

Towards an Alternative Strategy of Economic Development in Punjab

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This paper examines long-term trends in growth and structural change of the economy of Punjab. The evolution of the structure of the Punjab economy reveals that Punjab has overstayed in agriculture. This overstay is leading to economic and ecological disaster. The slowdown of the agriculture sector has impacted and stunted the growth of other sectors of the economy and resulted in the marginalization of the state's economy relative to other Indian states. Punjab has now fallen from a top to middle income state in India and occupies seventh rank in terms of per capita domestic product. Agricultural laborers and farmers are committing suicide and poverty and inequality have returned to Punjab. Developmental institutions have become non-functional and the private corporate sector has turned its back to Punjab especially in the post-reforms period. This paper identifies factors that have hindered economic development of Punjab's economy. The evolution of the political scenario in the state is examined to identify the cause of political apathy towards Punjab's long-standing economic problems. An alternative strategy has been developed and preconditions are identified so that a better 21st century Punjab can be envisioned. The new strategy has the capacity to make the process of economic development increasingly inclusive and ecologically sustainable.

Introduction

History has remained unkind to Punjab - a geographical region of the British colonial kingdom in India well-known as the land of five rivers and for its composite culture. With the end of colonial rule in 1947, Punjab was partitioned into East and West Punjab. This division resulted in turmoil in the region leading to an unprecedented transfer of population of around 10 million and communal riots that claimed the lives of between 0.5 and 0.8 million people (Ahmed, 2011; Singh, Singh and Singh, 2014). The erection of an artificial border, snapping of trade ties, and hostile international relations between India and Pakistan increased manifold the suffering of people of both East and West Punjab (Gill, Ghuman, Singh, Singh, Singh and Brar, 2010). The disruption of economic activities for a very large population occurred, and their rehabilitation posed a major challenge. However, the government of Indian Punjab quickly allocated productive assets such as land for cultivation, loans for housing, skill development and establishment of industrial areas near cities to rehabilitate the refugee population (Randhawa, 1954; Jain, 2016). Several institutional reforms were initiated with the objective of generating capability for building production base both in agriculture and industrial sectors. This was supplemented with heavy public investment in electricity generation, irrigation system, credit

network, agriculture marketing system, agriculture research and extension system and rural road networks. The web of institutional arrangements played a catalytic role in revamping and revitalizing modern agriculture production system and small-scale industrial development in Punjab.

During this period of revival of Punjab's economy, the state was divided, again, into present day Punjab, Haryana and Himachal Pradesh on November 1, 1966. The division of Punjab coincided with a manifold increase in agricultural productivity due to the new technology of high yielding varieties of seeds, commonly known as the Green Revolution. On the one hand, the division of Punjab on the basis of language made it a Sikh majority state but on the other hand, it was politically weakened due to reduction in the number of members from Punjab in both the houses of parliament.¹ However, with the Green Revolution, Punjab became a net exporter of food to other states of India and this increased its economic strength. The gain in economic power, to some extent, compensated for the new, smaller Punjab's decreased political representation. Reduction of poverty and rise of per capita income were remarkable achievements of the Punjab economy. In the post Green Revolution period, Punjab became an iconic state (Basu, 2016) and was ranked number one among the major Indian states in terms of per capita domestic product. Punjab became a role model, a state whose success other states in India and in fact, other developing countries, wanted to emulate. However, the glory of Punjab began to fade sooner than expected due to diminishing returns and limitations of agriculture-based development. Thus, the political turmoil of the 1980s, though colored by issues of religion, territory and water, was ultimately caused by economic stagnation. The political turmoil had disastrous effects of the state's well-functioning institutional arrangements and made public policy dysfunctional for two and a half decades. Punjab remained so engrossed in dealing with the conflict that it could not draw any benefit from the national economic reforms initiated after July 1991. During this period, Punjab's relative rank among Indian states in terms of per capita income fell from first to seventh (Government of India, 2015). Why did Punjab's economy trail behind that of other Indian states in the post-reforms period? Can Punjab's economy be restored to its former glory? These are the vital questions that need to be investigated to identify strategies that will revive and rejuvenate Punjab's economy. This paper is a modest attempt in this direction. The rest of the paper is organized in four sections. The following section examines the evolution of the structure of Punjab economy to ascertain weaknesses responsible for slow progress in the post-reforms period. In section three, factors that caused Punjab to overstay in agriculture are identified. Alternative processes of economic development and new initiatives are outlined to provide fresh perspectives to policymakers. Conclusions and policy implications that emerge from this analysis are described in the last section.

Evolution of the Structure of Punjab Economy:

Long-term changes in the structure of an economy are fairly indicative of that economy's performance. Economic growth, triggered by technological and institutional changes, determines the rate and spread of economic transformation of an economy over time (Kuznets, 1966). Evolutionary trends of advanced industrial countries captured through careful empirical analysis over two centuries show a high degree of correlation between an increase in importance of the industrial sector and the level of economic development measured by per capita income (Kuznets, 1966; Chenery, 1960). Importantly, these studies show that co-evolution of the production structure and work force/employment structure has not only shifted the workforce from traditional economic activities to more productive, non-traditional sectors but has also been accompanied by dramatic changes in institutional arrangements, improved socio-economic conditions and even, perhaps, building of a composite culture with relatively more equality in opportunities. It has also improved productivity of traditional sectors of the economy by building capacity and capability to meet demands for food and raw materials. This experience of the advanced economies led to a demonstration effect and inspired developing economies to catch up with them.

In accordance with the economic development consensus in the post-World War II period, the State was entrusted with the responsibility to lead the economy in structural transformation through investment programs (Nayyar, 2013), the political leadership in India (including Punjab) wanted to steer the economic transformation process in the post-independence period. Punjab benefited from this development consensus and a state-led investment program during the period of 1950s and early 1960s. But, the war with Pakistan in 1965 generated fear both in the private corporate sector and with respect to public sector investment by the Union government. The war and the fear it generated deprived Punjab of large-scale industrial units, due to its proximity to the India-Pakistan border. Soon after the war, the Indian government suspended the planning process and declared plan holidays from 1966-1969. The desperate food shortages of the early 1960s led to India's PL 480 agreement with the USA to secure food aid. As agricultural productivity started rising in Punjab, the Union government increased investment in the agriculture sector of the state and established a system of public procurement at minimum support prices. Minimum support prices and other concessions in the form of subsidies on seeds, fertilizers and farm machinery incentivized farmers to make further investments in agriculture and the agriculture sector looked promising as a means to reduce poverty and raise per capita income while creating employment opportunities. Both the central and state governments mandated development of seed varieties that only pertained to food grains as part of the agriculture innovation system (Gill, Singh and Sharma, 2016). Therefore, rice and wheat dominated the agriculture of Punjab. This has significantly affected the growth patterns and structure of Punjab's economy.

Punjab's economy on the eve of the Green Revolution was predominantly agrarian, with agriculture accounting for 52.85 per cent of the state domestic

product (SDP) in 1966-67 (L. Singh and S. Singh, 2002). Agriculture production contributed nearly 41 per cent to the SDP and livestock contributed 10.7 per cent. Thus, agriculture production was an important component of Punjab's economy and growth performance of this sector was a crucial and catalytic agent for the performance of the other sectors of the economy. Agriculture's contribution to the state economy increased marginally to 54.3 per cent in 1970-71 and thereafter it started to decline. However, within the agriculture sector, the rate of growth of agricultural production averaged more than 3 per cent per annum but income from livestock grew at 6.1 per cent during the period 1966-67 to 1979-80. During the same period, the growth rate of the combined agriculture sector was nearly 4 per cent per annum. It is important to note that SDP from livestock increased dramatically at nearly 5 percentage points between the period 1966-67 and 1970-71 and continued to increase marginally thereafter, but there was a continuous and slow decline in the share of agriculture proper in the SDP. Other sectors such as banking and insurance, electricity, manufacturing, public administration and transportation, storage and communication showed high growth potential during the period 1966-67 to 1979-80. During the 1980s, the agriculture sector's relative contribution to the SDP declined by nearly 10 per cent even though growth of the agriculture sector peaked during the decade of the 1980s at 5.15 per cent per annum. The manufacturing sector gained most during this decline in the relative contribution of agriculture, with the sector growing at 7 per cent. Other sectors gained marginally from the decline of agriculture sector (L. Singh and S. Singh, 2002). It is important to note that the decade of the 1980s was also a period of turmoil, even though growth momentum of the previous decade was sustained in this decade. This decade has also witnessed internal liberalization of the Indian economy but democratically elected governments in Punjab remained very fragile with President's Rule being imposed on the state for long periods of time to control internal turmoil in the state. This turmoil not only disrupted the normal political processes, governance arrangements and investment plans of both the private and government sectors but also shifted emphasis from economic development to law and order. This kind of shift reduced the level of investment in general, and strategic investment for changing the engine of growth of the Punjab economy, in particular.

National-level economic reforms in India in July 1991 shifted the previously widely held developmental consensus to the more market-oriented "Washington consensus". Reforms reduced tariff walls and also lifted controls on investment. This dramatic change in economic policy was expected to generate new opportunities and challenges for India in general, and for Punjab state in particular. It was expected that constraints on economic development of Punjab would be overcome and the economy would have new opportunities for growth. The post reform economic growth experience showed a deceleration of economic growth (L. Singh and S. Singh, 2002). Table 1 presents the plan wise sectoral rates of economic growth from 1992-93 to 2014-15 identified by cycles of India's five-year plan. During this period, the growth rate of NSDP remained

slow not only compared with the 1980s but much below the all India level as well as with other major fast growing states of India (Table 2).

Table 1: Growth rate of State Domestic Product Punjab from 1992-93 to 2014-15

Sectors	Year				
	Eighth five-year plan (1992-93 to 1996-97)	Ninth five-year plan (1997-98 to 2000-01)	Tenth five-year plan (2002-03 to 2006-07)	Eleventh five-year plan (2008-09-2011-12)	Twelfth five-year plan (2012-13 to 2014-15) (3 years average basis)
Primary Sector	3.80	1.90	2.28	1.81	0.6
Secondary Sector	7.10	4.97	7.75	7.65	1.15
Tertiary Sector	5.78	5.80	5.96	9.40	8.14
NSDP	4.81	3.97	5.11	6.85	5.52

Source: GOP (2006 and 2015).

Table 2: Growth Rates in SDP across major Indian States

Sr. No.	States/UTs	Averages for Plan Periods (% per annum)			
		Eighth Plan 1992-97	Ninth Plan 1997-2002	Tenth Plan 2002-07	Eleventh Plan 2007-12
1.	Andhra Pradesh	5.4	5.5	8.2	8.2
2.	Bihar	3.9	3.7	6.9	9.9
3.	Gujarat	12.9	2.8	11.0	9.5
4.	Haryana	5.2	6.0	9.0	9.0
5.	Karnataka	6.2	5.8	7.7	7.2
6.	Kerala	6.5	5.2	8.3	8.2
7.	Madhya Pradesh	6.6	4.5	5.0	9.2
8.	Maharashtra	8.9	4.1	10.1	8.6
9.	Odisha	2.3	5.1	9.2	7.1
10.	Punjab	4.8	4.0	6.0	6.7
11.	Rajasthan	8.0	5.3	7.1	8.5
12.	Tamil Nadu	7.0	4.7	9.7	7.7
13.	Uttar Pradesh	5.0	2.5	5.8	7.1
14.	West Bengal	6.3	6.5	6.2	7.3
15.	Himachal Pradesh	6.5	6.3	7.6	8.0

Source: GOI (2013).

Analysis of the numbers in Table 1 clearly brings out the fact that as the turmoil in Punjab started subsiding the rate of growth also decelerated from the eighth five-year plan (1992 to 1997) to the ninth five-year plan (1997 to 2002). As

growth accelerated in the Indian economy in the first decade of the twenty-first century, growth of Punjab's economy has also improved marginally, but its growth rate remained much below the national average. The sectoral growth rate experience showed that the agriculture sector has dramatically changed the course of development. The rate of growth slowed down from 3.80 per cent from the eighth five-year plan to 1.90 per cent in the ninth five-year plan. The growth rate improved marginally before slipping to 1.80 per cent per annum in the eleventh five-year plan. During the past three years (2012 to 2015), growth was little higher than half a per cent per annum. The services sector has consistently and continuously increased its rate of growth during the post reform period but it surpassed even the secondary sector rate of growth in the eleventh five-year plan. Thus, changes in the sectoral growth rates also altered the structure of Punjab's economy, as can be seen through the sectoral shares of SDP during the period 1990 to 2014 presented for five year periods in Table 3.

Table 3: Sectoral Distribution of State Domestic Product of Punjab

(1980-81 prices)

Sectors	1990-91	1995-96	2000-01	2005-06	2010-11	2014-15
Agriculture and livestock	47.63	44.21	36.02	32.37	29.39	27.38
(a) Agriculture	30.69	26.54	25.50	21.35	20.17	16.78
(b) Livestock	16.94	17.67	10.52	11.02	9.22	7.78
Forestry and logging	00.59	00.50	0.32	1.21	2.08	2.50
Fishing	00.09	00.17	0.27	0.30	0.22	0.32
Mining and quarrying	00.02	00.00	0.01	0.02	0.01	0.03
Manufacturing	16.27	20.12	14.92	14.03	16.63	14.12
Electricity, gas and water supply	02.45	02.46	3.31	2.24	1.27	2.69
Construction	03.74	03.83	4.89	7.68	7.54	6.49
Trade, hotel and restaurants	11.33	11.12	12.52	13.10	11.68	13.03
Transport, storage and communication	02.32	02.58	5.22	5.77	4.89	5.76
Banking and insurance	04.67	05.23	4.48	4.87	5.60	6.07
Real estate ownership of dwelling and business services	03.20	02.62	4.60	4.52	4.40	9.27
Public administration	03.28	03.26	4.74	4.38	4.52	5.43
Other services	04.32	03.89	8.70	9.51	10.77	9.73

Source: GOP (2006 and 2015).

Agriculture's share in SDP declined from 47.63 per cent in 1990-91 to 27.38 per cent in 2014-15. Both crop production sector and livestock declined dramatically during the post economic reforms period. It is important to note that manufacturing also recorded some marginal decline in its relative position during this period. The loss of relative positions of these two productive sectors

was compensated for with the rise of the services sector. Among services, the category of 'other services' gained substantially followed by public administration and financial services.

Table 4: Gross fixed capital formation to gross national product in India and Punjab

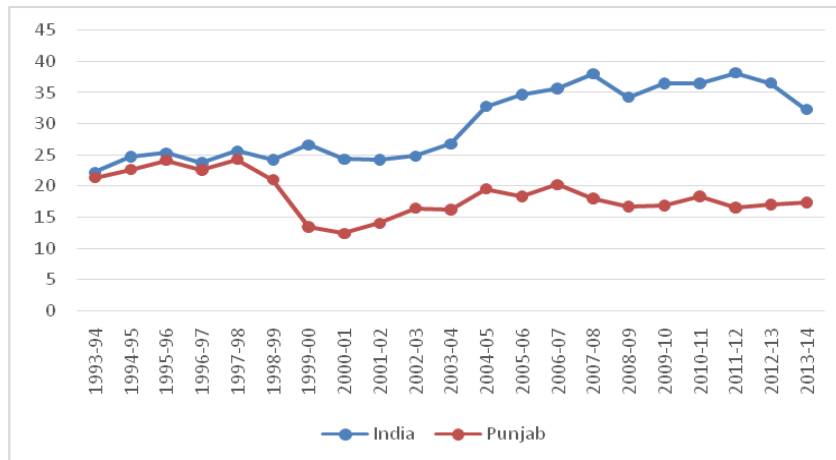
Year	India	Punjab
1993-94	22.2	21.3
1994-95	24.7	22.6
1995-96	25.3	24.1
1996-97	23.7	22.5
1997-98	25.6	24.2
1998-99	24.2	21
1999-00	26.6	13.4
2000-01	24.3	12.4
2001-02	24.2	14
2002-03	24.8	16.4
2003-04	26.8	16.2
2004-05	32.8	19.5
2005-06	34.7	18.3
2006-07	35.7	20.2
2007-08	38.1	18
2008-09	34.3	16.7
2009-10	36.5	16.8
2010-11	36.5	18.3

Source: GOP (2015) and GOI (2016).

The slowdown of agriculture and manufacturing was fundamentally caused by stagnation of investment at pre-economic reforms levels even though India graduated to a high investment-GDP ratio (Basu, 2016; CDEIS, 2012; Ahluwalia, 2002). The ratio of capital formation to gross state domestic product reached its lowest ebb in the agriculture sector of Punjab (CDEIS, 2012; and Chand, 2008) at this time. This was due to a fall in public expenditure during the 1990s and into the first two decades of the twenty first century. The inflow of investment, both foreign direct investment and corporate investment, was quite slow (L. Singh, 2005) and there has been a dramatic shift of industrial investment from Punjab to its neighboring states (Ahluwalia, 2008). Consequently, the growth performance of Punjab's economy has remained poor in the post-economic reforms period. This is unexpected given that India's investment-GDP ratio in the post-economic reform period had risen to nearly that of China. The divergent investment scenario of Punjab and India seems to explain the divergent trends in the growth rates achieved respectively (Table 4 and Figure 1). On the whole, the history of its economic development experience

reveals that Punjab's rise in SDP and per-capita income has shown dynamism, however this dynamism was lost in the post economic reforms period.

Figure 1: Gross fixed capital formation to gross national product ratio: India and Punjab



Analysis of growth patterns and structural change remains incomplete without understanding structural changes in the work force. As shown in Table 5, there has been a dramatic change in the workforce employed in agriculture in Punjab. The proportion of the work force employed in agriculture as cultivators declined from 42.56 per cent in 1971 to 19.55 per cent in 2011, although there has been a marginal increase in the absolute number of persons employed as cultivators. Similarly, there was a marginal decline in the proportion of work force employed as agriculture laborers during the period under consideration. On the whole, the agriculture sector accounted for 62.67 per cent of the work force in 1971, and this declined to 35.60 per cent in 2011. Similarly, despite an absolute increase in the number of workers in the manufacturing sector there has been a decline in the share of the work force employed in the manufacturing sector from 11.30 per cent to 10.24 per cent over this time period. The share of 'other workers' has seen a steady increase from 26.3 per cent in 1971 to 54 per cent in 2011. It is pertinent to point out here that the gap between the share of the agriculture sector in SDP and the share of work force employed in the agriculture sector continued to remain almost the same during the period of 1971 to 2011. This reflects the fact that the economy continues to be tilted in favor of the agriculture sector. Thus, it is not an exaggeration to say that the engine of growth of Punjab's economy is still its agriculture sector. As the growth performance of that sector declined in the post-reforms period, per capita income started lagging behind relative to that of several other dynamic Indian states causing Punjab's economy to slip from top rank to middle income status during the past two and a half decades (Government of India, 2015).

Table 5: Changing structure of workforce across industrial categories in Punjab

Year	Cultivators	Agriculture workers	Industrial workers	Other workers	Total workers
2011	1934511 (19.55)	1588455 (16.05)	1013553 (10.24)	5360843 (54.16)	9897362 (100.00)
2001	2099330 (22.96)	1498976 (16.40)	769047 (8.41)	4774407 (52.23)	9141760 (100.00)
1991	1917210 (31.44)	1502123 (24.63)	749136 (12.28)	1929905 (31.65)	6098374 (100.00)
1981	1767286 (35.86)	1092225 (22.16)	665442 (13.50)	1402806 (28.47)	4927759 (100.00)
1971	1665153 (42.56)	786705 (20.11)	442075 (11.30)	1018664 (26.03)	3912592 (100.00)

Source: Government of India (2011), and Government of Punjab, Statistical Abstract, various issues.

Note: Figures in parenthesis are percentages.

Another important feature of the evolution of the economy is improvements in social indicators of welfare. The human development index of Punjab remained quite high, at 0.742, which ranked fourth among Indian states but the proportion of the population classified as the 'multidimensional poor' was 24.6 per cent (Dreze and Sen, 2013). However, in terms of the multi-dimensionally poor,² Punjab is ranked just next to Kerala. In terms of life expectancy at birth, infant mortality rate and maternal mortality ratio, Punjab is way behind Kerala. Even Maharashtra and Tamil Nadu has forged ahead of Punjab in terms of human development indicators. Recent measures show that Himachal Pradesh is as well off or slightly better off than Punjab along indicators of welfare (GOI, 2016, A153). Punjab is ranked ninth among Indian states on a composite index of school infrastructure at primary level in 2005-06 with Punjab's index measuring 0.75 (Chakraborty, 2009). Punjab's inter-district variations in per capita SDP measured through the Gini coefficient is 0.469, which was highest among the Indian states (Dubey, 2009, p.227). The recent household-level studies conducted in Punjab reveal inequality increasing at a rapid rate. While estimating the Gini coefficient based on household assets, productive assets and household income across agriculture labor and farming categories, Satjit Singh (2008) found very high values of the Gini coefficient in all the three districts examined. The recent Gini coefficient estimates based on 315 and 290 sampled households for the two periods, that is, 2005-06 and 2011-12 respectively also reveal very high Gini coefficients (0.46 in 2005-06 and 0.49 in 2011-12) for rural Punjab (Vatta and Pavithra, 2016). These studies provide enough evidence of rising inequality overtime of various kinds across rural households in Punjab. However, this is contrary to the earlier contribution of the Punjab model of

economic development based on modern agriculture that displayed equitable and inclusive growth in Punjab (Bhalla and Chadha, 1983).³

Causes and Consequences of Over Stay of Punjab Economy in Agriculture

Agricultural innovations and their application in Punjab improved the fortunes of the rural population from the mid-sixties, with Punjab witnessing very high increases in yields. In the case of paddy, yield increased from 1,009 kg per hectare in 1960-61 to 3,741 kg per hectare in 2011-12. This is particularly striking because Punjab went from having lower than average yield in paddy among Indian states prior to the Green Revolution to being one of the states with highest yields in paddy after the Green Revolution. Punjab's traditional crop – wheat - performed even better, with near quadrupling of yields, that is, from 1,244 kg per hectare in 1960-61 to 5,097 kg per hectare in 2011-12 (Sidhu, 2016). This is the result of multidimensional innovations in seed varieties, infrastructure, marketing and institutional arrangements (N. Singh, 2015). The long drawn investment in agriculture in the post-Green Revolution period generated specialization and evolved agricultural capabilities that resulted in per capita income which was highest among the major Indian states and high consumption levels also reflecting improvement in welfare of the population of the state (Shergill, 2012). The agriculture sector of Punjab became not just the nation's answer to deficiency in food grains and provided it with food security, but also turned out to be an engine of growth for Punjab's economy. The agriculture sector generated substantial amounts of surplus and initiated, through both forward and backward linkages, all-round economic development. Small-scale agriculture implements' industry, transport and services emerged, along with social infrastructure and the spread of health and education in Punjab (Bhalla, 1995). Agriculture-led economic development gave Punjab's economy the status of a role model state for capitalist, economic development in a developing economy. But this model of capitalist development was driven by public investment and state support, with a focus on enhancing productivity of food grains and achieving higher production every year by increasing area under cultivation of wheat and paddy, usage of fertilizer, pesticides and insecticides, irrigation, mechanization, as well as marginal increments in minimum support prices and subsidies. The sustained rise in production of food grains, even during drought years, is based on an assured irrigation system mainly provided through tubewells, while exploiting ground water. Tubewell installation increased from 600,000 in 1980-81 to 1,384,000 lakh in 2012-13 (Government of Punjab, 2013). It is important to note that electricity-operated tubewells almost quadrupled from 2.8 lakh to 11.91 lakh during the same period. All non-electric tubewells are diesel operated, and the absolute numbers of diesel-operated tubewells have been decreasing from 1980-81 to 2012-13. The monsoons in India fail often, especially after every fourth year and sometimes the country has had to face two consecutive years of drought. Punjab's food grains helped the nation tide over droughts that hit states with rain-fed agriculture. And while marginal increases in food production of India's food-deficit states have reduced

their reliance on Punjab (Chand, 2008), the state still remains an important source of assured food grains for the nation. Thus, the Green Revolution has heralded commendable achievements for Punjab.

These accomplishments aside, Punjab's agriculture sector has been reeling under serious crisis. The signs of crisis started emerging in the late 1970s, and they developed into a full-fledged crisis in the early 1980s. It was recognized that the potential of Green Revolution technologies was exhausted. Several scholars presented empirical evidence to prove the slowdown in agriculture productivity and rise in farming income (Johl, 1986; Chand, 2008; and Sidhu, Joshi and Bhullar, 2008). Apart from technological constraints, the long run sustainability of Punjab's food grains dominated agricultural production was questioned on the basis of over exploitation of land and groundwater resources (Swaminathan, 1996; Karte and Scheunert, 1986; Johl, 1986). The large-scale burning of biomass, that is, paddy and wheat stubble, after harvest causes air pollution. Moreover, the rising cost of agriculture production due to increasing input intensity, especially after the economic reforms initiated in July 1991 and falling agricultural income broke the backbone of small and marginal farmers. Changing weather conditions and resultant uncertainty regarding returns from agricultural production pushed a major chunk of the peasantry into debt traps (Sidhu, Joshi and Bhullar, 2008; and Singh, Bhango and Sharma, 2016) and led to high suicide rates among farmers and agricultural laborers. This was despite warnings from scholars who studied Punjab's agriculture and farming households (Bhalla and Chadha 1983; Chadha, 1986). Constraints of the capitalist model of economic development in Punjab were examined intensively and alternative workable policy suggestions to take the economy out of structural stagnation had been envisioned by scholars as early as the late 1980s (Gill, 1988). They argued that Punjab's overstay in agriculture and economic stagnation would lead to a vicious cycle, and recommended full-fledged industrialization to save Punjab from the impending crisis and to avoid the so-called middle-income trap. Acknowledging the gravity of the situation, agricultural economists and policy makers suggested diversification of agriculture from low value-added to high value-added crops but this strategy failed to provide the desired impetus due to faulty design and unsustainable organizational arrangements as well as the apathy of the government (S. Singh 2016, Johl, 1986).

It is pertinent to point out here that the long overstay of the Punjab economy in agriculture has specificities ingrained in the nature of the state's polity, public policy and locational factors. In post-partition Punjab, the political leadership identified Punjab's fertile soil as well suited for agriculture and developed and implemented public policy for promoting agricultural production as priority number one. The food shortages were seen as a significant hindrance to the industrialization strategy adopted by the national government. Since the Congress party was dominant in the political scenario of Punjab, the emphasis on agricultural investment and solving the nation's problems was a fundamental priority. But after the Green Revolution and formation of a Sikh majority state in 1966, the religion-based Shiromani Akali Dal emerged as custodian for

matters related to Punjab. Punjab witnessed political turmoil caused by successive short-lived governments when the Shiromani Akali Dal, in alliance with the Jan Sangh and leftist parties, replaced the Congress party in government in 1967 (Gill and Singhal, 1984). The Akali Dal developed a strong support base among Punjab's peasantry by championing their cause, securing procurement of agricultural production by the Union government, increasing minimum support prices and providing other facilities and subsidies. In a way, the Shiromani Akali Dal prolonged Punjab's overstay in agriculture by perpetuating policies for intensification of agriculture and pursuing a religious agenda that marginalized the left and democratic forces in the polity of Punjab. Whenever the political leadership faced problems related to stagnation of structural transformation of Punjab's economy, they diverted attention away from these problems by raising religious concerns or emphasizing long-pending issues related to territory, transfer of Chandigarh, and river water sharing. This political move of diverting attention to other issues also served the interests of the Congress party in power at the Centre and thus, they joined other political parties in Punjab to push the state into crisis in the late 1970s and early 1980s - a crisis which continued for another decade.

Thus, Punjab's political leadership curbed positive social democratic movements that were working to bring the main economic issues to the fore. Even during the post liberalization period, after restoration of democratic rule, Punjab continued to remain in the same mode of its production structure and the wheat-paddy rotation was perpetuated. Despite the 25 years of democratically elected governments (10 years' of Congress party and 15 years of Shiromani Akali Dal and BJP alliance in power, with intervals), public policy that perpetuates the existing production system has remained in the saddle. Due to the lack of vision and will of the political leadership in pursuing economic transformation, no long-term or short-term measures were adopted to shift the economy from agriculture to other higher stages of economic development. While this is the fundamental cause of overstay of Punjab in an agrarian economy, other historical factors such as its long border (553 kms) with Pakistan, the continuous threat of war, and the actual wars of 1965 and 1971 generated a situation that is not conducive to heavy investment in industry. The recent government order to clear 10 kilometers adjoining the entire border with Pakistan of any activity is evidence of disturbed conditions and instability that hinders entrepreneurial activity. Licensing policy and equity concerns of the central government have also played an important role in non-location of public industrial enterprises in the Punjab state (P. Singh, 2016). A recent study by one of India's prominent policymakers supports this argument and provides evidence of transfer of fewer resources to states like Punjab (Ahluwalia, 2013). The exploitation of religion for political purposes has generated communal tension and consequent insecurity of life and property. In turn, this is detrimental to investment in Punjab. Rent-seeking behavior of both the political leadership and the bureaucracy has made Punjab unattractive to industrial investment, both of the diaspora and of the private corporate sector. These factors together have had an important role in discouraging industrialization in Punjab, despite the

favorable conditions and investable surplus created by the high productivity of the agriculture sector (L. Singh and N. Singh, 2016).

Alternative Strategy for Envisioning 21st Century Punjab

Punjab is in dire need of economic transformation not just to overcome constraints to development but also to make economic development more inclusive and sustainable. Therefore, an attempt is made in this section to outline a strategy for changing the course of Punjab's economic development in order to achieve the dual goals of inclusive and sustainable development. The suggested strategy can succeed only if certain preconditions are met. First, dysfunctional public policy and development institutional arrangements must be addressed. The indicators of governance performance across Indian states show that Punjab has slipped from number three to five during the period 2001 to 2011. It is significant to note here that when this index is development-adjusted, Punjab's rank falls further to seven. Thus, Punjab's governance performance is deteriorating relative to other Indian states (Mundle, Chowdhury and Sikdar, 2016). In terms of fiscal performance indicators, Punjab was ranked 17th in 2001 and 18th in 2011. Punjab's deteriorating fiscal situation and the state being bracketed with the bottom ranking Indian states is a cause of serious concern. Since fiscal policy is an important instrument of public policy to direct economic activities of the state, arresting the deteriorating secular movement of this trend is of utmost importance in reviving the economy of Punjab.

Second, political leadership needs to overcome petty considerations and heed saner advice and input of intellectuals working in the public interest. They have to learn to use policy advice to reconcile their electoral interests and the long-term interest of the state and its future. These interests have been misaligned for a long period of time, causing the state to be marginalized in national and international reckoning and be considered a basket case. The political leadership has to be willing to take corrective measures in the larger interest of Punjab's economy and its transformation. However, competition between the two dominant parties and switching of the party in power over the last 50 years had made political leadership naïve and complacent without challenges. However, the recent arrival of a third political party - the Aam Admi Party (AAP) - has created a stimulating political environment for the older political leadership to come out of their slumber and either perform or perish. This new political dynamism has generated a hope for change in attitudes and openness to ideas regarding changes to the economy to rejuvenate Punjab.

Punjab is known for its entrepreneurial skills and its capacity to rise from adverse circumstances. Overcoming the current economic crisis and transforming Punjab's economy will not be possible without generating alternative economic opportunities for positive and gainful employment in highly productive economic activities. Presently, the workforce's skill base is very weak. In an intensive study, Brar (2016) shows the Punjabi workforce lags other states not just in skill base, but also in reading and arithmetic problem solving at the relevant age categories. This discouraging trend can be explained

by the paucity of investment in the education sector. Without adequate investment, schools lack appropriate infrastructure and are unable to hire well-trained teachers and thereby jeopardize the quality of Punjab's future human capital. This situation was especially pervasive after the turmoil of the 1980s when public institutions were allowed to suffer and decay. Therefore, Punjab's educational infrastructure and curriculum need to be upgraded to meet future challenges and realize opportunities. Public investment in education and regulation of the private sector educational institutions can ensure that quality education is imparted, especially to the downtrodden sections of the population, to create an inclusive, sustainable and healthy Punjabi society.

To rejuvenate Punjab's economy, the investment-SDP ratio needs to be increased to the level of the Asian tigers. This requires sustained efforts of the state government, Union government and private corporate as well as small investors. Since Punjab is a border state of India, tapping investment from external sources is difficult unless political leadership successfully lobbies for a peaceful relationship with Pakistan, opens the border for further trade, and eases difficulties for travel on both sides (e.g. granting visas). It is also important that the state government further impress upon the Union government the need to either dismantle tax concessions to neighboring states or even out these concessions so that Punjab is not at a disadvantage compared to neighboring states when vying for investment. This will not only stabilize existing industrial investment but will also encourage the existing industry to expand and initiate new plans for investment. The industrial sector requires technological upgrades to assume the status of the engine of growth of Punjab. Existing industry is relatively small in size and cannot exploit economies of scale and scope. Therefore, it is important that the existing industries shift from low productivity-low wage to high productivity-high wage activities. Punjab should encourage existing industries to establish collaboration with industries of East Asia for transfer of technological know-how. Technology generation at home is the only means to long-term growth; thus the state government has to take the lead in investing in industrial technologies. The state can also develop an incentive system to encourage industrial units to invest in R&D in-house and engage in continuous innovations so that Punjab's industries can thrive rather than yield in a fiercely competitive industrial environment. The means to achieve this is by the state government emulating the East Asian countries to initiate R&D expenditure and increase it to 3 per cent of SDP. Technology production institutes should be established and managed to generate high-level linkages between public research institutes (PRIs) and industry.

Another important feature of the production structure of the Punjab economy is that it has very weak inter-sectoral linkages (I. Singh, 2016). In fact, the existing industrial sector neither generates demand at the local level nor uses local raw material in production of goods and services. The service sector is also stand-alone and is not being absorbed into the production structure of the economy. Such a production system that lacks in interdependence can generate crisis-like situations and changes in the production structure are relatively difficult. For example, the agriculture sector is oriented towards food grain

production and catering to national demand for food. A very small proportion of it is being processed. Therefore, agriculture-industry linkages are very weak and the sector is facing a crisis-like situation with frequent suicides among small, marginal farmers and agricultural laborers. The small land holdings are increasingly becoming non-viable and their cultivators highly indebted. Moreover, shrinking employment opportunities in the agriculture sector are generating a surplus of agricultural laborers. In the absence of alternative remunerative employment opportunities, both in villages and also in nearby urban centers, the unemployed are in dire straits and prone to suicide. Therefore, there is an urgent need to attend to this deepening economic crisis.

Agriculture in Punjab is facing multiple crises. It is not remunerative for the majority of the small and marginal farmers due to high water intensity and chemical uses. In addition, it is also environmentally not sustainable. Therefore, the agriculture sector needs to be diversified from the wheat-paddy rotation to alternative, more sustainable agriculture. The agriculture policy needs to shift focus from increasing food grain production to improving quality and enhancing value addition. This two-pronged strategy needs investment in the agriculture innovation system to improve the quality of existing crops and develop improved seed varieties for new crops. Crop area planning can be more environment-friendly and can lower water consumption. The traditional cotton belt, which has quickly switched to cultivating paddy, should be incentivized to shift back to cotton. Farmers growing cotton can be incentivized by two methods. One, the government should develop water-recharging systems which can be used to recharge the water table with excess rainwater. This will not just conserve water but will also prevent cotton crops from being destroyed by excess water standing in cotton fields. Two, the government should install public tubewells to both lead to a more equitable distribution of water and prevent over-exploitation of water. Moreover, area cropping can be beneficial in other parts of Punjab too, considering the general soil conditions and aquifer levels in the state. Public investment is necessary to make this shift from the existing production structure to the highlighted alternative system that is more remunerative, inclusive and sustainable.

The existing agricultural production, marketing and institutional system, which was progressive at the early stage of the Green Revolution has turned highly regressive and needs overhauling. The agricultural innovation system is not only older and wearing out, but is also dying a slow death. Punjab needs to change its agricultural innovation system. Its direction should be to provide an enabling environment, especially to smallholder farmers. The rejuvenation strategy may be geared towards harnessing new technological opportunities for alternative crops, at least to paddy which is highly water-consuming. Farmers should be enabled to shift to new crops, with processing facilities located in the vicinity of the village that employ local labor. New private investment in agro-processing activities located in villages should be encouraged with a mandatory clause to hire local labor. The integration of agriculture with manufacturing activities along with improving value chains, as in Taiwan and other East Asian countries, will not only increase the income level of the local community but

also create an environment of reinvesting the surpluses realized from the systemic change. However, the real benefits will flow into the local community only if the organization of production, processing and marketing is changed from private enterprises to modern member-based cooperatives. This will not only eliminate monopolistic private intermediaries but also create enough opportunities to reduce costs and realize economies of scale and scope. This process will generate opportunities for upward mobility in occupations for the local and poor people. Consequently, the successful process of upward mobility will also change social norms and further bring in cultural transformation. Therefore, it is suggested that the one-time switching cost of a successful transition both intra-sector and across sectors be borne (N. Singh, 2015 & 2016). However, the ultimate success of this transition will depend on involvement of stakeholders and their participation in the newly created economic activities (Gill, 2016). In addition, the suggested strategy has the capacity to solve problems of long-term environmental sustainability and make the process of economic development increasingly more inclusive and environmentally sustainable.

Conclusions

Punjab's economy has been performing quite poorly relative to other Indian states in the post reforms period. It slipped from being ranked first in the early Green Revolution period to the category of middle ranking states in the late 1990s. This is the consequence of its over-stay in the agriculture sector - a sector that has stagnated and is facing a crisis of serious magnitude. This paper has examined the evolution of the production structure to identify the major causes of the slowdown of Punjab's economy and recommends an alternative strategy to rejuvenate Punjab's economy.

This paper contributes to the existing literature on Punjab's political economy by identifying the fundamental constraints on the transformation of Punjab's economy. Despite generating agriculture sector surpluses, Punjab has failed to shift its economy out of agriculture and towards industrialization because of factors endogenous to the state. Though the leadership of both major political party alliances of Punjab functioned to reconcile the national needs and goals of food security, the competition between them to capture political power generated political instability and caused their focus to drift away from the state's economic transformation and developmental agenda. Political turmoil in Punjab during the decade of the 1980s made public policy and institutional arrangements dysfunctional and caused a dramatic reduction in the investment-state domestic product ratio. The investment collapse continued to occur even after two-and-a half decades of peaceful democratic rule by the Akali Dal-BJP alliance and the Congress. As this well-functioning and well-governed state became a poorly governed state, its economy overstayed in agriculture. The overstay in agriculture has pushed the small and marginal peasantry into crisis and created environmental disaster. These factors have combined together to increase the rate of suicides in rural areas of Punjab. An alternative strategy to

overcome factors constraining economic transformation of Punjab has been suggested.

It is argued in the paper that Punjab's agriculture and its economy overall need diversification. This change needs to evolve with matching institutional arrangements. Agricultural innovation systems, area crop planning, agro-processing and organizational changes are suggested to move Punjab from a low value added to high value added economy. New marketing strategies are also devised in the paper to capture surpluses to plough back into improving social indicators and human development. The long-term strategy is to systematically overcome constraints to shifting the workforce from agriculture to modern, safer and environmental friendly industrialization. This is usually called green growth. To ensure success of this alternative strategy, it is emphasized that political leadership should reconcile short-term interest of electoral control and long-term developmental needs of the state. The arrival of another political party in the political sphere of Punjab makes this a more possible option for Punjab, conditional on participation of a civil society that can force political leadership to generate new institutional arrangements as well as invest in their revival. The suggested strategy has the capacity to generate an environment through which transformation of the economy for sustainable and inclusive growth can be achieved.

Notes

¹ The population of a state determines the number of representatives of that state in the Lok Sabha and the Rajya Sabha.

² Multidimensional Poverty Index (MPI) underlines the importance of non-income indicators of poverty. This measure of poverty includes health, education and living standards dimensions and captures the severity of deprivation. Each dimension includes measurable indicators. For example, measurement of health includes indicators for child mortality and nutrition. Similarly education also includes two indicators-years of schooling and school attendance. The measure of living standards has six indicators, which are cooking fuel, toilet, water, electricity, floor and assets. Thus, this measure provides intensity of poverty as inferred through deprivation. Each dimension and each indicator within a dimension is equally weighted.

³ Bhalla and Chadha (1983) estimates of rural household income inequality using the Gini coefficient were based on 1,663 sampled cultivating households for the year July 1974-June 1975. The Gini coefficient for household income was 0.336 for the overall sample from Punjab. The sample was further subdivided into three regions. Region I consists of the districts of Amritsar, Jalandhar, Kapurthala, Ludhiana and Patiala and is called central Punjab. The household income Gini coefficient in central Punjab is of the order of 0.356. Region II (Southern-Western Punjab), consisting of the districts of Ferozepur, Faridkot, Bathinda and Sangrur, recorded a lower Gini coefficient of 0.299.

Region III (Semi-hilly Areas) is comprised of Hoshiarpur, Ropar and Gurdas pur and the estimated value of the Gini coefficient was of the order of 0.289.

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