Average cost of schemes completed by 50 percent-75 percent is Rs 1472 million while this cost is Rs 1842 million for those schemes, which are completed by 75 percent or more proportion.

One-third ongoing schemes will take up to one year for completion, more than 45 percent on-going schemes are those which will take 1-3 years more for completion while 16 percent of ongoing schemes require 3-10 years more for completion. One scheme with average estimated cost of Rs 3500 million is

estimated to complete by more than 50 years. While the average estimated cost of schemes is Rs 3268 million for those, which will take 3-5 years more for completion. On the other side, new schemes are also approving by government of the Punjab, which can also limit the monitoring and evaluation if on-going schemes would not complete on time.

Agriculture Strategies and ADP

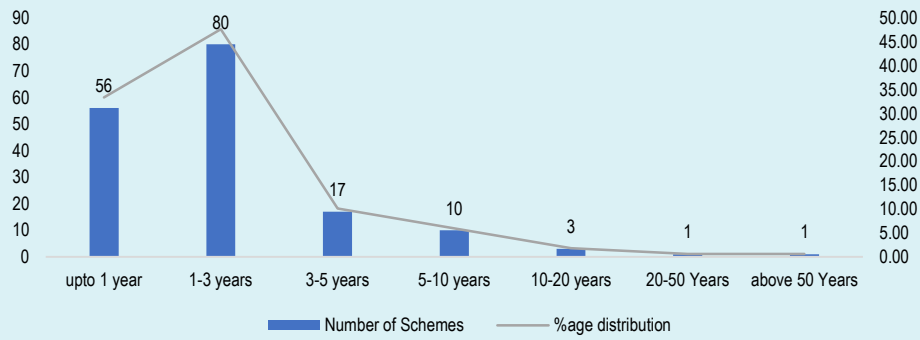
Punjab growth Strategy 2018 and Sectoral Development Plans

Agriculture is a major contributor to the provincial economy, accounting for over 21 percent of its GDP, providing employment for 47 percent of its work force, and a main source of livelihood and sustenance for the poor. National food security hinges upon agriculture. About 80 percent of the country's foreign exchange originates from agriculture, and Punjab contributes over 60 percent in this. It is a main source of raw material for several industries, especially textile, edible oil, rice husking, etc.

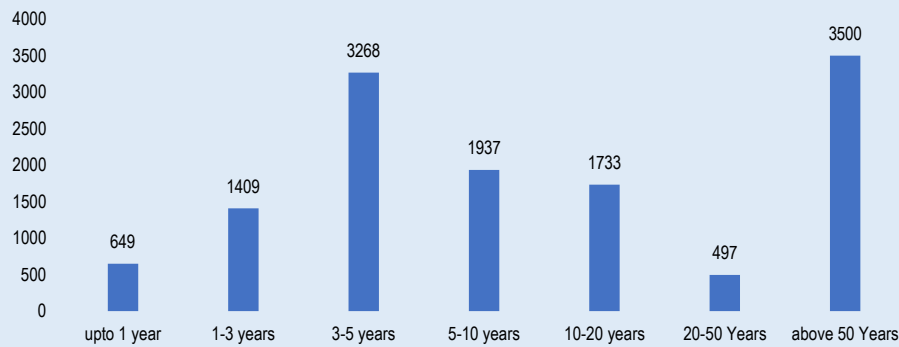
Investment in agriculture in Punjab ensures high return, generates employment in rural areas thus curtails rural-urban

Figure 8.15: Completion time of Schemes

(A). Projected Time that it will Take to Complete the On-going Schemes



(B): Average of Estimated Cost (Rs.Million)



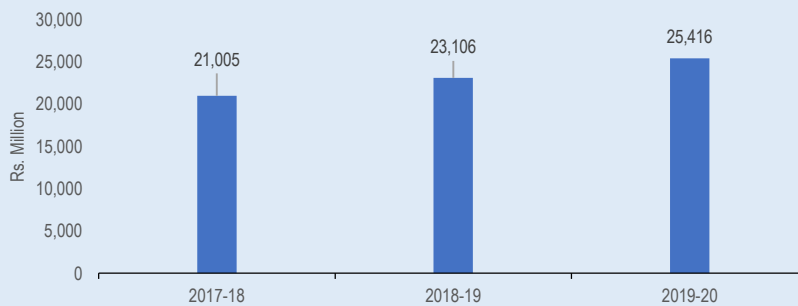
Source: Planning & Development Department, GoPb.

migration, and can be the most effective way to reduce rural poverty. The Punjab government has a mission to develop a

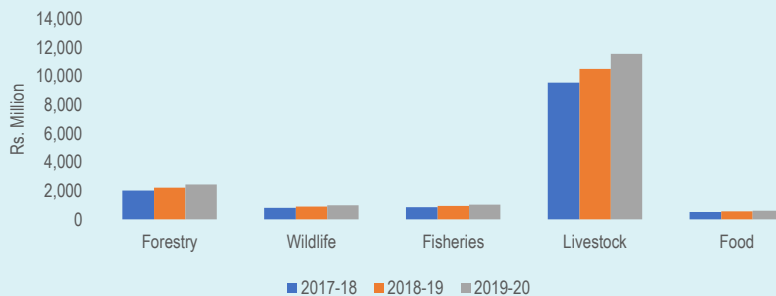
science-based, vibrant and internationally linked agriculture sector that can not only meet the food security challenges but also

Figure 8.16: MFTDF (Agriculture Sector)

(A). MTFD of Overall Agriculture Sector



(B). MTFD of Sub-sectors



Source: Source: Finance Department, Government of Punjab.

compete in domestic as well as in international markets. For this purpose, Punjab government has planned some following development strategies for agriculture.

- Enhancing Productivity for the Improved Livelihood in Rural Areas
- Improving Government's Ability to Meet Food Security Challenges
- Reduce Regional Disparity
- Sustaining Agricultural Resources
- Improving agriculture extension and education
- Better on-farm water management
- *Improving the quality, availability and use of agriculture inputs such as seeds, fertilizers, pesticides, machinery and credit.*

Medium Term Development Framework (MTDF)

Medium term development framework of agriculture sector is presented in figure 8. Allocation for agriculture and its sub-sector is targeted to increase by 21 percent from 2017-18 to 2019-20. For Khadem-e-Punjab Kissan Package, Rs 10000 million are reserved for 2017-18. Punjab Agriculture Department spokesperson stated that the government will be providing subsidy on DAP fertiliser to 52 lakh farmers in Punjab. The subsidy will be provided under the Khadam-e- Punjab Kissan package.

The subsidy will be provided in the form of vouchers which will be sealed in bags of DAP fertiliser. Farmers/stakeholders will type voucher number along with their CNIC number and

send it to 8070 through sms. A verification message will be sent to them and subsequently, the farmer will be able to avail a subsidy of Rs 150 per voucher through mobile cash agents.

A farmer can get subsidy vouchers for up to 20 bags of DAP fertiliser. This subsidy is being provided to all farmers registered under the Kissan package. Unregistered farmers can contact Agriculture Helpline toll-free numbers 0800-15000 & 0800-29000 to register themselves and avail the subsidy scheme.

Agriculture Department spokesman further disclosed that the subsidy scheme will allow a reduction in the cost of production of farmers. DAP fertiliser usage will also help increase per acre yield of crops.¹¹

To achieve the target of medium term development framework, number of new schemes have been increased by 40 percent in 2017-18 as compared to last year.

The medium-term development framework of agriculture sector has set the following targets:

- Increase the supply and quality of Agricultural Crops
- Improve living standards of small and subsistence farmers
- Contribute towards national food security.
- Promote integrated and sustainable use and management of natural resources

Table 8.3: Targets and Achievements by Agriculture Department, Punjab

Targets	Target	Achievements	% Achieved
Improvement of Water courses	1200	1000	83.33
Installation of irrigation system	10000	10000	100.00
Provision of LASER units	2000	3000	150.00
Training Courses on Improved Water Management	150	150	100.00
Rehabilitation of Irrigation Schemes in Non-Canal Command Areas	450	450	100.00
Demonstration of Plots for Enhancing Vegetable Production	312	312	100.00
Demonstration of Plots for Promotion of Pulses Cultivation	100	100	100.00
Import and Cultivation of Olive Plants	337500	250000	74.07
Area to be covered with Olive Plantation	3000	2500	83.33
Rehabilitation / additional lining of already improved watercourses up to 50 percent length (No.)	550	250	45.45

Source: Finance Department, Government of Punjab (2016-17)

¹¹ <https://www.pakistan-today.com.pk/2017/10/17/punjab->

[govt-announces-dap-fertiliser-subsidy-to-52-lakh-farmers/](https://www.pakistan-today.com.pk/2017/10/17/punjab-govt-announces-dap-fertiliser-subsidy-to-52-lakh-farmers/)

- Sufficient market infrastructure to ensure optimal value addition

SMART Project¹²

- SMART project will shift PKR 55 billion i.e, about \$520 million a year is currently spent on inefficient and ineffective subsidies towards ‘SMART’ input subsidies for small farmers, agricultural research, and farmers’ training
- World Bank for modernizing agriculture in Punjab has approved for \$300 million funding.
- Punjab will be provided \$300 million funds to raise incomes of farmers, provide consumers superior quality and safer food at lower prices, create jobs on farms and agribusinesses, and improve the use of irrigation water, under the Strengthening Markets for Agriculture and Rural Transformation (SMART) project of WB.
- WB’s SMART project provides reforms for agriculture and livestock productivity and improve its resilience to climate change and grow agribusiness in Punjab over the next five years.
- “Farming in Punjab has extraordinary potential, however, requires a change in perspective to open development paths. The Government of Punjab is resolved to enable farmers to develop high-yield crops and essentially increment in their lives. The program is assessed to make 350,000 occupations and lift 1.7 million individuals from destitution. The Bank stands prepared to help the Government of Punjab in this undertaking”, said Illango Patchamuthu, World Bank Country Director for Pakistan.
- Additionally, SMART will help to improve the sustainability of agricultural production by firming

up the management of irrigation water and tackle groundwater reduction.

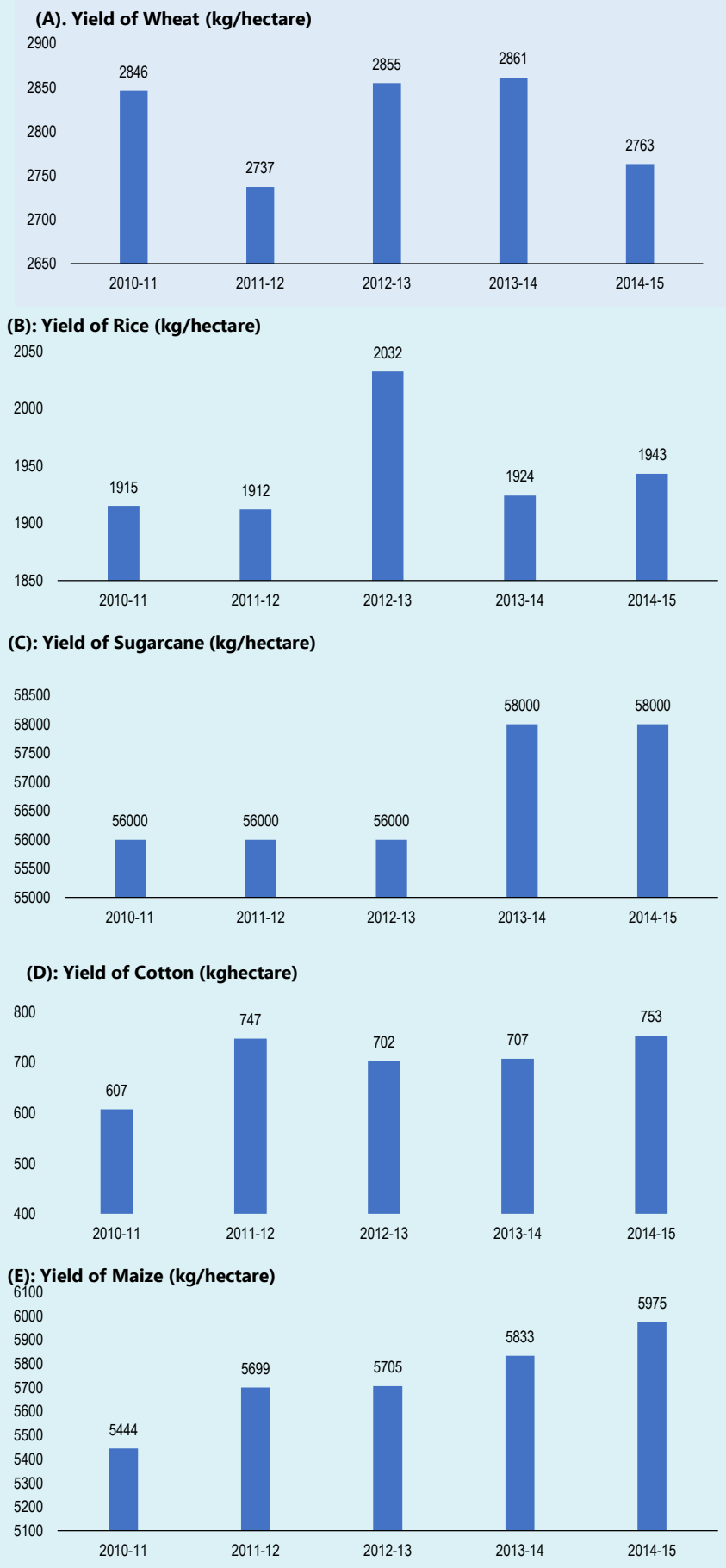
Table 8.3 summarizes some of the targets set by the agriculture department and the degree to which they were achieved (as presented in the ADP 2016-17.

Agriculture Sector Performance

Even though agriculture has always been crucial to Punjab’s economy, recent performance of the sector has not been very encouraging. Between 2010 and 2015, per hectare yield of wheat in Punjab has dropped, whereas the yields of rice and cotton have not shown any significant improvement (Punjab Development Statistics, 2016). The important crops (wheat, rice, sugarcane, maize and cotton) account for 23.85 percent of the value added in overall agriculture and 4.66 percent of GDP. The other crops account for 11.03 percent of the value added in overall agriculture and 2.15 percent of GDP (GOP, 2016-17). Yield of rice, sugarcane and maize has risen by 1.46 percent, 3.57 percent and 9.75 percent in Punjab from 2010-11 to 2014-15. The highest growth rate of yield in kg/hectare is recorded for cotton in Punjab by 25.05 percent during 2010-11 to 2014-15. While yield of wheat growth is negative during the same period and yield of wheat is declined by 2.92 percent in Punjab during the same period.

¹² <https://www.technologytimes.pk/wbs-smart-project-reforming-agriculture-in-punjab/>

Figure 8.17: Yield of major crops in Punjab



Source: Pakistan Bureau of Statistics

Average allocation in on-going scheme and new schemes in past few years is not enough for significant rise in productivity of agriculture sector. In September 2016, the government announced a “Kissan Package” intending to lend financial relief to the small farmer. The relief package is targeted to the poor farmers having 5 acres or less of land, so that they can purchase quality seeds and manure for increased production. Under the program, cash support amounting to a total of 32 billion is aimed to benefit 1.6 million farmers. The relief would be provided through interest-free loans to poor farmers for the 2016-2017 rabi and kharif harvests.

During February 2017, the first tranche of funds was to be distributed to eligible farmers but the program found that it is difficult to identify eligible farmers who are either landless or have small landholdings. This has led to a registration drive which may have beneficial effects in the long-run for rolling out other financial inclusion packages for small farmers.

The World Bank has approved \$300 million to modernize agriculture in Punjab province, Pakistan to raise farmers' incomes, give consumers better quality and safer food at lower prices, create jobs on farms and agribusinesses, and improve the use of irrigation water. The ‘SMART’ (Strengthening Markets for Agriculture and Rural Transformation) project funded by world bank will shift PKR 55 billion (about \$520 million) a year that is currently spent on inefficient and ineffective subsidies towards ‘SMART’ input subsidies for small farmers, agricultural research and farmers' training, and support for high-value and climate-smart agriculture. Additionally, SMART will help improve the sustainability of agricultural production by strengthening the management of irrigation water, and help tackle ground water depletion¹².

Conclusions and Recommendation

Punjab has the highest allocation among all provinces in the allocation of funds to agriculture sector. Revised allocation has increased as a percent of original allocation during the last two years. Most of the funds are released from domestic resources in agriculture sector and utilized on short-term projects. Cost of ongoing-schemes is rising during some past few years due to the delay and less utilization of funds in these schemes. Average allocation of schemes is

relatively low in fiscal year 2017-18 as compared to previous years. This scenario has increased the time over-run of ongoing schemes as well as their estimated costs.

The throw forward for agriculture sector has increased. This rapid increase should be of concern as it might inflate further and reduce the implementation rate of the development projects. Given the inadequate funding for new schemes in FY 2017-18, the department should define and enforce a minimum threshold of financial allocations for on-going and new schemes to ensure their timely completion. In this way average cost per scheme can also be curtail. Moreover, allocation for ongoing schemes is required to be revised as few schemes have longer time over-run.

The productivity of wheat and rice has declined and negative growth rate is recorded for these crops during the last five years. The government need to invest in inputs like seeds, pesticides and irrigation to enhance the productivity of crops. Allocation on water management is needed to increase, as the achievement of rehabilitation / additional lining of already improved watercourses is only 50 percent of the target. This will also improve productivity of crops. Low water charges for canal irrigation, limited water storage capacity, and excessive-use of groundwater are the major challenges for the policy makers in Pakistan. Therefore, an appropriate pricing strategy for canal water and regulated extraction of groundwater is required to address the problem of water scarcity and water use efficiency in the country.



ROADS INFRASTRUCTURE

CPEC is intended to rapidly modernize Pakistani infrastructure and strengthen its economy by the construction of modern transportation networks, numerous energy projects, and special economic zones.

One major issue that has led to the degradation of public assets is the persistent negligence of the government when it comes to Asset Management.

An increase in the number of new schemes will likely aggravate the throw-forward issue which would lead to bottlenecks delays in project completion and the benefits that are to accrue to society.

Sectoral Importance and Priorities

Roads are the primary mode of transport in Pakistan, with its total share being greater than 90% for both freight movement and travel. This makes road-networks the backbone of Punjab's economy. A well-developed, modern road infrastructure in Punjab is integral for the economic development of the region. Strategically developed road networks, facilitate the transportation of goods, reduce traffic stress, increase labour mobility, promote tourism, reduce regional disparities and increase access to emergency medical facilities. These factors are crucial for the socio-economic development of the province.

The sectoral priorities of the Government of The Punjab (see Box 9.1) show that

the Government is cognizant of the importance of the road sector to the economy and the problems that have plagued the sector.

The next step for the government is to identify strategies that can allow them to achieve these sectoral objectives most efficiently. However, the government does not have a stated policy for identification and prioritization of the most-beneficial strategy/schemes for achieving its sectoral objectives and this compromises the efficiency of the process.

Given the importance of roads to the provincial economy, the government must formulate and follow a clear strategy that allocates scarce resources to projects, that provide the greatest social and economic

Box 9.1: Sectoral Priorities for the Road Sector

According to the ADP 2016-17, the following are the priorities of the road sector:

- Preparing an Assets Management Plan for the provincial road sector and undertaking planned rehabilitation of roads that have outlived their design life.
- Construction of missing road links.
- Developing province-wide secondary arteries (covering north-south and east-west corridors) linking national motorways / trade corridors to foster economic opportunities via meeting expanding domestic and international travel and trade demands.
- Improving average road densities to achieve optimal traffic density levels in consonance with increasing transportation requirements and targeted economic growth in the province.
- Implementing initiatives to improve road safety and axle-load conditions to achieve substantial reduction in road accidents and avert premature road distress

Source: ADP 2016-2017.

benefits to the province. A clear plan is required for asset management and expansion.

Asset management implies the upgradation, maintenance and rehabilitation of existing road network. Research has shown that the upgradation of the quality of a road-network alone can have significant economic benefits, such as increase in trade-flows (Shephard and Wilson, 2007) and reduction in the frequency of accidents. The Government of the Punjab has stated in its sectoral objectives that they aim to prepare such an Asset Management Plan, however the progress on its preparation has been slow.

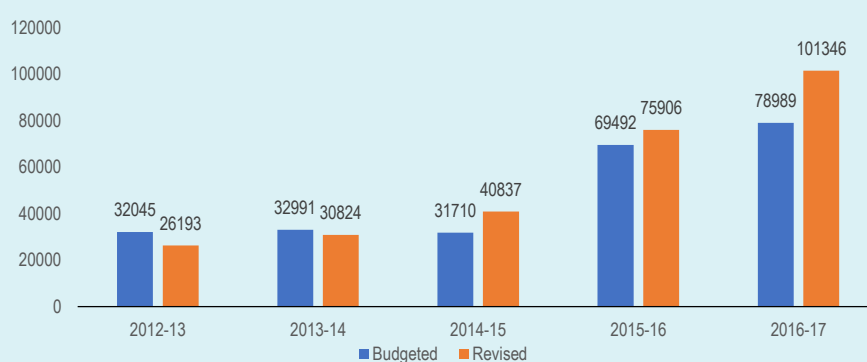
Trends in Roads Sector ADPs

The Figure 9.1 above shows the ADP allocations to the road sector over the years. Apart from a small dip in 2014-2015, the budgeted allocation has increased in all years. In 2015-2016, there was a sharp increase, with the budgeted allocation more than doubling from the previous year. One reason for the sharp increase in 2014-2015 was the introduction of the Khadim-e-Punjab Rural Road Programme (KPRRP) programme phases I and II. The budgeted ADP in 2016-2017 is Rs 78,989 million, which is greater than the amount for any of the previous years. The ADP 2016-2017 in-

allocations have followed a similar trend like the budgeted allocations. Since, 2014-2015 the revised allocations have been greater than budgeted allocations, indicating that most planned schemes have been completed and some new schemes have also been introduced during these years. The gap between the budgeted and revised allocation has widened significantly in recent years, which is not a very positive sign. Although it reflects that all planned expenditure is being carried out, the increasing gap to a certain degree also indicates inefficient planning or addition of schemes on ad-hoc basis.

The size of throw-forward has increased over the years. The total throw-forward for ADP 2016-2017 was Rs 56,581 million compared to only Rs 20,962 million in ADP 2012-13. The main reason for increase over the years is that the Government has significantly increased the number of new schemes over the years. New schemes are allocated meagre amounts from their total cost in the initial years, leading to large amounts going to throw-forwards. In ADP 2012-13, there were only 21 new schemes compared to 457 new-schemes in ADP 2016-2017. Without a strategy to deal with such a rapidly inflating throw forward, the backlog of schemes can start increasing due to thin funding and may

Figure 9.1: Trends in the Size of Road Sector ADPs (Rs Million)



Source: Finance Department, Government of the Punjab

cludes the phase III and IV of the KPRRP as its most major scheme in terms of cost.

become unmanageable. The graph on the

Budgeted vs Revised ADPs

Figure 9.1 also shows trends of the revised ADP during the same period. The revised

Table 9.1: Key Indicators of the ADP

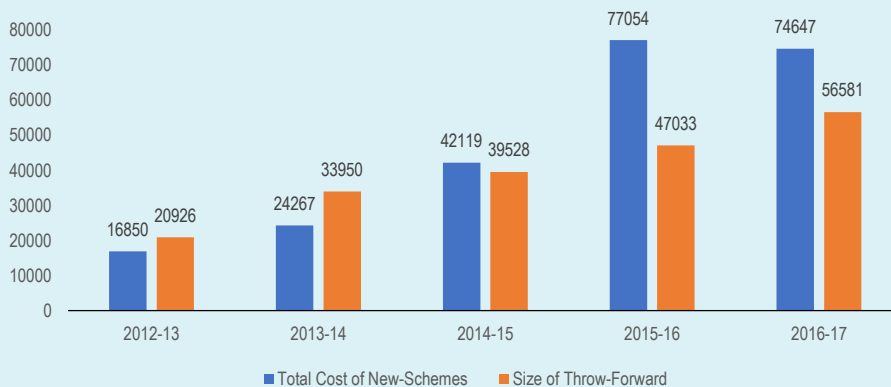
	2012-13	2013-14	2014-15	2015-16	2016-17
Number of Schemes					
On-Going Schemes	182	183	276	415	720
New Schemes	21	31	190	436	457
Percentage New Schemes	10	14	41	51	39
Cost of New Schemes as % of Total Cost	30	33	41	46	44
Average Cost per Scheme (Rs Million)	543	805	418	338	250
On-Going Schemes	513	809	553	507	304
New Schemes	802	783	222	177	163
Average Allocation per Scheme (Rs Million)	158	136	68	82	67
On-Going Schemes	100	84	79	107	56
New Schemes	662	447	52	57	85
Allocation as proportion to Cost of Schemes (%)	57	40	31	41	46
On-Going Schemes (%)	46	31	36	49	41
New Schemes (%)	83	57	23	32	52
Allocative Efficiency of the Sectoral ADP*					
On-Going Schemes	57	46	69	64	51
New Schemes	49	54	31	36	49

Source: Planning and Development Department, Government of the Punjab.

* Percentage of the total sectoral allocation going to on-going schemes and new schemes.

right side shows the total-cost of new schemes. The total cost has understandably increased over the years along with the increase in the number of schemes, there is a small dip in ADP 2016-17 despite an increase in the total number of new schemes, this is due to a shift in focus towards smaller projects.

72 percent of the total revision in the ADP is due to 5 schemes, with Khadim-e-Punjab Rural Road Support Programme Phase III and IV alone accounting for 32 percent of the revision. This is a good sign, had the revisions been more evenly distributed across multiple projects it would have reflected inefficiency in planning and designing of the

Figure 9.2: Size of Throw-forward and Cost of New Schemes (Rs Millions)

Source: Finance Department, Government of the Punjab

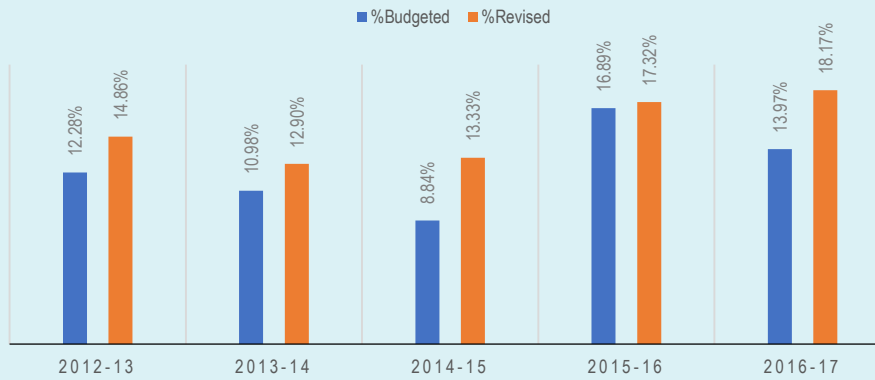
The graph above shows ADP allocations to the road sector as a percentage of the total ADP. The revised allocation for the year 2016-2017 is greater than the allocations in previous years, showing the commitment and focus of the Government of the Punjab on improving the road sector.

initial ADP allocations. The other four schemes with revision are:

- Construction of bridge over river Chanab at Shahbaz pur to Connect District Gujrat with District Sialkot. (11%)
- Dualization of Road from Bahawalpur to Hasilpur Length 77.25Km,

Table 9.1 shows a summary of key indicators of the road sector ADP. There is clear increase in the number of schemes for the road-sector over the years, whereas the average cost-per scheme has gone down considerably. This implies that the focus of the Government overtime has shifted from

Figure 9.3: Revised Sectoral ADP as % of Total ADP



Source: Finance Department, Government of the Punjab

- District Bahawalpur. (11%)
- Dualization of Sheikhpura-Gujranwala road. (10%)
- Construction of Flyover on G.T Road at Aziz Road Cross Gujranwala. (7%)
- Dualization of Muridke - Narowal road, from km 00 to km 42.00 Length 42.0 Kms. (7%)

mega-projects to more widely spread smaller projects. This could be due to the government being focused on timely completion of schemes since long term projects incur increased costs due to inflation and other sources. This is a positive sign, smaller projects that are more widespread would help bring a more evenly distributed development in the province and would reduce cost overruns. The Allocative efficiency of new schemes has also improved in the last

Table 9.2: District Rankings by Number of Schemes

Rank	District	No of Schemes	Rank	District	No of Schemes
1	Faisalabad	45	19	Bhakkar	7
2	Kasur	36	20	Jhelum	7
3	Sargodha	32	21	Sialkot	7
4	Lahore	31	22	Bahawalnagar	7
5	Multan	30	23	Nankana Sahib	6
6	Sheikhpura	26	24	Jhang	6
7	Muzaffargarh	26	25	Narowal	6
8	Bahawalpur	20	26	Mandi Bahauddin	6
9	Rahim yar Khan	16	27	Rajanpur	5
10	Gujranwala	14	28	Lodhran	5
11	Vehari	13	29	Layyah	4
12	Dera Ghazi Khan	12	30	Mianwali	4
13	Okara	12	31	Gujrat	4
14	Chakwal	12	32	Rawalpindi	4
15	Sahiwal	11	33	Chiniot	3
16	Khushab	9	34	Attock	3
17	Khanewal	8	35	Pakpattan	3
18	Toba Tek Singh	8	36	Hafizabad	2

Source: Planning and Development Department, Government of the Punjab.

*Excluding 3 schemes for multiple districts

three years, showing that a greater percentage of the budget is now being allocated for new-projects. This is another positive development, showing Government’s commitment towards improving the road sector.

existing road assets. The overwhelming schemes were either rehabilitation/widening or dualization of existing roads. The major schemes undertaken in the allocation include the phases 3 and 4 of the KPRRP

Box 9.2: Sectoral Priorities for the Road Sector

The major targets that were set out for the FY 2016-17 are as follows.

- Completion of Schemes pertaining to Khadam-e-Punjab Rural Roads Program Phase-III and Phase IV.
- Up-gradation of Road Research and Material Testing Institute and Building Research Stations.
- Construction of Access Road from Lahore – Sheikhpura – Faisalabad Road to Bhikki Power Plant
- Construction of Metalled road from Sheikhpura Interchange (M-2) to QAAP along Motorway of length 3.90 Km
- Construction of Road from Mian Wala Ghat (Jamber – Chunian Road) to Balloki Power Plant and Qadirabad Power Plant of length 6.00 Km
- Construction of Metalled road from Chichoki Malian Railway crossing to QAAP near Bamban Kalan of length 3.30 Km.
- Widening/Improvement of Road from Pattoki to Kanganpur of length 54.80 Km
- Widening/Improvement of Rawalpindi Murree Kashmir Road from Lower topa to Kohala of length 32 Km

Source: ADP 2016-2017.

Analysis of ADP 2016-17

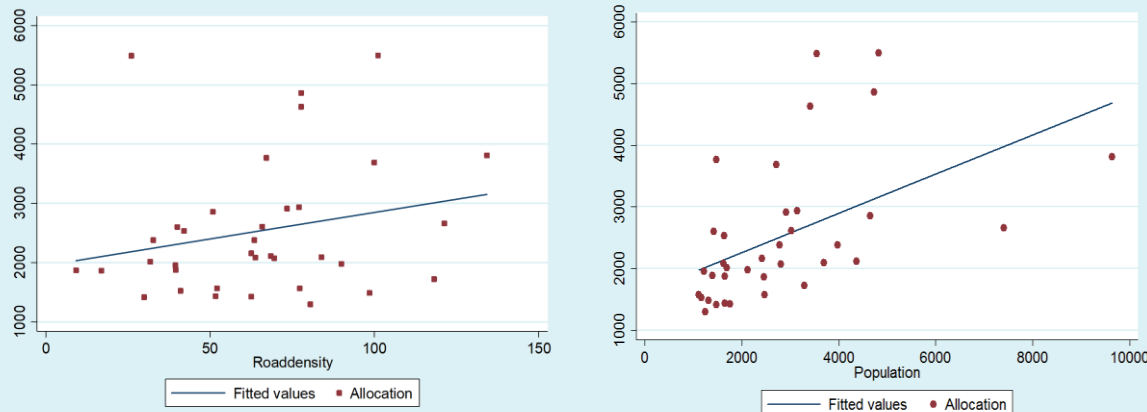
The strategy in the ADP this year was to focus on consolidation and maintenance of

which have been allocated Rs 27,000 million this year. Other major schemes include rehabilitation of Road from Pattoki to Kan-

Figure 9.4: District-wise Revised-ADP Allocation



Figure 9.5:



Source: Planning and Development Department, Government of the Punjab.

ganpur with a length of 54.80 Km and Rawalpindi Murree Kashmir Road from Lower topa to Kohala with a length of 32 Km. See Box 9.2 below for the major targets set out for financial year 2016-17.

The ADP 2016-17 also includes projects to cater the need of the China-Pakistan Economic Corridor (CPEC). There are major road projects that are already underway and some that are planned, these include the Peshawar-Karachi Motorway (Multan-Sukkur Section) which costs 2,980(US\$ M), the Karakoram Highway phase 2 (Thakot - Havelian Section) costing 1,366 (US\$ M) and KKH Thakot-Raikot N35 remaining portion (136 Km) with a cost of 719.8 (US\$

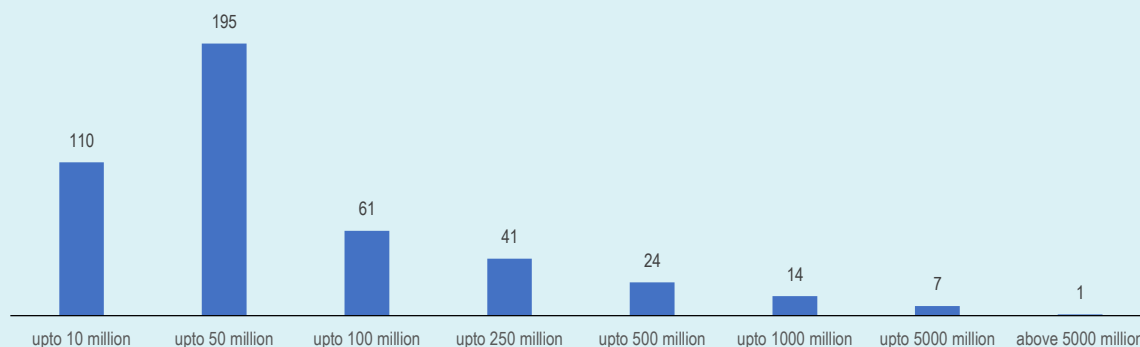
major districts that are lacking behind in infrastructure development are the southern and western districts, most of the allocation apart from Bahawalpur is in the northern and central districts. However, the policy decisions always include trade-offs and, in this case, it is between development equality and population need. This issue is discussed in further detail later in the report.

In terms of the number of new schemes, Faisalabad has the majority share with 45 new schemes for the year 2016-2017. Hafizabad is the most deprived with only 2 new schemes.

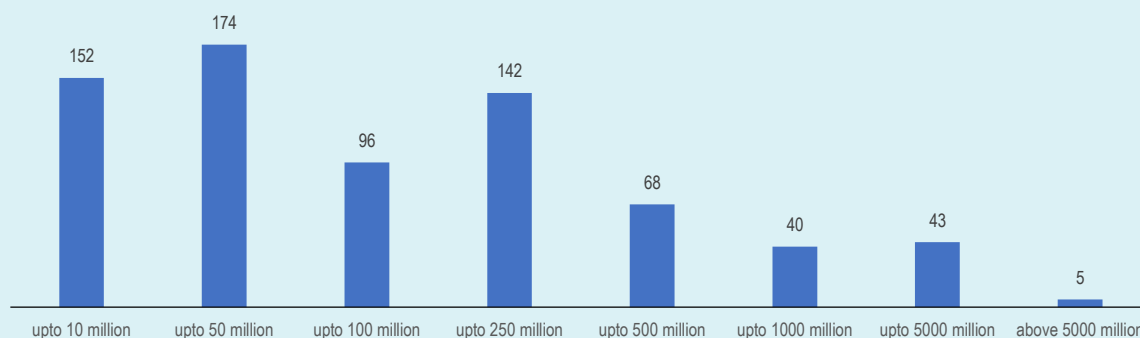
The scatter diagrams above were used

Figure 9.6: Total number of new schemes by project cost (Rupees)

B. New Schemes



B. Ongoing Schemes



Source: Planning and Development Department, Government of the Punjab.

M).

Distribution across Districts

If we exclude the 37% of revised ADP schemes that are distributed across multiple districts i.e. KPRRP, the graph above shows that Gujranwala and Bahawalpur received the bulk of ADP allocation. The districts who received the least amount of allocation were Chiniot, Bhakkar, and Pakpattan. The

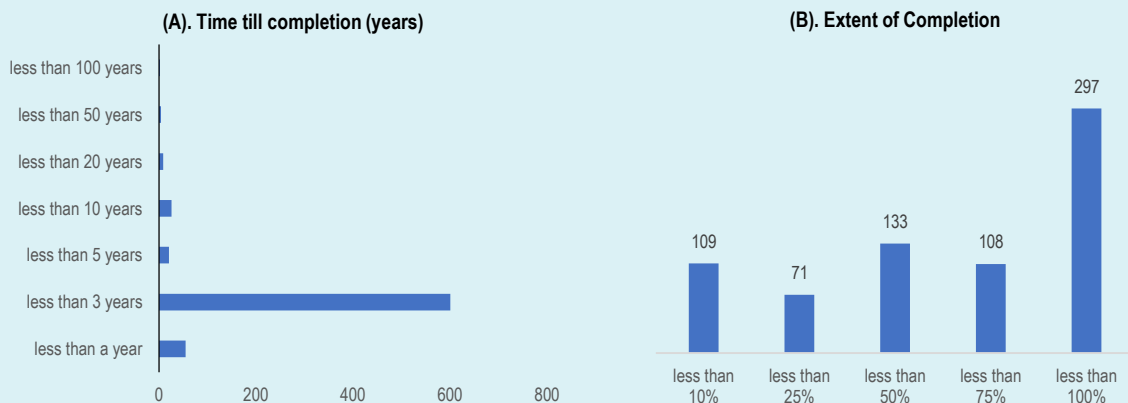
to analyse the distribution of ADP across districts. The right graph shows ADP allocation against the population of the district and the left graph shows ADP allocation against the road density. It can be deduced from the graphs that there is some positive association of allocation of ADP with the population and road density of the district. However, the relationship is far from precise and does not show any conclusive link.

Size Distribution and Extent of Completion of the Schemes in ADP 2016-17

The graph above shows the size distribution of cost for the new schemes in ADP 2016-17. Most of the schemes are low-cost, with 305 schemes costing less than 50 million rupees. The distribution for on-going schemes

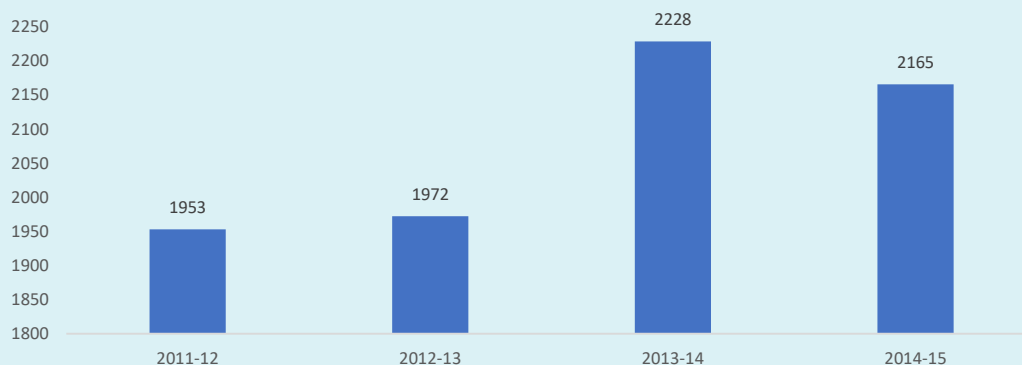
shows that almost 600 of the schemes are projected to be completed within the next 3 years. This implies that the road infrastructure in Punjab is likely to get major uplift in the next 3 years, providing opportunities for development and growth of the province.

Figure 9.7: Extent of Completion and Time till Completion of the On-going Schemes



Source: Planning and Development Department, Government of the Punjab.

Figure 9.8: Expenditure on Construction and Maintenance of Roads Maintained by Punjab Highway Department (Rs Million)



Source: Punjab Development Statistics 2016, Bureau of Statistics, Government of the Punjab.

is slightly more even. Although most of the on-going schemes are also low-cost i.e. below 100 million rupees, there are many schemes above 250 million. The graphs below show that majority of these on-going schemes are near completion i.e. 297 schemes are more than 75 percent complete. This implies that the increasing throw-forwards have not yet acted as bottlenecks for the completion of the schemes that the Government has undertaken in the last 5 years.

In terms of the projected time of completion of the schemes, the graph above

Challenges and the Way-Forward

The Punjab Growth Strategy 2018 does not make a special mention of a specific road strategy, however its focus on the development of industries, cities, providing market access and labour mobility involves the development of resilient road network that can complement the government’s policies in Punjab.

The major focus in the road sector should be on schemes that contribute to the connectivity and accessibility to encourage the movement of goods and labour that will

contribute to the development of different regions of Punjab, especially the less developed regions. For these reasons, the government of Punjab has set out certain guidelines in the Medium-Term Development Framework for the Road sector, these include the development of province wide secondary arteries that will link highways and trade corridors to increase economic opportunities, the connectivity of strategic economic assets, and the development, rehabilitation of urban roads in mega cities to cope with the rising demand.

The CPEC is one of the key issues that the policymakers simply cannot ignore when developing the road strategy at the provincial level. They must ensure an ample degree of accessibility and connectivity among major industrial zones, strategic assets and urban hubs so the province can fully capitalize on the opportunities that are presented through the implementation of the corridor.

The absence of such a strategy would make it an extremely onerous task to prioritize the development of new roads and missing links to make use of potential synergies that could greatly improve the development of the province.

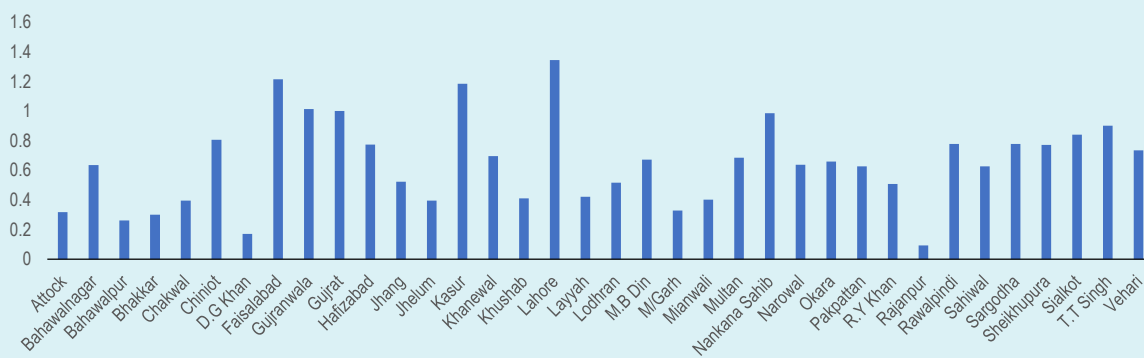
Road Management

Among the major challenges faced by the road sector is the inadequate and ill-timed maintenance expenditure. Although appropriate and timely O&M reduces the life-cycle cost and increases the utility of roads, for many years now, the sector has not received the required funds for the appropriate maintenance and operation of assets. This build-up of poorly maintained roads can create a financial burden for the Government and heavily penalize the development budget in the form of rehabilitation and improvement projects.

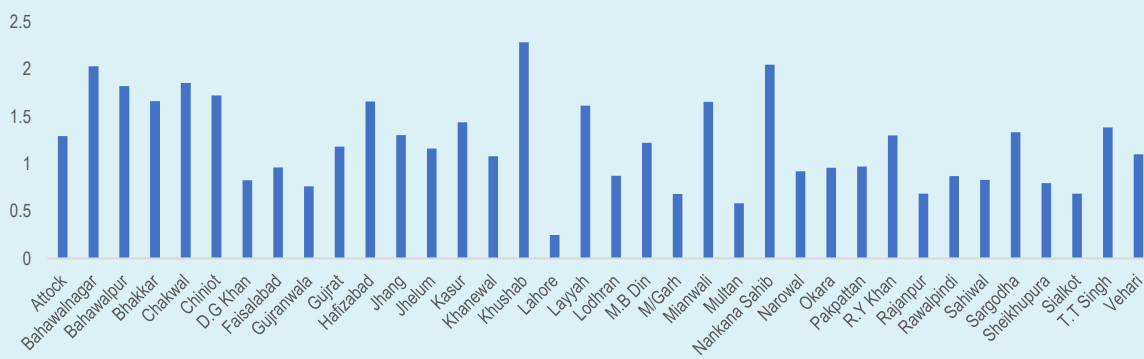
A major cause of this deterioration is the inefficient mechanism to delegate funds for the O&M of roads. The figure below shows the expenditure on road maintenance

Figure 9.9: Road Density in Punjab at the District Level

A. Road Density



B. Road Density by Population



Source: Communication and Works Department, virtual length of the road taken in Km Pakistan Bureau of Statistics, total geographical area of each district.

for the past four years by the Highway Department, Punjab. Evidently, there has been a major increase in the maintenance expenses for the year 2013-14 and has continued however this is for roads under the Highway Department of Punjab and might now depict the overall scenario in Punjab. The increase has been overdue however it might still be inadequate considering the increase in the development of new road systems in the Punjab.

The parameters used to estimate required O&M costs are not precisely defined and lack certain dimensions rendering the calculations unrealistic and biased. Given the massive investment of the Government of Punjab in KPRRP, the sector should conduct a meticulous estimation of O&M to optimize the life-cycle of reconstructed/rehabilitated roads and ascertain the anticipated socio-economic impact of the program. An example of that is the fact that Most of the PC-1 documents assume uniform O&M expenditures over the life of project.

Another obstacle is the incomplete information regarding the road condition in Punjab. Although some *condition surveys* were previously conducted, an up-to-date data base for such information doesn't exist. The lack or absence of these specifications can make the process of project selection and project appraisal sub-optimal. Addressing this structural problem of road sector is extremely important as it will significantly increase the effectiveness of the decision-making process.

Road Density and the Regional Imbalance

The issue of regional imbalances is another political issue that does need addressing. The graph below presents the road densities according to geographical area, and it is evident that Punjab's southern districts that include Bahawalpur, D.G Khan, Rajanpur and the western districts which include Mianwali and Khushab are underdeveloped compared to the rest of the province especially northern and central Punjab.

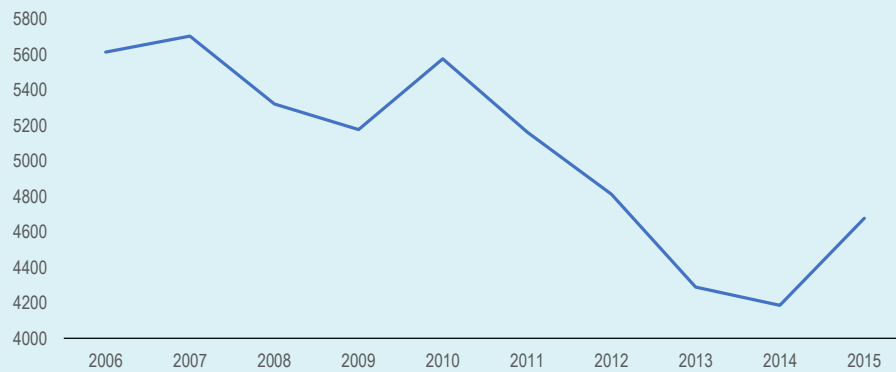
This issue has generally been ignored to the point that it has started to become a political issue as the regional inequality has widened over the years. It needs to be remembered that the inequality is in both the

quantity and quality of the infrastructure and both need to be addressed for Punjab to overcome its regional inequalities and to achieve higher levels of economic growth.

However, the issue has a flip side that also needs to be considered. The graph below is the Road density of each district according to the total population and this shows that the Lahore and Faisalabad have much lower densities when compared to Khushab, Mianwali and Bahawalpur. This raises the debate of where to invest? what should be given priority, regional inequality or distribution according to population? This is more of a debate that policy makers should invest their thoughts and experience into and come up with better development strategy that addresses these issues while considering all the benefits and costs.

Axle Load Management

Another area of concern which closely relates to the expected life of newly constructed and existing roads is the axle-load management. In several developing countries, trucks carrying load in excess of legal limits have catalyzed the deterioration of roads and are largely responsible for their poor condition as the roads are designed to withstand only a certain number of standard axle load repetitions. Whether transporting agricultural produce or manufactured goods, overloading is a ubiquitous problem in Punjab. Given the high percentage of arable land in Punjab and roads being the only medium to transport the agricultural produce to markets and industries, the rural roads are highly prone to deterioration due to overloading.

Figure 9.10: Number of Accidents by Year

Source: Punjab Development Statistics 2016, Bureau of Statistics, Government of the Punjab.

The ADP 2016-17 contained a project which proposed the establishment of weighing stations spread across the province to address the issue. However, establishment of a few fixed weighing stations in selected districts is perhaps not the most effective approach to deal with this persisting problem. It might address the problem on some selected routes but presuming it to make any significant impact on axle load is perhaps far-fetched. The Government should define parameters to assess the effectiveness of this project and make amendments to the plan given the level of success that is achieved by the proposed model.

Modal Imbalance

The imbalance of usage among various modes of transportation has been overburdening the road sector for many years. In most countries, it is the railway that bears the brunt of goods transported because of its volume, cost and time advantages over other modes of transport. However, in Pakistan it is the road system that has taken over from rail as the “backbone” of connectivity and transportation of goods which in turn puts excessive burden on the road infrastructure both in terms of the congestion and the infrastructure’s depreciation.

Given the growth rate of the overall economy and particularly the industrial sector for the past five years, it is reasonable to assume that this deviation of traffic away from railway has, among other factors, aggravated the condition of the road sector.

The rail system must be improved to ease that burden and though it shows some signs of recovery its share is well below what it used to be a few years back. The

government should consider the benefits to the road infrastructure through the traffic that can potentially be diverted by improving the railway sector.

Policy Recommendations

Firstly, there is a need to collect and analyse data for moving towards evidence-based decision making and evaluating the performance of the sector. In absence of reliable data, it is extremely difficult to gauge the performance of the sector and analyse the progress of the sector towards achieving its objectives.

Data availability is a major issue that makes a move towards data-backed asset management a difficult task. There is no central authority that can provide reliable up-to-date data on road performance indicators across the province. The limited data that is available, is also plagued with issues of reliability. An example of the stark contradictions in provincial data is the data on road-accidents. According to the Punjab Development Statistics 2016, the number of road accidents in Punjab have declined over the years, as shown in the graph below.

The total number of accidents were only 4,677 in 2015 for the entire province. In contrast, the Punjab Emergency Services (1122) reported 229,370 accidents in the year 2015, 49 times more than what Punjab Bureau of Statistics reported. Reliability issues make the decision-makers sceptical of moving toward evidence-based decision making. Moreover,

- There should a clear-cut strategy of the government at every level of allocation of the ADP. At present, there is no visible pattern in the allocation at the district level whether they allocate budgets to the district with respect to the population, the existing road density, or any other criterion.
- The gap between the budget allocation and the revised one in the ADP has increased over time which shows lack of deliberation and thought during the formulation of the road sector ADP. A uniform procedure is required for the selection of road projects.
- During the formulation, the government should focus more on the ongoing schemes rather than new schemes to ensure the sustainability as higher throw forwards will create a burden on the allocation of the ADP and the development of the province.
- It has been observed during the analysis and our past experiences that most of the PC-Is were not aligned with the guidelines of the Planning Commission of Pakistan. So, there is a need to rectify the situation and to ensure uniformity by standardizing quality which will help the relevant authorities during the appraisal of projects.
- The Punjab growth strategy 2018 mentions the importance of urbanization and the rural-urban migration phenomena and how they can lead to economic growth. The development of road infrastructure will hasten the migration as more opportunities will arise and the government must prepare to meet the rising demands.



WOMEN DEVELOPMENT SECTOR

Introduction

The role of women is important for progress of our country. Punjab government is striving to economically empower women by providing equal opportunities, promoting female education, fixing quotas for women in services and establishing women hostels, day care centers and other social institutions for the welfare and betterment of women.

Given this, the chapter analyses the developmental initiatives undertaken by the Punjab government to improve the quality of life and the status of women in the province. Specifically, the budget allocated to programs focused on safeguarding of women and their empowerment are evaluated.

Women Development Department

Women Development Department was established on April 4, 2012 under Punjab Women Empowerment Package (PWEPP) announced on International Women's Day on March 8, 2012. This policy document contains multiple reforms in legal, administrative and institutional spheres while providing new initiatives to safeguard women's rights and is expected to transform the socio-economic status of women by expanding opportunities available to

them. The newest self-contained administrative unit in the Punjab Secretariat, Women Development Department is mandated to lead the province towards Women Empowerment and Gender Equality following PWEPP. Moreover, the women development department has taken a lot of initiatives in Punjab for legal and economic empowerment of women including women entrepreneurship, property ownership, employment, decision-making, education and vocational training through Punjab Women Empowerment Package 2012, Punjab Women Empowerment Initiative 2014, Women Empowerment Package 2016 and Punjab Women Empowerment Initiative 2017. These steps would eliminate women deprivations in order to enable them to play their role in provincial and national development.

Major Policies

According to Punjab Government Rules of Business 2011, department policy includes:

Safeguarding Women Rights

Provision of ways and means to effectively safeguard women's rights within the constitutional and legal framework to improve these guarantees not only in letters and spirit but also introduce new legislative framework where and when required.

Expanding Opportunities

Expansion of opportunities to improve socio-politico-economic status of women with special focus on rural areas. On the eve of International Women's Day celebration on 8th March 2012, Government of the Punjab announced Punjab Women Empowerment Package (PWEP) 2012 reaffirming the Provincial Government's commitment to address social and economic issues pertaining to women.

Main Functions

- Legislation, policy formulation and sectoral planning for women development.
- Transformation of the government into an organization that actively practices and promotes gender equality and women empowerment.
- Implementation of administrative and institutional reforms and departmental restructuring for promoting gender equality.
- Mainstreaming gender equality perspective across public policies, laws, programs, and projects by departments and agencies of the government with a focus on women empowerment.
- Promotion, coordination and monitoring of execution of national and provincial policies and commitments on gender reforms and women development.
- Provision of technical support and expertise for gender mainstreaming in all departments of the government and its agencies.
- Expansion of investment in women's socio-political and economic development to achieve the goal of gender equity.
- Collection of quantitative and qualitative data and conducting research on the status of women in the Punjab to highlight issues at appropriate forum.
- Building of partnership with line departments, non-governmental and civil society organizations to deliver on the rights and entitlement of women.

- Pursuance of means and measures to increase participation of women in political process and encouragement of effective representation of women in political and administrative spheres.
- Collaboration with legal, judicial, law enforcement and other relevant governmental and non-government agencies to facilitate women's access to formal legal and justice system.

Attached Departments

- Directorate of Women Development Punjab
- Punjab Commission on the Status of Women

Projects

Working Women Hostels

The Women Development Department has established hostels for women who are working away from home in the province to provide them residential facilities. Due to the non-availability of well protected and safe living place, women normally do not take jobs away from their home towns. To provide facilities of suitable and secure accommodation on subsidized and affordable charges to working women, these hostels have been established in different cities.

Ongoing Projects under Annual Development Program

- Purchase of Land for Construction of Women Development Complex, Lahore (PC-II)
- Awareness Campaign on Punjab Women Empowerment initiatives, Punjab
- Women Development Fund, Punjab, to provide economic empowerment to women of Punjab

Women Development and the Punjab Growth Strategy 2018

The strategy focuses on reform and development of key sectors of the economy like

industry, cities, agriculture, skills, education, and health.

The Government will seek to create a unified focal agency for Skills development with significant representation from the private sector, skills experts and training providers as well as the relevant government Departments, which includes the Women Development Department and the Punjab Commission on the Status for Women. This structure of representation will help institutionalize an inclusive and demand-based approach for skills training. Some initiatives have taken to empowering women to participate fully in economic life across all sectors e.g.

- Improving women Access to Skills Training Opportunities;
- Reducing the cost of accessing training opportunities for both men and women, by introducing complementary interventions;
- Market Linkages for Women;
- Active Labour Market Policies for Women;
- Special interventions to ensure that women’s employment levels increase;
- Capacity building of livestock subsistence farmers and women for empowering them to organize, to alleviate poverty.

ADP major schemes

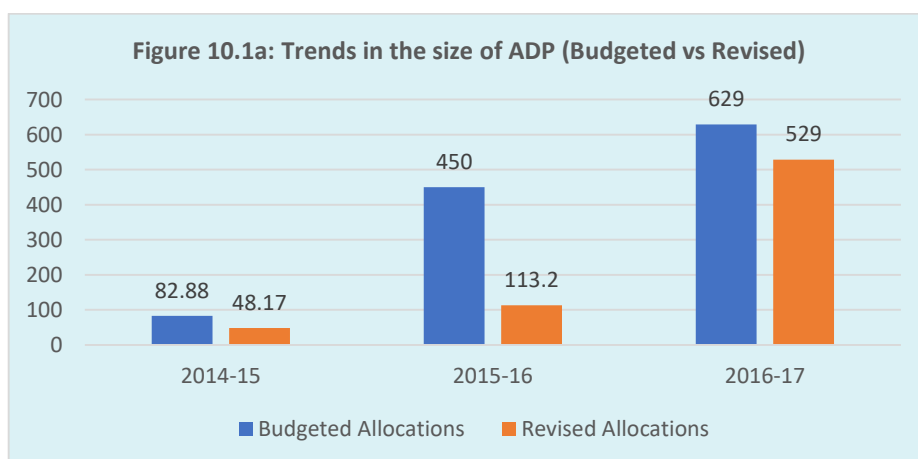
- Establishment of working women hostel at tehsil& district level
- Implementation of Gender Reform Action
- Toll free women’s helpline
- Research report on situational analysis of women employment in private sector
- Women development fund
- Awareness campaign on Punjab women empowerment initiatives

Women development sector’s major polices

- Safeguarding women’s right within the constitutional and legal framework
- Expansion of opportunities to improve socio-politico-economic status of women with special focus on rural areas

Trends of the ADP of the Women Development Sector

The figure below illustrates the trend of allocations made in the sector over the past few years. It can be seen (in Figure 10.1a) that the size of the budget has drastically increased, which is a positive sign. However, it is concerning that the revised actual allocations are lower than what originally was planned. This pattern has been consistent. Hence, there is a need to reduce the gap between budgeted allocations and actual allocations (see Figure 10.1b).



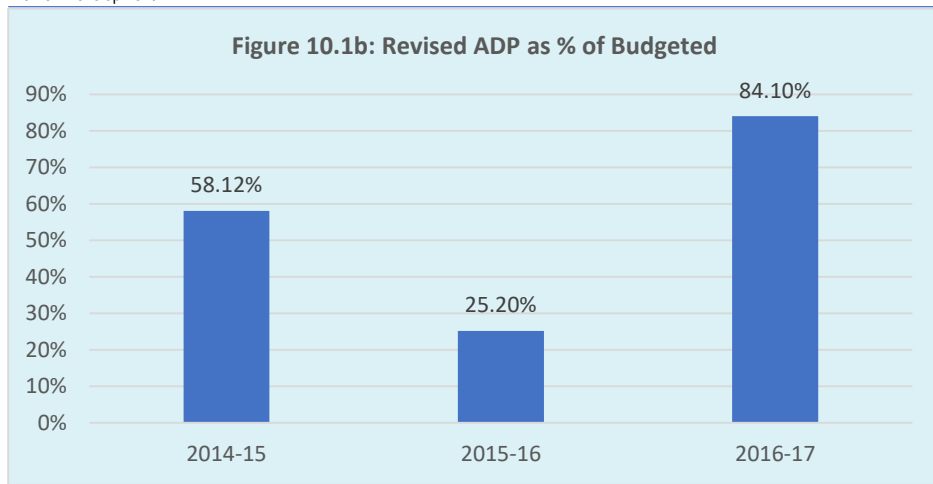
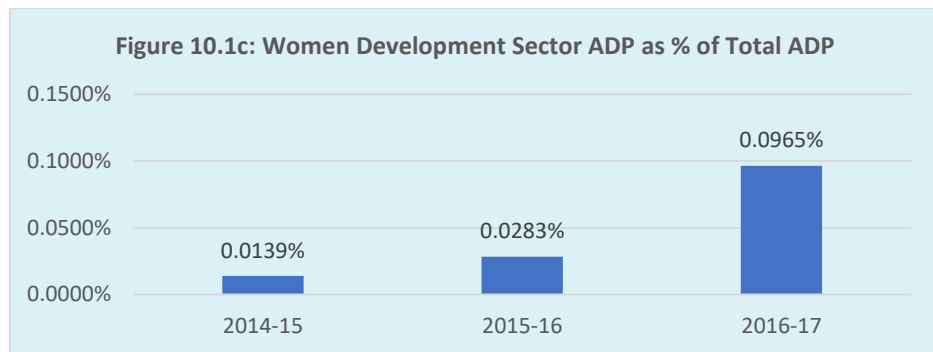


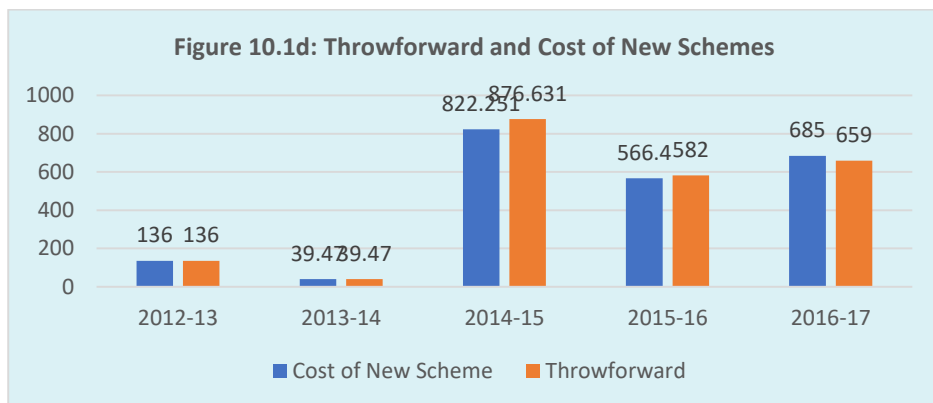
Figure 10.1c shows the allocations made to this sector in comparison to total allocations. As clearly visibly, the allocations made are extremely small (even less than

one percent). This is not an encouraging sign as this particular social sector requires more attention and resources and hence needs to be better represented in the ADP.



While the sector allocations are limited when compared to other sectors in the ADP, the size of throw-forward is still high (especially in the recent years). This implies

that the sector has not been receiving adequate allocations and with the incoming schemes having relatively higher costs, an equally large size of throw-forward is not beneficial for the sector.



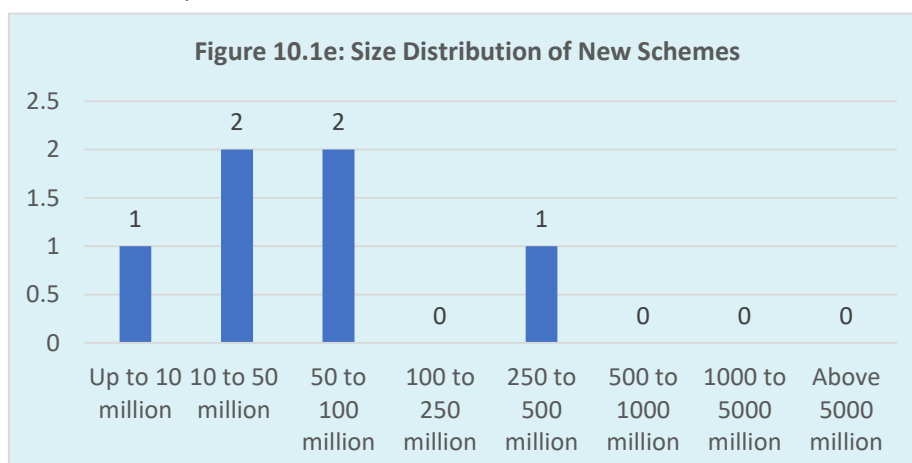
A further look into the various components of the ADP will allow to identify the changes in the structure of the ADP over time. Given this, Table 10.1 provides a summary of the key indicators of the ADP.

Table 10.1: Key Indicators of the ADP					
	2012-13	2013-14	2014-15	2015-16	2016-17
Number of Schemes					
On-Going Schemes	2	2	3	2	1
New Schemes	1	1	5	4	6
Percentage New Schemes	33.33%	33.33%	62.5%	66.67 %	85.7 %
Cost of New Schemes as % of Total Cost	25.042%	36.53%	87.1%	83.33 %	88.32%
Average Cost per Scheme (Rs Million)					
On-Going Schemes	203.538	34.275	37.7	48.5	80
New Schemes	136	39.47	152.7	121.3	100.8
Average Allocation per Scheme (Rs Million)					
On-Going Schemes	56.5	11.2195	13.909	30.5	54
New Schemes	50	38.561	75.93	109.75	95.8
Allocation as proportion to Cost of Schemes					
On-Going Schemes	27.76 %	32.73 %	36.89 %	62.89 %	67.5 %
New Schemes	36.76%	97.7%	49.721%	90.52 %	95.04%
Allocative Efficiency of the Sectoral ADP*					
On-Going Schemes (On-Going Allocation/Total Allocation)	69.32%	36.79 %	9.9%	12.2 %	8.585%
New Schemes (New Allocation/Total Allocation)	30.67%	63.22%	90.1%	87.8 %	91.41%

Source: Planning and Development Department, Government of the Punjab.
* Percentage of the total sectoral allocation going to on-going schemes and new schemes.

The number of ongoing schemes ranged from 1 to 3 over the last 5 years. The number of new schemes, however, have increased over the years from 1 to 6 in 2016-

observed that majority of the schemes do not exceed Rs. 100 million.



17 perhaps reflecting the increased focus being given to this sector. This may also be the reason why new schemes have comprised of an increasing proportion of total cost of schemes reaching 88.32% in 2016-17.

According to the table, the number of new schemes is rising, which is a positive sign as the sector is relatively new and requires a variety of developmental programs. Nonetheless, the average cost of new schemes is comparatively high which may pose difficulties if adequate allocations are not made.

Figure 10.1e depicts the size of new schemes on the basis of total cost. It can be

CONCLUSION AND RECOMMENDATIONS

The Punjab Government is committed to safeguarding women's rights and improving the socio-economic status of women by providing and expanding opportunities. Nonetheless, more initiatives need to be undertaken and there is a need to increase the size of allocations to the sector.

Given the analysis conducted above, it is suggested that:

- **Increase the allocations being made to the sector:** currently there are very

few schemes in the ADP and the allocations made are not inadequate. With increase in allocations, the number of schemes can then also be gradually increased since much work is needed to improve the status of women in the province.

- **Introduce programs which target social issues and create awareness:** while issues like sexual harassment, women rights etc. have been taken into notice by the department. Still there is lack of awareness amongst the masses. Given this, it is important that awareness regarding these issues be highlighted in both urban and rural areas.

Creating awareness will help in spreading the message and changing the mindsets.

- **Focus on projects that economically empower women:** female participation is still low in the province and there is a need to encourage females to join the workforce and contribute. Hence, initiatives such as providing skills training, enforcing workplace harassment law etc. are important for women development.



Governance and Management Issues in ADP Implementation

INTRODUCTION

The 18th Amendment (2010) has made the provinces responsible for provision of facilities such as health, education, and social protection. Additionally, the provincial governments are also tasked with ensuring an enabling environment to generate employment in agriculture, manufacturing and services sectors. In Punjab, the Planning and Development Department (P&DD) is the authority in charge of devising a strategic policy framework for development planning by the line departments and district governments. Given this, the Annual Development Programme (ADP) is a key policy instrument for implementing development vision of the government through strategic resource allocation with a medium-term perspective¹³.

With the ADP acting as the primary source for the implementation of developmental projects in Punjab, it then becomes crucial that the programme efficiently addresses the needs of the province. Over the years, the development budget size has increased substantially, and in 2016-17 the ADP comprised of Rs. 550 billion. Given this, the ADP formulation process becomes a critical task, one which needs to be carefully dealt with. Hence making it important that

the line departments and district governments are proposing projects/schemes that are aligned with the development objectives of the political leadership. For this purpose, the P&DD is guiding these bodies by offering a clear development agenda (in the form of Punjab Growth Strategy 2018, Sustainable Development Goals etc.) and acting as a supervisory body.

This chapter offers an insight into the role of government departments and the ADP formulation process. Through this, we intend to analyze the development projects being undertaken in the province and try to identify the potential issues that are adversely affecting the implementation process of a few of these schemes. For this purpose, a set of PC-Is from different sectors were evaluated against a set of indicators (via short questionnaires). The detailed evaluation forms are present in the Appendix.

ADP FORMULATION

The ADP guideline is a major part of the formulation process, wherein the sectoral objectives are mentioned in detail. This document is the fundamental resource for all the developmental projects that can be proposed by the local authorities. The guideline also includes a set of pro forma that are duly filled by

¹³ ADP Guidelines 2016-17 Document, P&DD

the department stating the important information regarding the project. Since this document is circulated by the P&DD, it is important the relevant local and district government departments adhere to the guidelines and prepare the schemes accordingly. This will be beneficial for the planning department as well, since this will allow for uniformity and make comparison between similar

projects (from different departments) much easier.

Currently, the ADP formulation process is six-month process, starting from the circulation of guidelines to the eventual approval of the proposed scheme by the provincial assembly. The timeline of the process is explained below:

DATE	ACTION
January	Circulation of ADP guidelines
1 st Feb to 15 th March	Submission of scheme-wise first draft ADP to the Planning & Development by the departments <i>duly cleared by Minister In-charge</i> .
16 th -25 th March	Scrutiny of draft ADP by the Members P&D and submission to Coordination Wing of P&D Department
26 th March to 7 th April	Departmental meetings / briefing with Chairman, P&D to discuss draft ADP
10 th April	Submission of 2 nd draft ADP to P&D by the Departments
Up till 15 th May	Approval of new schemes proposed for inclusion in ADP by the competent forum
28 th May	Submission of draft ADP to Finance Department
Mid June	Discussion and approval by Provincial Assembly.
Source: P&DD	

In the present scenario, there are four months to submit the draft PC-Is to P&DD. A New ADP Formulation Framework (2017) has been developed, and as per early reports, the duration of the planning cycle is being extended from 1st October to June. With four months being added to the existing cycle, the pressure eases off a little. Hence making it possible that departments do not rush into submitting ill-prepared drafts, and instead will now have more time to follow the ADP guidelines properly and submit accordingly. However, the true effects will only be assessed once the new framework is put into practice.

SCHEMES IN THE ADP: HOW SUCCESSFUL ARE THEY?

Factors Affecting the Implementation Process

Our report has taken a close look at various sectors of the provincial economy that are also part of the ADP. The findings from the PC-I analysis indicate that many of the ongoing projects have been continuing for a period beyond the initially estimated timeline. It has been observed that one of the most common reason for such delays is inadequate allocation. With increased budget size, the number of new schemes has also been gradually rising. Consequently, there

has been a diversion of funds which has disrupted the operations of many projects already implemented. This is validated by the project evaluations conducted by Directorate General Monitoring and Evaluation (DGM&E) with a few schemes citing shortage of funds as the reason for deviation in time line. As highlighted in earlier chapters, if this pattern of minimal allocations continues then the completion time of the schemes is likely to exceed the originally planned time period. Long delays in projects will almost always result in an increase in cost, hence causing more problems for the government which is already operating within limited resources.

The success of a public sector development project is contingent upon setting up of a clear and well-defined scope of the scheme, careful planning using standardized tools, and managing the implementation process. Unfortunately, some public sector projects lack these key factors and as result fail to take shape in the way originally envisaged. One reason is the numerous revisions of some of the projects. These revisions cause unnecessary delays in the approval and subsequent implementation process. While evaluating select PC-Is, one of the most common reason for revision turned out to be *change in scope of the scheme*. This implies that from the onset, the authorities responsible for drafting the PC-I are not fully aware of the nature of the project that is being proposed. While it is true that deliberations with other stakeholders do result in significant suggestions that should be incorporated into the scope and design of the projects, nonetheless the changes should not drastically alter the scope of the scheme as this not only transforms the nature of the scheme at hand but can also result in a notable change in the total estimated cost. A few examples of *change in scope* include increasing the quantity of facilities being provided (for e.g. raising the number of beds in a hospital, increasing the number of toilets in a school etc.), and extending the scheme to other parts of the province (for e.g. including nearby areas into the scheme etc.). Other reasons for revision include *changes in the cost structure, delay in implementation, and lack of financial accountability*.

Assessing the Quality of PC-Is

Since the PC-I is a document encompassing all the important details of the project, it needs to be prepared meticulously. Our evaluation of selected PC-Is indicates that majority of the drafts submitted to P&DD by the line departments and district governments are not well-prepared and there is usually negligible background working done by the proposing department. That is, hardly any robust cost-benefit analysis techniques are used to determine the feasibility of the project. Moreover, for many of the large-scale projects there is no cost-benefit analysis conducted. While it is true that for schemes of qualitative nature using quantitative appraisal tools maybe difficult, however there are ways to quantify social costs and benefits and such measures need to be adopted and the PC-I be prepared accordingly.

Our review of PC-Is indicated that even for highly technical projects, such as those falling under the roads sector (see A.3), no sensitivity (cost effectiveness) analysis has been conducted for any of the major projects that we reviewed. With PC-Is not including such relevant details, issues are likely to be face wherein it may be realized midway of the implementation that the project is not feasible. With no proper backup calculations made, the success of a project will remain uncertain.

For a detailed analysis of the PC-Is and the issues encountered, see the Appendix.

CONCLUSION AND RECOMMENDATIONS

The formulation of ADP is a critical process in the planning department as the development of the province is hinged on to it. The P&DD acknowledges the significance of the ADP and has made conscious efforts to improve the formulation process and ensure the quality of schemes being included in the ADP. While these efforts are welcomed, there are still a few issues present for which the following solutions are recommended:

- **Ensure that the ADP guidelines are precisely followed by the line departments and district governments:** while the guidelines are present, the PC-Is are still not prepared according to these guidelines. Compliance with the outlines stated in the guidelines need to be enforced.
- **Provide ample time for the preparation of PC-I:** A New ADP Formulation Framework (2017) has been developed which has increased the duration of the formulation process. It is hoped that this will give more time to the relevant departments to submit a well-prepared proposal.
- **Reduce the time of review and approval of the PC-Is:** It has been observed that some of the PC-Is are revised primarily due to change in estimated cost caused by a revision in market rates. If the originally prepared PC-Is are not reviewed in due time and immediately implemented, then the analysis conducted, and prices quoted in the PC-I are likely to become outdated.
- **Similarly, there is a need to minimize the time taken to release funds:** as otherwise there will be unnecessary delays in the implementation of the project.
- **Project Management:** Even if a project is well-designed, there is a possibility of it not working out due to inefficiency. Hence, there is a need to focus on imparting project management skills to the officials handling the projects. As, the department employees are usually competent but lack such skill which results in the possible failure of the project.

Appendix

Evaluation of PC-I

This section provides a critical evaluation of ten largest projects (primarily in terms of total cost with the exception of a few) that are part of the ADP 2016-17. The PC-I of each was inspected and consequently the following three forms were duly filled. The purpose of this exercise was to determine the quality of PC-Is, i.e. how much research and planning goes into designing the project/scheme. Additionally, the cost of projects was reviewed to identify those cost components that make up the largest portion of the total cost of the schemes.

A.1 Education Sector

Project/Scheme Name	Main Cost Components			Delivery Cost				Total
	Land & Resettlement	Civil Works	Machinery/ Equipment	Salary & Admin	Vehicles	Utilities	Contingency & Misc.	
Voucher Scheme for Inclusive Education at PEF Schools for Main Streaming of Special Needs Children (Pilot Project at Lahore, Multan & Rawalpindi.	-	35.388	15.6182	64.774	7.82	9.2938	58.78875	191.6827
Punjab Non-Formal Education Project	-	-	904.878	2376.742	2.98	1.02	2343.806	5629.426
Khawaja Ghulam Farid University	169.545	2346.081	1016	150	50	-	68.322	3799.948
Introduction of Early Childhood Education in 1000-Primary Schools in Punjab with highest enrollment & Improvement of Environment of Schools to convert them into Child-Friendly Schools	-	-	65	125.149	-	-	6.5	196.649
Taleem sab kay liay	-	-	76	262.293	2.58	1.2	3.818	345.891

Provision of Additional Classrooms	-	11817.16	554.398	486.209	28.4	8.4	253.107	13147.67
Construction of Building of Women University, Sialkot on acquired piece of land at Sialkot	-	1264.804	543.688	41.6	49.7	-	10	1909.792
Punjab Inclusive Education Project (Pilot Phase at Bahawalpur & Muzaffargarh)	-	6	50.58	120.406	10.52	0.2	0.52	188.226
Construction of Building of Engineering College of University of Sargodha	-	726.097	325.187	25.618	18	-	-	1094.902
Establishment of Govt. Secondary School Special Education for Girls, HIC, Rawalpindi	-	-	3.856	7.803	-	6.5	-	18.159

A Reconnaissance Survey

The main purpose of this survey to see whether proper evaluation tools are used in the preparation of PC-I. It can be seen that none of the projects included any quantitative measures. While it is true that most of the benefits of education are qualitative in nature, nevertheless there are ways to quantify these gains and use the appropriate indicators to gauge the potential of the schemes.

Name of the Project/Scheme	Sector	Year (from PC-I)	Cost of the Project	Evaluation										
			(Rs. Million)	Is there a Cost-Benefit Analysis of the Project?	Discount Rate	If Yes, what is the			Is there a cost effectiveness analysis of the project?	If yes, what are the key cost effectiveness indicators?				
				(Yes /No)		(%)	NPV	EIRR (%)	B/C Ratio	(Yes /No)	a	b	c	
Voucher Scheme for Inclusive Education at PEF Schools for Main Streaming of Special Needs Children (Pilot Project at Lahore, Multan & Rawalpindi.	Special Education	2015	192	Yes										
Punjab Non-Formal Education Project	Literacy	2015	5629.426	yes										
Khawaja Ghulam Farid University	Higher Education	2014	3799.948	yes										

Introduction of Early Childhood Education in 1000-Primary Schools in Punjab with highest enrollment & Improvement of Environment of Schools to convert them into Child-Friendly Schools	School Education	2015	196.649	yes								
Taleem sab kay liay	Literacy	2015-16	345.891	yes								
Additional Classrooms	School Education	2016	13147.669	Yes								
Construction of Building of Women University, Sialkot on acquired piece of land at Sialkot	Higher Education	2016	1909.792	yes								
Punjab Inclusive Education Project (Pilot Phase at Bahawalpur & Muzaffargarh)	Special Education	2014	188.226	Yes								
Construction of Building of Engineering College of University of Sargodha	Higher Education	2015	1094.902	Yes								
Establishment of Govt. Secondary School Special Education for Girls, HIC, Rawalpindi	Special Education	2016	18.159	Yes								

Revisions of Schemes: Numbers and Reasons

The purpose of this brief form was to find out the number of times schemes have been revised and what are the reasons for these revisions. Of the ten schemes, three schemes were revised. The analysis is presented below. This information will allow to identify the most common reasons for revisions which can indicate lack of planning and lead to unnecessary delays in project implementation.

Table A.1.3: Revisions of Schemes: Numbers and Reasons

Name of Scheme	Location of Scheme (District)	Executing agency	Number of revisions	Reasons of revisions*	Were the reasons of revisions same every time?	Do the revisions lead to cost overrun? If Yes, please specify the ...		Do the revisions lead to delay in implementation of scheme?	
						Original Cost	Revised Cost	Original Duration of Implementation	Revised duration
Voucher Scheme for Inclusive Education at PEF Schools for Main Streaming of Special Needs Children (Pilot Project at Lahore, Multan & Rawalpindi)	Lahore, Multan & Rawalpindi	Special Education	1	Concept and Design Problem	-	-	-	30-12-18	30-6-18
Introduction of Early Childhood Education in 1000-Primary Schools in Punjab with highest enrollment & Improvement of Environment of Schools to convert them into Child-Friendly Schools	Punjab	School Education	1	Delay in release of funds; Saving of Funds	-	196.6	196.6	24 months	30 months
Punjab Inclusive Education Project (Pilot Phase at Bahawalpur & Muzaffargarh)	Bahawalpur & Muzaffargarh	Special Education	1	Consolidate gains of project	-	-	-	24	30

* The following could be one of the reasons:

1. Scope of the Scheme
2. Delay in release of funds
3. Lack of Capacity
4. Delay in Civil Works
5. Delay in appointment of Project Directors/Consultants
6. Delay in Land Acquisition
7. Concept and Design Problem
8. Delay in Consultant's Appointments Delay in Procurement
9. Law & Order Situation
10. Turn Over of Project Directors/Staff
11. Lack of Coordination b/w Federal & Provincial Governments
12. Others, please specify

A.2 Health Sector

Table A.2.1: Cost Components of Projects								(Rs in Millions)
Project Name	Main Cost Components			Delivery Cost				Total
	Land & Resettlement	Civil Works	Machinery Equip-ment	Salary & Admin	Vehicles	Utilities	Contingency & Misc.	
Provision of Missing Specialties for Up-gradation of DHQ Hospitals to Teaching Hospital Sahiwal	NA	2546.177	2084.822	70.768	18.8	NA	12.17	2805.948
Establishment of Institute of Urology and Transplan-tation, Rawalpindi.	NA	2129.057	1684.098	362.272	20.86	NA	NA	4196.287
Provision of Missing Specialties for Up-gradation of DHQ Hospital to Teaching Hospital Gujranwala.	NA	2415.995	2080.757	59.460	29.800	NA	NA	4586.012
Provision of Missing Specialties for Up-gradation of DHQ Hospital Dera Ghazi Khan into Teaching Hos-pital Dera Ghazi Khan.	NA	1617.086	1889.144	775.823	30.3	NA	NA	3536.5
Comprehensive Punjab TB Control Program	-	-	-	-	-	-	-	-
Establishment of Hepatitis Clinics and GI Depart-ments in all Tertiary Care Hospitals in Punjab	NA	1515.750	2708.557	NA	6.300	NA	NA	4230.607
Provision of Missing Facilities for Up-gradation of DHQ Hospitals (AIMH & GSBH Sialkot) to Teaching Hospitals.	NA	5766.69	2157	1656.2	22.0	NA	NA	9601.89

Prevention and Control of Hepatitis B&C in Punjab.	NA		1362.482	1181.532	13.276	-	-	2557.29
Establishment of Punjab Institute of Neurosciences (PINS) Phase I, Lahore General Hospital.	NA	1997.962	664.918	-	-	-	-	2662.88
Chief Minister's Stunting Reduction Program for 11 Southern Districts of Punjab. (Phase I)	-	-	79.244	332.767	4.0	-	1275.164	1691.175

A Reconnaissance Survey

The table given below represents the survey of ten major projects of the health sector, it indicates that major projects do not contain economic and financial analysis of the projects. That is, there is no: cost benefit ratio, net present value, internal rate of return and cost effectiveness analysis.

Name of the Project	Sector	Year (from PC-I)	Cost of the Project	Evaluation								
			Rs. Million	Is there a Cost-Benefit Analysis of the Project?	Discount Rate	If Yes, what is the			Is there a cost effectiveness analysis of the project?	If yes, what are the key cost effectiveness indicators?		
				Yes /No	%	NPV	EIRR (%)	B/C Ratio	Yes /No	a	b	c
Provision of Missing Specialties for Up-gradation of DHQ Hospitals to Teaching Hospital Sahiwal	Health	2014	4887.026	No	NA				No			
Establishment of Institute of Urology and Transplantation, Rawalpindi.	Health	2012	4071.919	No	NA				No			
Provision of Missing Specialties for Up-gradation of DHQ Hospital to Teaching Hospital Gujranwala.	Health	2014	5187.498	No	NA				No			
Provision of Missing Specialties for Up-gradation of DHQ Hospital Dera Ghazi Khan into Teaching Hospital Dera Ghazi Khan.	Health	2016	3634.199	No	NA				No			
Comprehensive Punjab TB Control Program	Health	2016	3364.137	No	NA				No			
Establishment of Hepatitis Clinics and GI Departments in all Tertiary Care Hospitals in Punjab.	Health	2017	4458.965	No	NA				No			
Provision of Missing Facilities for Up-gradation of DHQ Hospitals (AIMH & GSBH Sialkot) to Teaching Hospitals.	Health	2017	9891.12	No	NA				No			
Prevention and Control of Hepatitis B&C in Punjab.	Health	2016	9973.0	No	NA				No			

Establishment of Punjab Institute of Neurosciences (PINS) Phase I, Lahore General Hospital. Establishment of Punjab Institute of Neurosciences (PINS) Phase I, Lahore General Hospital.	Health	2006	2662.880	No	NA				NA			
Chief Minister's Stunting Reduction Program for 11 Southern Districts of Punjab. (Phase I)	Health	2017	3902.00	No	NA				NA			

Revisions of Schemes: Numbers and Reasons

The table given below represents the analysis of ten major projects of health sector. The analysis indicates that in most of the projects the PC-1 has been revised due to various reason. The revised cost is much higher than the original cost which indicates that there exist loopholes in the planning process and resultantly a large number of projects have been revised more than once.

Name of Scheme	Location of Scheme (District)	Executing Agency	Number of revisions	Reasons of revisions*	Were the reasons of revisions same every time?	Do the revisions lead to cost overrun? If Yes, please specify the ...		Do the revisions lead to delay in implementation of scheme?	
						Original Cost	Revised Cost	Original Duration of Implementation	Revised duration
Provision of Missing Specialties for Up-gradation of DHQ Hospitals to Teaching Hospital Sahiwal.	Sahiwal	C & W and Department of Health, Government of Punjab.	1	The post and Project Management Unit (PMU) structure for the tertiary care health facilities has been amended in the light of the direction of SHC&ME Department.	No	3637.815	4887.026	2014-18	2014-18
Establishment of Institute of Urology and Transplantation, Rawalpindi.	Rawalpindi	Govt. of Punjab Health Department Lahore. C & W and Department of Health, Government of Punjab. Project Director Institute of Urology and	3	There was no provision of cost of the Project Management Unit (PMU) expenditures so the PC-1 is revised by including the operational expenditure and the cost for the procurement to be made for PMU.	No	3994.291	4071.919	2012-19	2012-19

		Transplantation, Rawalpindi.							
Provision of Missing Specialities for Up-gradation of DHQ Hospital to Teaching Hospital Gujranwala.	Gujranwala.	Department of Specialized Health Care & Medical Education (SCH&ME), Government of Punjab.	2	<p>Revision of PMU as proposed by project management Office.</p> <p>The revenue of the PC-1 for the scheme is also revised from Rs.2019.65 million to Rs.2483.137 million as rates of various items have been increased due to inflation.</p> <p>The capital portion has also been revised by C&W department due to increase in RFTs for two consecutive quarters.</p>	No	3091.	5187.498	2014-18	2014-18
Provision of Missing Specialities for Up-gradation of DHQ Hospital Dera Ghazi Khan into Teaching Hospital Dera Ghazi Khan.	Dera Ghazi Khan	C&W Department and Project Director/Principal, Ghazi Khan Medical College, DG Khan.	2	<p>The scheme of "Provision of Missing Specialities" was originally planned for the up gradation of DHQ Hospital into Teaching Hospital after the establishment of D.G. Khan Medical College, D.G. Khan.</p> <p>The Cost and Revenue components along with rationalization of equipment & prices were revised after meetings with the Architect Department, IDAP & C&W authorities and under the technical guidance of the Secretary SHC&ME Department Government of the Punjab.</p>	No	2380.427	3634.199	2016-18	2016-18
Comprehensive Punjab TB Control Program	36 Districts of Punjab	Punjab TB Control Program,	2	The previous PC-1 were developed based upon Millennium Development Goals (MDGs). These targets	No	1398.933	3364.137	2016-18	2016-2020

		24 Cooper Road, Lahore		<p>have been achieved till 2015. The targets for post 2015 period are in the framework of Sustainable Development Goals (SDGs). The revised PC-1 is therefore based on SDGs.</p> <p>Previously besides GoPb share (PC-1), the major share was contributed by PSDP, Global Fund, NTP (PC-1), and WHO etc. The PSDP share is almost fix. Now, as per commitment, Punjab Government has to increase its share, as compared to donors. The previous share was 20/80 (GoPb/PSDP: Donors). Keeping in view majority ordinary TB patient, the first line drugs are mainly used in the Program. Accordingly, GoPb share, inter alia, for first line drugs will be about 50%, 70% and 90% for the years from 2017-18 onward respectively.</p>					
Establishment of Hepatitis Clinics and GI Departments in all Tertiary Care Hospitals in Punjab.	17 Tertiary care AMI/Hospitals of Punjab.	Concerned heads of Institution and PMU. Hepatitis Clinics and GI Departments in all Tertiary Care Hospitals in Punjab and PITAB	2	NA		NA	4458.965		2017-20
Provision of Missing Facilities for Up-gradation of DHQ Hospitals (AIMH & GSBH Sialkot) to Teaching Hospitals.	Sialkot	IDAP-Infrastructure Development Authority Punjab	NA	NA		NA	9891.12		2017-18

Prevention and Control of Hepatitis B&C in Punjab.	All Districts of Punjab	Hepatitis Control Program Punjab, Directorate General Health Services Punjab	1	Keeping in view the magnitude of disease burden and number of patients who are in the waiting list at various hepatitis sentinel sites due to limited medicines available under the program, it was decided to revise PC I to increase the treatment facilities to patients suffering from Hepatitis in terms of not only through providing medicines but also by expanding the number of hepatitis sentinel sites to the level of tehsil in every district.		NA	9973		2016-19
Establishment of Punjab Institute of Neurosciences (PINS) Phase I, Lahore General Hospital.	Lahore	Provincial Buildings Department	NA	The building portion is revised because of inflation of price and due to revised scope of work. Therefore, the Capital and Revenue component were also revised.	NA	1573.934	2662.880		2006-2016
Chief Minister's Stunting Reduction Program for 11 Southern Districts of Punjab. (Phase I)	11 Southern Districts of Punjab	Primary and Secondary Healthcare Department, Punjab and Districts Governments in Punjab.	1	NA	NA		3.902 billion	2017-2020	2017-20

* The following could be one of the reasons:

1. Scope of the Scheme
2. Delay in release of funds
3. Lack of Capacity
4. Delay in Civil Works
5. Delay in appointment of Project Directors/Consultants
6. Delay in Land Acquisition
7. Concept and Design Problem
8. Delay in Consultant's Appointments Delay in Procurement
9. Law & Order Situation
10. Turn Over of Project Directors/Staff

-
11. Lack of Coordination b/w Federal & Provincial Governments
 12. Others, please specify

A.3 Roads Sector

Cost Components of Projects

Project Name	Main Cost Components			Delivery Cost				Total
	Land & Resettlement	Civil Works	Machinery Equip-ment	Salary & Admin	Vehicles	Utilities	Contingency & Misc.	
Construction of high level bridge over river Jehlum at Langarwala Pattan, District Sargodha/Khushab	692.01	2272.45	-	21.33	-	1	32.78	3019.56
Construction of bridge over river Chenab at Shahbazpur to connect district Gujrat with district Sialkot in Gujrat	223.22	3541.67	-	56.41	-	-	105.45	3926.76
Construction of dual carriageway from Gujrat to Salam Interchange (motorway) through Mandi Bahauddin (section 27.90 Km to 94.60 Km)	190.64	3618.35	-	70.15	-	-	97.59	3679.73
Dualization of Kasur Depalpur Carriageway from 0.00 Km to 101.30 Km in district Kasur and Okara		4642.24	-	112.74	-	-	566.94	5321.66
Dualization of Khanewal Lodhran road, section from 39.00 Km to 93.00 Km length 54 Km in district Vehari and Lodhran	859.27	7814.15	-	172.29	9.94	-	728.99	9584.64
Widening/improvement/reconstruction of Rawat Harraka Dhudial road (Phase-I Rawat Jorrian Length 36 Km)	6.5	716.189	-	14.324	-	-	22.494	759.507
Widening /improvement of Lahore Sargodha Mianwali Bannu Road (part 2 (phase II) from Kot Chandna to Dara Tang from 355.45 Km to 408.92 Km (53.45 Km) District Mianwali (Revised)	21.83	1847.18	-	47.28	-	-	73.44	1989.73

Rehabilitation of Dualized road from Sargodha to Makhdoom Interchange (M-2) Length 42.00 Km, Sargodha		2113.99	-	42.70	-	-	68.09	2224.78
Widening and improvement of road from Hafizabad (Jinnah Chowk) to Pendi Bhattian Interchange I/C construction of Jalpur Bhattian Bypass, Length 51.45Km, District Hafizabad.	81.111	803.424	-	-	-	-	54.535	939.07 Stated total 848.668
Widening and remodelling of road and intersections of Islamabad Airport road from Jinnah Park Chowk to Flying Club Rawalpindi	184.32	1002.01	-	39.10	-	47.79	123.25	1396.47

A Reconnaissance Survey

Table A.3.2: A Reconnaissance Survey											(Rs in Millions)		
Name of the Project	Sector	Year (from PC-I)	Cost of the Project	Evaluation									
			Rs. Million	Is there a Cost-Benefit Analysis of the Project?	Discount Rate	If Yes, what is the			Is there a cost effectiveness analysis of the project?	If yes, what are the key cost effectiveness indicators?			
				Yes /No	%	NPV	EIRR (%)	B/C Ratio	Yes /No	a	b	c	
Construction of high level bridge over river Jehlum at Langanwala Pattan, District Sargodha/Khushab	ID	2016-17	3019.56	Yes	12%	2456.30	23.715%	2.261					
Construction of bridge over river Chenab at Shahbazpur to connect district Gujrat with district Sialkot in Gujrat	ID	2016-17	3926.76	Yes	12%	103.055	13%	1.09					
Construction of dual carriageway from Gujrat to Salam Interchange (motorway) through Mandi Bahauddin (section 27.90 Km to 94.60 Km)	ID	2009-10	3976.73	no	-	-	-	-					
Dualization of Kasur Depalpur Carriageway from 0.00 Km to 101.30 Km in district Kasur and Okara	ID	2012-13	5321.65	-	-	-	-	-					
Dualization of Khanewal Lodhran road, section from 39.00 Km to 93.00 Km length 54 Km in district Vehari and Lodhran	ID	-	9584.64	-	-	-	-	-					
Widening/improvement/reconstruction of Rawat Harraka Dhudial road (Phase-I Rawat Jorrian Length 36 Km)	ID	-	749.02	Yes	12%	303.89	20.54%	1.43					
Widening /improvement of Lahore Sargodha Mianwali Bannu Road (part 2 (phase II) from Kot Chandna to Dara Tang from 355.45 Km to 408.92 Km (53.45 Km) District Mianwali (Revised)	ID	-	1989.06	-	-	-	-	-					

Rehabilitation of Dualized road from Sargodha to Makhdoom Interchange (M-2) Length 42.00 Km, Sargodha	ID	2016-17	2224.78	Yes	12%	5796.89	52.703	3.54				
Widening and improvement of road from Hafizabad (Jinnah Chowk) to Pendi Bhattian Interchange I/C construction of Jalpur Bhattian Bypass, Length 51.45Km, District Hafizabad.	ID	2013-14	848.66	No	-	-	-	-				
Widening and remodelling of road and intersections of Islamabad Airport road from Jinnah Park Chowk to Flying Club Rawalpindi	ID	2009	1396.47	-	12%	1436.81	28.54	2.08				

Revisions of Schemes: Numbers and Reasons

Table A.3.3: Revisions of Schemes: Numbers and Reasons										(Rs in Millions)	
Name of Scheme	Location of Scheme (District)	Executing Agency	Number of revisions	Reasons of revisions*	Were the reasons of revisions same every time?	Do the revisions lead to cost overrun? If Yes, please specify the ...		Do the revisions lead to delay in implementation of scheme?			
						Original Cost	Revised Cost	Original Duration of Implementation	Revised duration		
Construction of high level bridge over river Jehlum at Langarwala Pattan, District Sargodha/Khushab	-	-	2	Realignment, construction of new cunnette, construction of Band, change of pavement design of connecting road	-	1795.81	3019.56	30 Months 15 Days, 2014	-		
Construction of bridge over river Chenab at Shahbazpur to connect district Gujrat with district Sialkot in Gujrat	-	-	-	-	-	-	-	-	-		
Construction of dual carriageway from Gujrat to Salam Interchange (motorway) through Mandi Bahauddin (section 27.90 Km to 94.60 Km)	-	-	-	-	-	-	-	-	-		

Dualization of Kasur Depalpur Carriageway from 0.00 Km to 101.30 Km in district Kasur and Okara	-	-	2	-	-	2883.356	5321.656	2007	-
Dualization of Khanewal Lodhran road, section from 39.00 Km to 93.00 Km length 54 Km in district Vehari and Lodhran	-	-	-	-	-	-	-	-	-
Widening/improvement/reconstruction of Rawat Harraka Dhudial road (Phase-I Rawat Jorrian Length 36 Km)	-	-	-	-	-	-	-	-	-
Widening /improvement of Lahore Sargodha Mianwali Bannu Road (part 2 (phase II) from Kot Chandna to Dara Tang from 355.45 Km to 408.92 Km (53.45 Km) District Mianwali (Revised)	Mianwali		1	Restoration and reconstruction of protection work due to heavy rain and flooding. Shifting of electricity poles	-	1978.873	1989.063	2013	-
Rehabilitation of Dualized road from Sargodha to Makhdoom Interchange (M-2) Length 42.00 Km, Sargodha	-	-	-	-	-	-	-	-	-
Widening and improvement of road from Hafizabad (Jinnah Chowk) to Pendi Bhattian Interchange I/C construction of Jalpur Bhattian Bypass, Length 51.45Km, District Hafizabad.	Hafizabad.	C&W	4	Change in Scope of work. Embezzlement in payment.	No	513.14	848.668	2005	-
Widening and remodelling of road and intersections of Islamabad Airport road from Jinnah Park Chowk to Flying Club Rawalpindi	Rawalpindi	RDA	1	Delay in implementation Change in Scope of Work. Cost escalation	-	333.00	1396.00	One year 2004-05	One year 2008-09

* The following could be one of the reasons:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Scope of the Scheme 2. Delay in release of funds 3. Lack of Capacity 4. Delay in Civil Works 5. Delay in appointment of Project Directors/Consultants 6. Delay in Land Acquisition 7. Concept and Design Problem | <ol style="list-style-type: none"> 8. Delay in Consultant's Appointments Delay in Procurement 9. Law & Order Situation 10. Turn Over of Project Directors/Staff 11. Lack of Coordination b/w Federal & Provincial Governments 12. Others, please specify |
|---|---|

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End Notes

¹ Taken from the Guidelines for Formulation of Annual Development Program (2018-19), Planning and Development Department, Government of the Punjab

The latest census results are out and suggest that Punjab's population has crossed 110 million; yet this translates into an overall decrease of around 2 percentage points in the national population having implications on future NFC shares. The province may have to cater to a larger size of absolute population and may have lesser resources at hand.

² Over the fiscal year, the original allocation to ADP see changes because of many factors which lead to change in the size of the original allocation. The new allocation after such changes is called the *revised allocation* to ADP.

³ There are four outliers in the projected time of completion namely: 1. construction of new emergency block at Punjab institute of cardiology Lahore, 2. Establishment of cancer hospital at Lahore, 3. Establishment of government general hospital at chak no 224/RB Faisalabad, 4. Establishment of DHQ Hospital at Multan. These schemes have not been plotted in the graph.

⁴ Drinking Water Sanitation and Hygiene Punjab Sector Development Plan 2014-2024.

⁵ Cost and impact analysis of water supply and environmental sanitation in Pakistan. Pakistan Institute of Development Economics, 2002.

⁶ https://www.unicef.org/pakistan/Stop_Stunting.pdf

⁷ Government of the Punjab

⁸ SPDC. 2016. *Social Development in Urban Pakistan*. Annual Review 2014-15 of Social Policy and Development Centre (SPDC), Karachi, Pakistan

⁹ Numbers taken from the Pakistan Population Census 2017 and Labour Force Statistics 2014-15, *Pakistan Bureau of Statistics*.

¹⁰ Punjab Agriculture Department.

¹¹ Punjab Development Statistics, 2016

¹² <https://reliefweb.int/report/pakistan/agriculture-reforms-punjab-pakistan-lift-farm-income-improve-food>