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Sugarcane



Rice (Paddy)



Wheat



Cotton

Mission Statement of API

To provide professional inputs to agriculture policy and recommendations relating to major and minor crops for meeting long-term objectives towards enhancing production.

**Agriculture Policy Institute
Government of Pakistan
Islamabad**

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FOOD SECURITY IN PAKISTAN DEMAND AND SUPPLY SIDE POLICY SIMULATIONS

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Abstract

The main purpose of this paper was to examine the determinants of food security and identify the vulnerable food insecure people in Pakistan, forecast the future food situation through demand and supply side policy simulations. Evaluate problems and challenges of food and nutrition insecurity in Pakistan. The major findings drawn from this paper were the demand side of food security problems has been complicated by an unprecedented increase in population. Forecasting future food situation reveals that whole sale prices of wheat and maize are expected to grow by 5 percent. The results of baseline projections for rice production indicate that it will increase at an average annual rate of 0.68percent beyond the year 2000. The demand side policy simulation assumed that population growth rate will gradually decline from 3.1percent in 1993 – 1994 to 2.0 percent by 2010 – 2011. The supply side policy scenarios assumes that the whole sale prices of wheat, rice and maize will rise at relatively faster rates as compared to those assumed for the baseline solution. Finally, this paper recommends some strategies aimed at addressing problems and challenges of food insecurity in Pakistan.

1. Introduction

1.1 Food security is defined as access by all people at all times to food needed for a healthy life. Any substance that people eat and drink to achieve an adequate nutritional status maintain life and physical, cognitive and social development. This means safe and clean water is an essential part of food commodities. Food has to meet physiological requirements in terms of quantity, quality and safety and to be socially and culturally acceptable. Therefore, food security is achieved if adequate food is available and accessible for and satisfactorily utilised by all individuals at all times to achieve good nutrition for a healthy and happy life (Jahangir, 2007).

1.2 Access to food supply refers to ability of a household to procure through income production and for transfer of adequate food supplies on a continuing basis even when the household is faced with situations of unpredictable stress, shocks or crisis. Such as sudden price rises, the decline or loss of employment and loss of productive capacity because of sudden illness (Anka, 1995).

1.3 Researchers soon found that food insecurity occurred in situations where food supply was available but not accessible due to the erosion of people's entitlement to food which includes their own food productions, income, assets, community support, migration etc (Khan, 2002).

1.4 Consequently, the Committee on food security had to expand the concept of food security to include three specific goals: ensuring adequacy of food supplies, optimising stability of supplies and securing access to available supplies for all who need them. In the process, food security has

become a more complex phenomenon than merely availability of the food (Sofi, 2006).

1.5 In Pakistan, the food security situation is not different from many other developing countries. One third of the population is living below the poverty line. Over forty million people are poor with an income of US\$1 or less per day. Children and women are the major vulnerable groups to malnutrition. According to recent nutrition surveys (NNS, 2011) 58 percent households are food insecure and 42 percent are food secure.

1.6 The shift in emphasis from food production through food security to household food security in the 1980s has brought the household to the front as a target and unit of analysis. Once household food security is ensured, then one can focus on individual nutrition of the household members which depends on women empowerment, food allocation, caring capacity as well as the level of access and quality of health services etc.

1.1 Problem statement

1.1.1 The existence of seven out of nine zones as food insecure in Pakistan is alarming and an eye opener for policy makers and planners, efforts should be made to meet the challenge of food insecurity as a high priority challenge. All the above seven food insecure zones share the same characteristics, they are uneducated, manual workers, have low income are malnourished, jobless, landless, houseless. The Food Security Analysis conducted by the government and NGO's reveals that out of 120 districts in Pakistan, only 46 were food secure, while the remaining 74 districts (62%) were food deficient. Similarly, out of 46 food secure districts only 34 districts were food surplus which catered for the needs of the rest of the country (see Table-2).

1.2 Objectives of the paper

1.2.1 The specific objectives of this paper were: -

- i) Examine the determinants of food security.
- ii) Identify the vulnerable food insecure people in Pakistan.
- iii) Forecast the future food situation through demand and supply side policy simulations.
- iv) Highlight the role of agriculture in food security.
- v) Evaluate problems and challenges of food and nutrition insecurity in Pakistan

2. Determinants of Food Security

2.1 In order to achieve food security, three basic aims must be fulfilled. These are the physical determinants of food security (a) availability of adequate food supply (b) accessibility to food supplies and (c) food utilisation.

2.1 Availability of food for consumption

2.1.1 The most important component of food security is the availability of adequate food for consumption at national, regional and global levels. This is the first requirement of food security. Availability is achieved when adequate food is obtained by the public. Food availability is the total sum of domestic food production, commercial imports, food aid and changes in national stock. The adequacy of food supply has two dimensions enough quantity of food available for the entire population at all times and nutritional adequacy of food to sustain a healthy human life (UN, 2000).

2.2 Access of food to household

2.2.1 Access to food supplies refers to the ability of a household to procure through income, production and for transfer adequate food supplies on a continuing basis even when the households is faced with situation of

unpredictable stress shock or crisis. Such situations could include crop failure resulting from drought, market fluctuations such as sudden price rises, the decline or loss of employment and loss of productive capacity because of sudden illness. Access to food means enough resources to buy food and distribution of food throughout the country so that each household can easily purchase the required amount of food.

2.3 Adequate food utilisation

2.3.1 Access to food supplies does not necessarily guarantee adequate nutrition, adequate consumption of the food or appropriate biological utilisation of the food. For an effective utilisation of food, first there should be intra household equity in the distribution of the food so that each member of the household gets his due share in terms of his requirement. Food utilisation relates to the capacity of an individual to absorb and utilise the nutrients in the food he or she consumes.

2.4 Food insecurity and vulnerable people in Pakistan

2.4.1 In Pakistan, Rana (2000) has summarised the following segments of the society as food insecure and vulnerable which belong to various occupations and are resource poor. All of these groups share the characteristics, they are uneducated and manual workers, have low income and malnourished, jobless, houseless and live in shabby places of the villages, towns and cities. These are low paid seasonal labour, daily paid construction workers, low paid industrial workers etc.

2.5 Food security zones in Pakistan

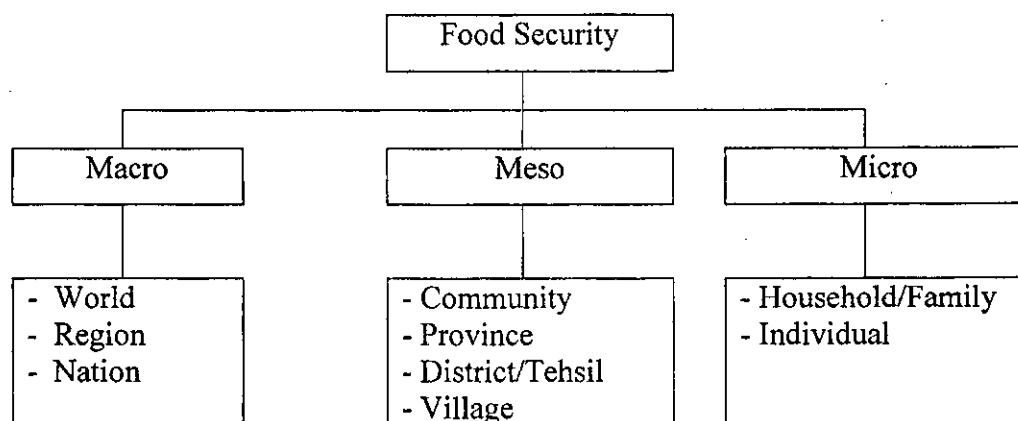
- (i) Rainfed and semi Rainfed zones
- (ii) Drought prone zones

- (iii) Mountain area.
- (iv) Dry lands and deserts
- (v) Coastal region
- (vi) Border area with undiluted land

2.6 Three levels of food security

2.6.1 Three levels of food security or insecurity can be visualised. Food security at national or global level is referred to as Macro-level. At provincial level, district or sub-district levels, it is called Meso-level, while at the household or individual level it is called Micro-level of food security.

Figure-1: Different Levels of Food Security



Source: Gross R.S., H. Pfeifer and Preuss H. J. (2000), Four Dimensions of Food and Nutrition Security Definitions and Concepts, Nutrition and Agriculture SCN News, NO. 20, Pages 20 – 25.

Jahangir K K (2007) Food Security With Special Reference To Pakistan Published By Higher Education Commission Gov of Pakistan Islamabad 2007

3. An Overview of Food Situation in Pakistan

3.1. Pakistan is among those countries where food situation in recent years has not been very encouraging. The demand for food especially wheat which is the main staple food has started to exceed its supply. However, even when the supply situation was better, there were problems with

distribution of food among different segments of the society which lead to widespread under-nourishment of masses (Zaidi, 2005).

3.2 On demand side, food security problem has been complicated by an unprecedented increase in population. The total population of the country have increase to 180 million in the year 2011. The total fertility rate will also remain well above the so called replacement level. At the same time, improvement in health care facilities which have already resulted in a remarkable decline in infant and child mortality rates during 1970, 1992 and 2011 has also contributed towards high population in Pakistan. As a consequence, the per capita availability of food grains which was around 430grams/day during the year 1976/80 is expected to get worse in 2012 and beyond (Qureshi et al, 2011).

3.3 As far as supply of food grown in Pakistan is concerned, it has remained erratic during the last five decades. This can be observed from wide variations in growth rates of food production. The performance of agricultural sector since 1959–1960 amply shows that agricultural production received a tremendous boost in the sixties when new varieties of different crops were introduced and greater stress was laid on the use of modern inputs. This change, which in the literature is referred to as green revolution resulted in the adoption of high yielding or modern varieties of crops especially wheat, rice and cotton. As a result, the average annual growth in Pakistan's agricultural sector was around 5.07percent during this period. However, this euphoria was short lived as stagnation, climatic adversaries and lack of motivation on the part of policy makers as well as farmers resulted in a decline in the growth in agricultural sector to only 2.37 percent during 1970/80 (Siddique and Ahmed, 1994).

3.4 The dynamism was received in the eighties when preferences, especially of rice growing farmers changed to high yielding modern varieties such as Irri-6 and Basmati-385, with this change in attitude, there was an expansion in this sector which grew an average annual growth rate of 5.44 percent during the eighties. In recent years, the production of wheat has been fluctuating around 25 million tonnes, whereas production of rice has gone up to 7 million tonnes.

3.1 Forecasting future Food Situation for Pakistan

3.1.1 The historical pattern of demand and supply situation in the country. However, to generate baseline forecast, there is a need to estimate and supply demand model for major food crops.

3.1.2 Based on Extended Linear Expenditure System (ELES) income and price elasticity of demand have been estimated for different crops. These estimates are based on household level data from Household Income Expenditure Survey (HIES). The supply side estimates for area, yield and input demand functions have been generated on the basis of Mundlak's 1988 supply response approach where technology and quasi-fixed input are endogenously determined (Ahmed and Siddique, 1995).

3.1.3 The forecast presented here not only depend on the estimated coefficients, these also rely on the assumed growth paths of the exogenous variables. The growth rates which generate this growth path have been calculated on the basis of recent trends.

3.1.4 The information provided in Table 1 reveals that the wholesale prices of wheat and maize are expected to grow by 5percent during ex-post and ex-

ante periods which incidentally happens to be the actual growth rate of these prices during past five years. Similarly, the prices of Basmati and Irri varieties of rice expected to increase by 7 percent and 6 percent respectively, while price of fertiliser is expected to increase by 3 percent per annum during forecast period, labour cost is expected to go up by 5 percent as a result of increase in farm wages. Population growth is also expected to grow at the existing rate of 2.0, the per capita income in rural and urban areas are expected to rise by 1.62 and 1.63 percent respectively.

Table-1: Assumed Grow Rates for Selected Exogenous Variables

Wholesale Price of:	Value Added in: -
Wheat and Maize – 5.00	Other Agriculture – 7.00
Basmati – 7.00	Value Added Index in non Agric – 6.00
Irri Rice – 6.00	Population – 2.01
Fertiliser – 3.00	Per capita Income: -
Labour Cost for:	Rural – 1.62
Wheat, Rice and Maize – 5.00	Urban – 1.63

Source: Ahmed A. M. and Siddique r. C. (1995) Food Security in Pakistan can it be achieved. A Paper Presented at the PSDE Conference Islamabad.

3.1.5 Based on these growth paths and the estimated coefficients of supply and demand models, the baseline solution (Projections) up to the year results suggest that although per capita demand for wheat will decline slowly due to negative response to the changes in income, nonetheless, the aggregate demand for wheat will increase, this implies that if population continues to grow at the same rate as it is now, the total demand for wheat will increase at a tremendous pace. Similarly, the expected demand for rice and maize will roughly double. But since rice is not a major food item of consumer budget in Pakistan, the income effect is expected to dominate the population growth effect.

3.1.6 The production of wheat on the other hand is expected to raise at a fast enough rates to match the rising domestic demand. Similarly, self sufficiency in maize will also be at stake during the next 15 years. From a maize surplus economy, the country will barely fulfil its food and feed needs (Ahmed and Siddiqui, 1995).

3.1.7 As far as baseline projections for rice production are concerned, the results indicate that it will increase at an average annual rate of 0.68 percent. This growth will, however, accelerate to over 4 percent per annum. The overall growth of rice production during forecast period will be 2.81 percent.

3.1.8 Since the demand for rice will be increasing at a faster rate (3.97percent), it will exert pressure on Pakistan's rice exports. However, if the baseline scenario prevails, then Pakistan will continue to export around one million tonnes of rice during the next fifteen years (Siddiqui and Ahmed, 1994).

3.2 Demand Side Policy Simulations

3.2.1 The demand side policy simulation concerns with controlling population growth, improvement in the distribution of income and the growth of per capita income in urban and rural areas, for the policy experiment under consideration, it is assumed that population growth rate will gradually decline. In particular, this experiment assumes that income growth in rural areas will be 1.90 percent per annum and the same for urban areas will be 2.81 percent per annum. This scenario further assumes that inflation rate will remain stable i.e. all prices will change at the constant rate, and that will not change overtime.

3.2.2 The results reported in Table-3 confirm that slowing down of population growth will have a favourable impact on wheat demand and growth in per capita income will influence rise in demand. The demand for wheat will decline from 26.5 million tonnes under baseline solution to 24.3 million tonnes under the present policy shock. This calls for appropriate policy measures to control population and raise per capita income.

3.2.3 Similarly, this policy scenario will leave a beneficial demand effect on rice and maize. This outcome is promising at least for two reasons, first this scenario assumes a gradual decline in population which is more realistic as compared to what has been assumed in the baseline solution and second the income growth in urban and rural areas which this policy experiment postulates is already prevailing in the Provinces of Punjab and Baluchistan.

3.2.4 By channelling the information and by adopting consistent policies, there is every likelihood that the growth pattern per capita income of the Punjab and Baluchistan could be replicated in the Provinces of Sindh and the NWFP as well (Ahmed and Siddiqui, 1995).

3.3 Supply side policy simulations

3.3.1 The supply side scenario assumes that the wholesale prices of wheat, rice and maize will rise at relatively faster rates as compared to those assumed for the baseline solution. In particular, it has been assumed that: -

- (a) The price of wheat increase by 10 percent as against 5 percent assumed in the control solution.
- (b) The price of Basmati rice will increase by 9 percent as against 7 percent assumed in the control solution.
- (c) The rate of growth of Irri rice will decline to 4 percent as against 6 percent for the baseline solution.
- (d) The price of maize will increase by 6 percent instead of 5 percent.

3.3.2 The wholesale prices of wheat, rice and maize will be output increasing. The production of rice will increase as against 4889 thousand tonnes in the baseline solution.

3.3.3 Consequently, given the demand pattern, the exportable surplus of rice and wheat will increase.

3.3.4 Finally, price incentives for the farmers will result in an increase in maize production. However, as expected, the effect will not be as expected, the effect will not be as pronounced as the suggested increase in price in real terms is not very significant.

3.4 Food Security Analysis (FSA)

3.4.1 The world food programmes embark on a comprehensive Food Security Analysis (FSA) exercise in collaboration with a local NGO Sustainable Development Policy Institute (SDPI) Islamabad to identify the food insecure areas of Pakistan at district level. The study addresses the main components of Pakistan's food insecurity. The study focuses on identification of poor vulnerable people in terms of food insecurity through secondary data analysis.

3.4.2 A number of input and output indicators were used including family income/expenditure and nutritional absorption. The results of FSA indicated that out of 120 Pakistani districts only 46 were food secure while the remaining 74 districts 62% were food deficit, see Table-2.

Table-2: Food Security by Assessment of Various Districts in Pakistan

Food Zones	Districts							Total
	Punjab	Sindh	NWFP	Baluchistan	Northern Areas	AJK	FATA	
Extreme Deficit	3	2	17	12	4	7	7	52
High Deficit	1	1	3	5	-	-	-	10
Low Deficit	3	1	3	4	1	-	-	12
Sufficient Production	6	2	1	3	-	-	-	12
Surplus Production	21	11	-	2	-	-	-	34
Total	34	17	24	26	5	7	7	120

Source: Food Insecurity in Rural Pakistan 2003 (WFP and SDPI) Collaborative Study, 2004.

3.4.3 Out of 46 food secure districts only 34 districts were food surplus which catered for the needs of the rest of Pakistan.

4. The Role of Agriculture in Food Security

4.1 Agriculture is concerned with much more than production and food growth in food supplies has the dual effect of increasing the income of farming households and reducing the prices for non-farming households, thereby increasing food access and enhancing food and nutrition security for all households. Moreover increased production of food and non food crops stimulates the activities the off-farm economy both in rural areas and in urban manufacturing centres thereby expanding employment opportunities and raising incomes (Khalil, 2007).

4.1 Expanding Area under Crop

4.1.1 The long term prospects for acreage expansion are not bright because a large part of land that could be used for farming is unfit to cultivate for a

number of reasons and will require major investment to recover these lands for cultivation. Thus expanding cropped area can be done to a limited extent. Currently, the area under various crops is shown in Table-3. There has been a small and steady increase in the area under food crops and edible oil.

Table-3: Area under Various Crops (Million Hectares)

Year	Food Crops	Cash Crops	Pulses	Edible Oil
1980 – 1985	11.13	3.16	1.32	0.49
1985 – 1990	11.48	3.40	1.41	0.44
1990 – 1995	12.00	3.74	1.48	0.51
1995 – 2000	12.50	4.24	1.53	0.62
2000 – 2001	12.35	4.07	1.32	0.51
2001 – 2002	11.99	4.33	1.38	0.57
2002 – 2003	11.99	4.06	1.42	0.56
2003 – 2004	12.65	4.29	1.44	0.69
2004 – 2005	12.60	4.34	1.49	0.69
2005 – 2006	12.89	4.20	1.40	0.73
2006 – 2007	13.07	4.32	1.47	0.76
2007 – 2008	13.02	4.51	1.53	0.80
2008 – 2009	13.88	4.05	1.46	0.75
2009 – 2010	13.76	4.30	1.40	0.19

Source: Agricultural Statistics of Pakistan, Federal Bureau of Statistics, Government of Pakistan, Islamabad, 2004 – 2005 and 2005 – 2006.

4.2 Increase Yield

4.2.1 The only option to sustain production growth is to increase yields. The yield of most agricultural crops is far below their potential or achievable yield due to the inefficiency of agricultural production system. The gap between the yield of various crops in Pakistan and other countries is wide as shown in Table 4. In 2010-11, Pakistan produced 25.3 million tonnes of wheat which is the maximum ever produced. The yield of wheat was 2750 kg/ha which is far below the achievable yield of 5425kg/ha obtained by FAO in the farmer field and lower than many other countries. According to (Khan,

2002) our yields are in between 50 – 80 percent less than the achievable targets.

Table-4: Yield of Various Crops (Kg/Ha)

Country	Wheat	Rice	Sugarcane
Pakistan	2750	2387	55891
India	2640	2927	59707
France	7578	-	-
USA	2898	7581	70670
China	4203	6347	70821
Australia	1844	-	88896
Canada	2469	-	-
Russia	1901	-	-
Iran	2121	5965	-
World Average	2869	3970	65532

Source: Agricultural Statistics of Pakistan, 2009 – 2010, Government of Pakistan, Pakistan Economic Survey 2010 – 2011, Government of Pakistan.

4.2.2 The major crops grown in Pakistan are wheat, rice, maize, sugarcane and cotton and occupy 71 percent of total area cultivated. The production of various food crops during the last two decades has shown steady increase, see Table 5.

Table-5: Production of Various Crops (Million Tonnes)

Year	Food Crops	Wheat	Rice	Maize	Sugar cane	Pulses	Edible Oil
2000 – 2001	25.9	19.0	4.80	1.64	43.6	0.62	4.09
2001 – 2002	24.3	18.2	3.88	1.66	48.0	0.59	4.08
2002 – 2003	25.8	19.1	4.47	1.73	52.0	0.93	3.94
2003 – 2004	26.8	19.4	4.84	1.89	53.4	0.87	4.15
2004 – 2005	29.9	21.6	5.02	2.79	45.3	1.09	5.50
2005 – 2006	30.4	21.3	5.55	3.11	44.7	0.68	5.06
2006 – 2007	32.3	23.3	5.44	3.09	54.7	1.09	7.36
2007 – 2008	31.2	21.0	5.56	3.61	63.9	0.76	9.08
2008 – 2009	35.1	24.0	6.95	3.59	50.0	0.99	7.50
2009 – 2010	34.0	23.3	6.88	3.26	49.4	0.76	5.77
2010 – 2011	32.9	25.3	4.82	3.34	55.3	-	-

Source: 1. Pakistan Economic Survey, Government of Pakistan, 2010 - 2011.
2. Agricultural Statistics of Pakistan, Federal Bureau of Statistics, 2009-10.

5. Government Initiatives for Agricultural Growth

5.1 The government has undertaken various priority actions for the growth of agriculture, these include the following actions: -

- (a) To restructure agricultural research system.
- (b) To expand crop maximisation programme with the FAO technical support.
- (c) To expand integrated pest management programme.
- (d) To improve rural finance availability with special focus on expanding formal credit to achieve production targets especially in livestock.
- (e) To initiate focused programme for agricultural business and introducing value chain approach in livestock, fisheries and horticulture sub-sectors.
- (f) To develop strategy for WTO negotiations and actions to avail opportunities in external markets by taking some actions (MTDF. 2005).

5.1 Addressing the Challenges of Food and Nutrition Insecurity in Pakistan

5.1.1 In order to meet the challenge of food and nutrition insecurity in Pakistan, a number of actions have to be mobilised both on a short and long term basis. The most important are as follows: -

5.2 Right Based Approach to Food Security

5.2.1 A right based approach recognises that poor people have inherent right that are essential to livelihood security including food and nutrition security rights that are validated by international standards and laws. Access to food being a human right makes it imperative for all interested in ensuring

food and nutrition security to sensitise the issue and create lobbies and awareness about the right to food security. This is necessary because many people are not aware of this including elites. A lobby for nutrition and food security can be created to build high level commitments to the issue. Advocating groups can be created to educate and mobilise the concerned people to address this issue (Khalil, 2007).

5.3 Policy Options

5.3.1 The success of an action to address a problem depends to a large extent on the policy that governs that action. Comprehensive policies for market reform, trade liberalisation, promotion and investment in agricultural research are therefore necessary to achieve and sustain food security in the long term. It is important to formulate adequate policies towards ensuring food and nutrition security and strategies for action and how best these fit into the situation of a particular country. The aim is to effectively reduce malnutrition, increase food production and increase access to food by alleviating poverty. (Jamali and Anka, 2011).

6 Summary, Conclusions and Recommendations

6.1 Summary

6.1.1 The paper reviewed various literatures on food security in Pakistan. Examine the current situation based on supply and demand policy simulations. Based on baseline forecasts an alternative policy scenarios are developed. The paper further highlights the role of agriculture and evaluates the challenges of food insecurity in Pakistan. Finally, some recommendations were developed for addressing food insecurity problems in the country.

6.2 Conclusion

- i. The demand side of food security problems has been complicated by an unprecedented increase in population.
- ii. The supply side of food grains in Pakistan remained erratic during the last five decades. This can be observed from wide variations in growth rates of food production.
- iii. Forecasting future food situation reveals that wholesale prices of wheat and maize are expected to grow by 5percent during ex-post and ex-ante periods.
- iv. Demand for supply of major food crops reveals that although per capita demand for wheat will decline slowly due to negative responses to changes in income.
- v. The demand side policy simulation assumed that population growth rate will gradually decline.
- vi. The demand side policy simulations further reveals that slowing down of population growth will have a favourable impact on wheat demand and growth in per capita income will influence demand for rice.
- vii. The demand for wheat will decline.
- viii. The supply side policy scenario assumes that the wholesale prices of wheat, rice, and maize will rise at relatively faster rates as compared to those assumed for the baseline solution.
- ix. Further more, the supply side policy scenarios indicates that a rise in the wholesale prices of wheat, rice and maize will be output increasing. The production of rice, wheat and maize will increase.

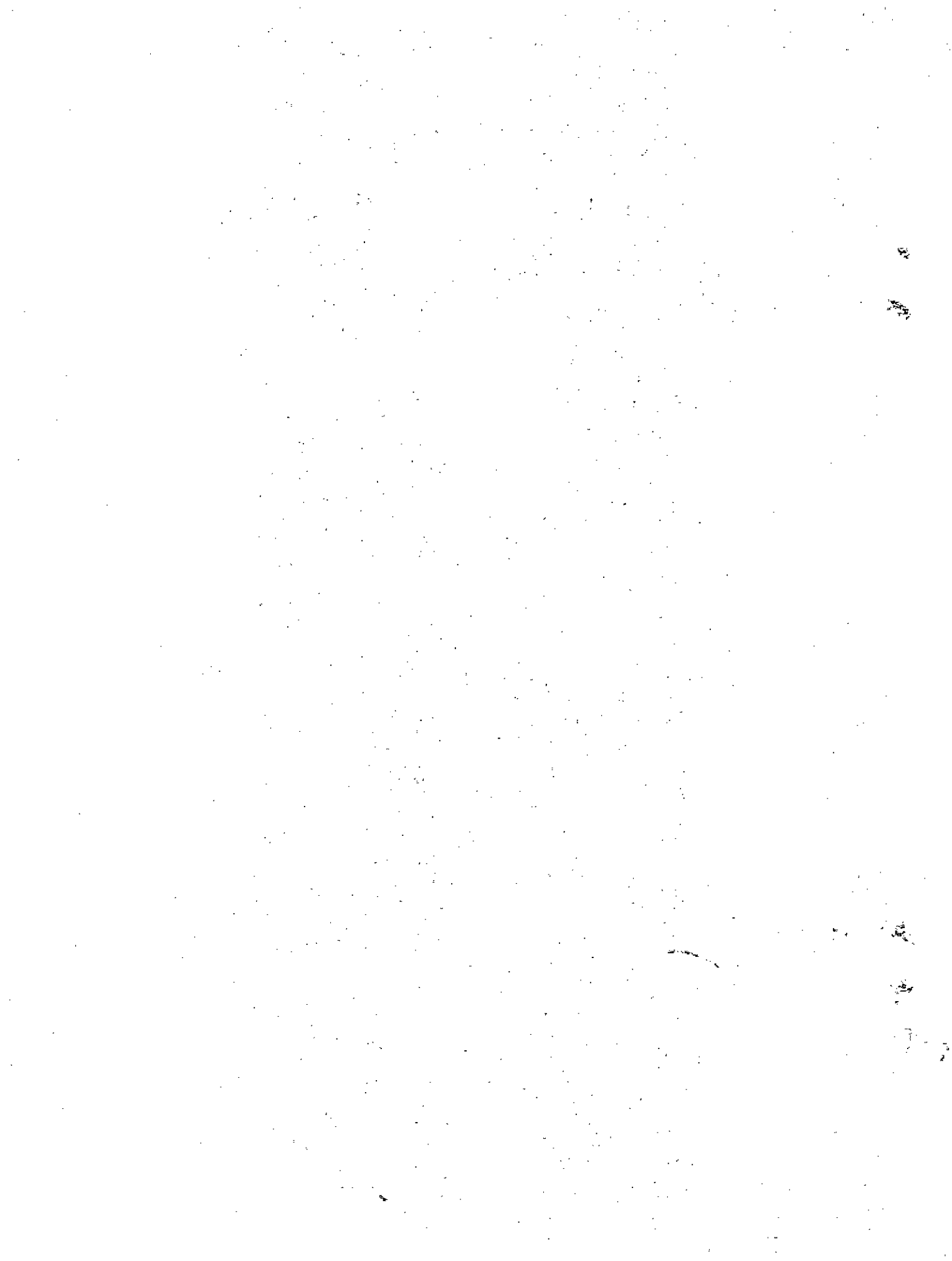
6.3 Recommendations

- i. In order to achieve food security agriculture in Pakistan needs transformation from a traditional way of life to a modern industry to bring about a major economic uplift in rural areas.
- ii. Strong emphasis need to be given during policy formulation to food insecure zones in the country.
- iii. Government should consider increasing its level of intervention so as to achieve self sufficiency in food production.
- iv. There is need to re-organise the management of agriculture and establishing strong linkages between major components of the system. This will increase productivity and achieve food security on a long term basis.

- v. Proper incentives should be provided to the farmers and rapid population is checked by a conscious policy action then Pakistan can reduce its dependency on imported food especially wheat.
- vi. There is need to re-evaluate the existing agricultural policies as a result of change in demand and supply situation with respect to food.

7. References

- Agricultural Statistics of Pakistan (2006) – Federal Bureau of statistics, Government of Pakistan, Islamabad.*
- Ahmed A. M. and R. Siddiqui (1994) – Supply Response with endogenous Technology, Pakistan Development Review winter, 1994.*
- Ahmed A. M. and Siddiqui R. (1995) – Food Security in Pakistan: Can it be achieved? A paper Presented at the Eleventh Annual General Meeting of Pakistan Society of Development Economists, April 18 – 21, 1995.*
- Anka L M (1995) Marketing of Agricultural Products In Pakistan. Journal of Rural Development and Administration. Pakistan Academy of Rural Development Peshawar. Vol XXVII No 1 Winter January – March 1995 Pages 100 - 115*
- IFPRI (2002) – Sustainable Food Security for all by 2002. Proceeding of an International Conference 4 – 6 September 2001, Bonn Germany International Food Policy Research Institute, Washington D.C.*
- Jahangir K. K. (2007) – Food Security with Special Reference to Pakistan Published by Higher Education Commission, Islamabad, Pakistan, 2007.*
- Jamali S.K. and Anka L. M. (2011) – Trade Policy in Developing Countries: A Case Study of Nigeria and Pakistan. International Journal of Sustainable Development, Canada, OIDA, Vol. 2, No. 6, Pages 45 – 52.*
- Khan S. R. A. (2002) – Agriculture in Pakistan, Challenges and Remedies. The Environ Publications Lahore, Pakistan.*
- Khan M. H. (2010) – Agriculture in Pakistan, Change and Progress, Vanguard Publications, Lahore, Pakistan.*
- MTDF (2005) – Medium-Term Development Framework for 2005 – 2010, Planning Commission, Government of Pakistan, Islamabad.*
- PIHS (20004 – 2005) – Pakistan Integrated Household Survey. Federal Bureau of statistics, Government of Pakistan, Islamabad.*



Dr. Lawal Mohammed Anka, Dr. Anwar Ali Shah G. Syed, Faiz M. Shaikh, Syed Riaz Ali Shah

Pakistan Economic Survey (2007) – Ministry of Finance, Economic Affairs Division, Government of Pakistan, Islamabad.

Qureshi S. K., Nazli H. and Soomro G.Y. (2001) – Nutritional Status in Pakistan, Technical Paper Series No. 8, Pakistan Institute of Development Economics, Islamabad, Pakistan.

Saeed K. A. (2010) – The Economy of Pakistan Core Text for Universities and Colleges in Pakistan. Revised and Updated, Oxford University Press, Karachi, Pakistan.

SOFI (2006) – The State of Food Insecurity in the World Eradicating Hunger taking stock ten years after the World Food Summit. Food and Agriculture Organisation of United Nations, Italy, Rome.

United Nations, (2000) – United Nations Statement on Food Security in Pakistan. Thematic Group on Rural Development and Food security, United Nations system in Pakistan a Publication No. UN-PAK/FAO/20000/1

WEP – SDPI (2004) – Food Insecurity in Pakistan 2003 World Food Programme and Sustainable Policy Institute Islamabad, Pakistan.

Wolfe W. S. and Frongilio E.A. (2001) – Building Household Food Security Measurement Tools from the Ground. Food and Nutrition Bulletin, Vol. 22, No. 1, Pages 5 – 12.

Siddiqui R. and A. M. Ahmed (1994) – Demand for Food Grains in Pakistan, Paper Presented at the Third workshop on Projections and Policy Implications of Medium and Long Term, Rice Supply and Demand organised by IRRRI and IFPRI, Islamabad.

Zaidi S. A. (2005) – Issues in Pakistan's Economy, Second Edition Revised and Expanded. Oxford University Press, Pakistan.

COST ESTIMATION AND FIXATION OF MINIMUM INDICATIVE PRICE OF FLUE-CURED VIRGINIA TOBACCO IN PAKISTAN

By

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Abstract

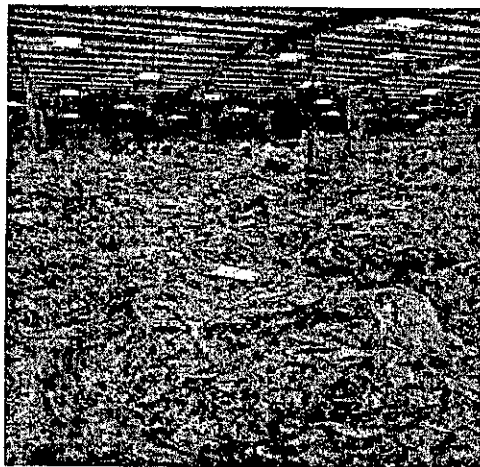
In Pakistan, tobacco is of a great economic significance as source of revenue, employment generation and foreign exchange earning to the country though it is cultivated quite on teeny area of around 0.27 percent of the total irrigated area of the country or 3 percent of Khyber Pakhtunkhwa (KPK). The federal government is the main beneficiary of the crop owing to getting more than 60 billion as central excise duty while the PTB gets Rs. 60-65 million in shape of cess and the provincial government of KPK get more than Rs. 100 million in shape of provincial tobacco development cess. The growing, manufacturing, distribution and retailing contributing approximately 5 percent to the total gross domestic production (GDP) of Pakistan (2011-12 B.E.) However, the illicit tobacco trade in Pakistan is reportedly 20 % of the total cigarette market, causing an annual loss of approximately Rs. 10-15 billion that needs checking right now.

1. Introduction

1.1 In Pakistan two types of tobacco are grown i.e. (i) Indigenous variety and (ii) Virginia. The derivation of ex-type of tobacco is primitive and dates back to the early 1600's when it was introduced in this part from Europe by the Portuguese. The second type,

however, of recent origin and compatible with the creation of Pakistan when Flue-Cured Virginia (FCV) was cultivated on limited scale during 1948.

1.2 The flue-cured Virginia (FCV) also known as Bright or Cigarette tobacco is predominantly grown in plain areas i.e. Charsada, Mardan & Swabi and sub-mountain areas (Mansehra & Bunir) of the KPK and in trifling quantity in Mianwali in the Punjab. Its leaves are picked as they ripe, the bottom leaves first. Multiple trips through the tobacco fields to harvest leaves. It is a labor intensive crop. The picked leaves are tied together at their base (sticks), and hang in air-tight barns. The barns are heated by burners located outside the barn, with flues carrying heat into the barn through pipes to bake the leaves slowly. As the green tobacco leaves dry out and cure in the dry heat, the leaves turn yellow with brown "sugar spots." The harvest in these areas is over by late August.



1.3 The different types of tobacco grown in various parts of the country along-with their common usages are given below:

Tobacco Types	Botanist Name	Popular Name	Area where grown	Usages
Flue-Cured	Tabacum	Virginia	KPK/Mianwali (Pb)	Cigarettes
Light Air-Cured	Tabacum	Burley	KPK	Cigarettes
Light Sun-Cured	Tabacum	Hookah	Punjab/Sindh	Hookah
Dark Air-Cured	Tabacum	DAC	Punjab	Cigarette, Biri.
Semi-Oriented	Rustica	White Patta	KPK, Punjab	Chewing, hookah
Dark Sun-Cured	Rustica	Naswar	KPK, Punjab & Balochistan	Snuff/Cigarettes

1.1 Flue-Cured Virginia (FCV) Tobacco Production

1.1.1 Based on three years average i.e. 2007-2010, the annual production of all tobacco in the country is more or less 110.69 million kgs over area of 0.0523 million hectares. Out of this, the production of FCV tobacco is 73.451million kgs. Its share in all Pakistan tobacco area and production is 52 and 66 percent, respectively.

1.2 Estimation of Cost of Production

1.2.1 In all business enterprises, the cost of production (COP) is the decisive determinant for fixing price of any commodity. Likewise, in farm enterprise, COP is also one of the imperative considerations in preparing proposals for recommending Minimum Indicative Prices (MIP) of tobacco. However, its empirical estimation involves a number of conceptual problems and practical difficulties. Wide variations in the use level of inputs, technology adoption and diverse farming resulting in varying yield levels further add to the problem.

1.2.2 The Pakistan Tobacco Board (PTB), Peshawar, M/o Commerce, govt. of Pakistan before announcing Minimum Indicative Price (MIP) conducts an annual tobacco field survey through its especial committee "Cost of Production Committee". The Secretary PTB is its convener and consisting of the representatives of:

- ❖ Pakistan Tobacco Board;
- ❖ Agriculture Policy Institute, Islamabad;
- ❖ Provincial Agriculture Department;
- ❖ Pakistan Tobacco Company;
- ❖ Phillip Morris (Pak) Ltd, formerly LTC;
- ❖ Growers Associations.

1.2.3 During field survey four teams consisting of four to five members are daily constituted. Out of them one is team interviewer/leader and the remaining are as observers. The villages and growers to be interviewed are selected randomly from the major tobacco producing districts. The interviewer in the presence of the representatives of main two stalk holders i.e. growers and tobacco company note down wide-ranging data regarding their expenses incurred on preceding current harvested tobacco crop and income received on prescribed questionnaires. The filled in questionnaires are then handed over daily to PTB for onward processing, analyzing and examining to work out cost of production.

1.3 Cost of Production of FCV Tobacco: 2012 Crop

1.3.1 The PTB conducted a comprehensive field survey from 3rd October to 16th November 2012 in the major tobacco producing districts i.e. Charsadda, Mardan, Swabi, Mansehra, Bunir and Chakdarha, of Khyber Pakhtunkhwa and Mianwali in the Punjab to work out cost of production of Flue-Cured Virginia, Burley and White Patta tobacco for 2012 crop.

1.3.2 The survey teams as per tour program interviewed a large numbers of tobacco growers, approximately 375-400 and collected data and information

from them about different cultural operations, farm inputs prices and tobacco productivity. Summary of which is appendix at Annex-I and some notable findings as reported by the growers and derived from discussion during field survey are as under:

1.3.3 Unlike other agriculture crops, tobacco growers are very sensitive regarding land preparation. Almost all tobacco growers accomplish all kind of ploughing i.e. deep ploughing, ploughing and planking every year except deep ploughing which is mostly done after every two years. Planking is commonly carried out by bullocks. Besides chemical fertilizers, farm yard manure is extensively applied in huge quantity. In chemical fertilizers, 80-90 per cent of the tobacco growers use NPK fertilizer @ 9-10 bags per hectare keeping in view the demand of tobacco industry to get better quality of tobacco. However, due to short supply of NPK during 2012, a large number of growers made their own blend of NPK from different fertilizers i.e. DAP, Urea, CAN, SSP, SOP etc.

1.3.4 Pesticides and suckercides are generally provided by the PTC & PMP at credit and the prices are paid out at time of tobacco purchasing.

1.3.5 A vast difference in some charges/costs i.e. FYM, land lease and fuel (wood) was noted between Mianwali and KPK. The cost in Mianwali for the aforesaid items was more or less 50 % less compared to KPK.

1.3.6 The detailed cost of production of Flue Cured Virginia tobacco for the 2012 crop in the plain areas— Swabi, Mardan and Charsadda and sub-mountain areas— Bunir & Mansehra are given at Annexes-2 and 3, while summary of these is shown in Table-1 & Table-2 below.

Table-1: Average Farmers' Cost of Production of FCV Tobacco in Plain Areas: 2012 Crop

Items	Charsadda	Mardan	Swabi	Average
1. Gross cost of production (Rs/hect.)	407346.23	444269.52	438888.54	430168.10
2. Value of by-products (Rs/hect.)	8882.00	8438.22	9471.00	8930.41
3. Net Cost of production (Rs/hect.)	398464.23	435831.30	429417.54	421237.69
4. Yield (Kgs/hect.)	3336.00	3378.09	3393.00	3369.03
5. Cost of production (Rs/kg)	119.44	129.02	126.56	125.01

Note: Gross cost & Net cost of production is at Tobacco Company depots.

Source: Annex-II.

1.3.7 The gross cost of production of FCV tobacco in the plain areas during 2012 crop is worked out at Rs 430168 per hectare. Deducting the value of by-products i.e. Choorā, TND, Stalks and Ash, the net cost of production at tobacco company depots would be Rs. 421238/hectare. Distributing over the average yield of 3369 kgs/hectare, the cost of production at industry depots/market level works out to Rs 125 kg.

1.3.8 As per details given in Annex-III and summarized in Table-3 below, the average gross cost of production of FCV tobacco in the sub-mountain areas during 2012 crop year worked out at Rs 376382/hectare. Deducting the value of by-products @ Rs 6317, the net cost of production would be Rs 370065/hectare. With the average yield of 2721 kgs/hectare, the cost of production of tobacco works out to Rs 135.89/kg.

Table-3: Average Farmers' Cost of Production of FCV Tobacco in Sub-Mountain Areas: 2012 Crop

Items	Mansehra	Bunir	Average
1. Gross cost of production (Rs/hect.)	407737.32	345026.04	376381.68
2. Value of by-product (Rs/hect.)	6543.44	6090.00	6316.72
3. Net cost of production (Rs/hect.)	401193.88	338936.04	370064.96
4. Yield (Kgs/hect.)	2754.20	2687.38	2720.79
5. Cost of production (Rs/kg)	145.67	126.12	135.89

Note: For sub-mountain areas, the self-governing cost of production has calculated for the first time.

Source: Annex-III

1.4 Percentage Shares of Major Operations/inputs in Cost of Production

1.4.1 The contributions of different major operations and farm inputs in the average gross cost of production of FCV tobacco in the plain and sub-mountain areas during 2012 crop season is presented in Table-4.

Table-4: Cost of Major Operations/inputs of FCV Tobacco: 2012 Crop

S. No	Major operation/inputs	Plain areas		Sub-Mountain areas	
		Per hectare avg. cost (Rs)	% share	Per hectare avg. cost (Rs)	% share
1	Nursery raising & related operations	9213.25	2.14	9598.14	2.55
2	Preparation of land	14962.43	3.48	11974.245	3.18
3	Ridge making	4304.01	1.00	4373.39	1.16
4	Manuring	15341.54	3.57	7917.085	2.10
5	Sowing operation	6510.59	1.51	8160.11	2.17
6	Plant protection	8743.88	2.03	7782.625	2.07
7	Ch. fertilizer including app.	29282.33	6.81	35908.96	9.54
8	Inter culture	14103.72	3.28	12782.9	3.40
9	Topping/suckering & suckericides	8412.50	1.96	8273.485	2.20
10	Irrigation	7125.84	1.66	10922.92	2.90
11	Expenses of meal and tea @ Rs 85/=	10818.30	2.51	8919.285	2.37
12	Mark up @ 12 % for 8 months	10305.47	2.40	10129.0516	2.69
13	Barn renovation	2534.17	0.59	3574.875	0.95
14	Cost of curing per barn	22662.67	-	23616.825	-
15	Total cost of curing	182517.44	42.43	128037.33	34.02
16	Expenses of meal during curing	17000.00	3.95	17000	4.52
17	Barn charges on rent for full season	15795.06	3.67	12882.29	3.42
18	Managerial charges for 8 months	2835.00	0.66	2835	0.75
19	Electricity charges for three months	3000.00	0.70	3000	0.80
20	Land lease for 8 months for tobacco	67362.55	15.66	72309.985	19.21
21	Gross cost of production	430168.10	100.00	376381.677	100.00

Source: Annexes-II& III.

1.4.2 The expenses of curing are the leading component in the cost of cultivation of FCV tobacco in both plain and sub-mountain areas, accounting for 46 and 39 per cent respectively. The other principal ingredients are:

Land rent (16 % in plain and 19 % in sub-mountain), and fertilizers including FYM (10 % in plain and 11 % in sub-mountain areas).

2. FIXATION OF MINIMUM INDICATIVE PRICES OF TOBACCO

2.1 Minimum Indicative Price (MIP)

2.1.1 Minimum Indicative Price of tobacco is the price which gives a guarantee to growers that even in surplus supply situation the weighted average price of tobacco for the crop of any year to be paid by a Tobacco Company to the growers shall not be lower the weighted average price paid to them for the crop of the immediately preceding year prices.

2.1.2 The Pakistan Tobacco Board, Head office Peshawar, an attached department of the M/o Commerce, govt. of Pakistan has a special committee namely Price and Grade Revision Committee, under convener-ship of Agriculture Development Commissioner of defunct MINFA,, Government of Pakistan consisting of the representatives of:

<ul style="list-style-type: none">➤ Pakistan Tobacco Board;➤ Agricultural Policy Institute, Islamabad;➤ Agriculture Extension, KPK;	<ul style="list-style-type: none">➤ Tobacco growers;➤ Tobacco company;
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2.1.3 The task of the Price & Grade Revision Committee is to make minimum indicative price proposals. The recommendations of the committee is then put up in the higher powered PTB's All Pakistan tobacco meeting, headed by the Chairman of PTB for approval/announcement. The committee has the power to agree or disagree the price proposals. The minimum indicative prices of tobacco are approved in the meeting for various tobaccos and then submitted to the Ministry of Commerce for formal notification in the Gazette of Pakistan. The Price & Grade Revision committee while

finalizing minimum indicative price take into account the following parameters:

- a) Cost of production (COP) worked out by the cost of production committee;
- b) World tobacco trends;
- c) Rate of inflation in the country especially Consumer Price Index (CPI);
- d) Weighted average prices received by the tobacco growers for their tobacco during preceding year.
- e) Plus nominal profit margin to cover the likely escalation in COP of upcoming season.

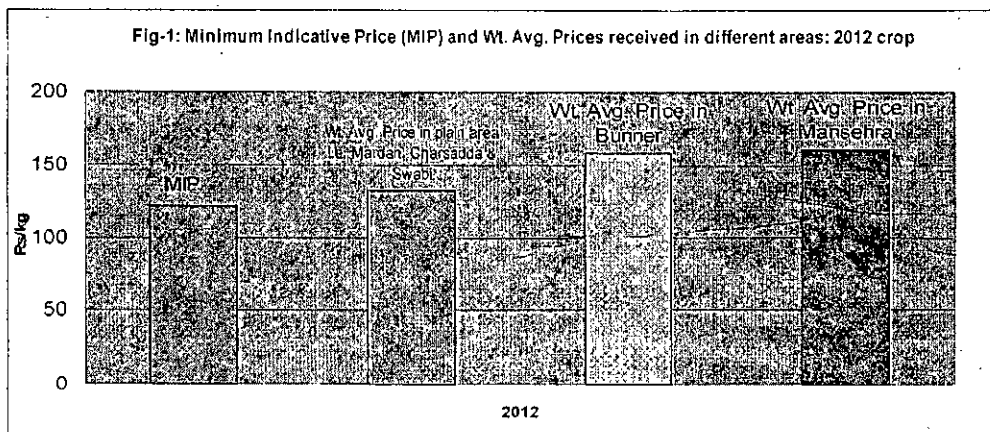
2.1.4 Before 2006, MIP of tobacco was announced after sowing of the crop, mostly in March-April. The announcement of MIP at standing crop generally affect the tobacco growers and hence suffer economically because of no option to sow the tobacco or other competing crops. Since active involvement of the API in the field survey of PTB for working out cost of production of tobacco the time schedule of price announcement was brought ahead of tobacco sowing. Currently it is announced in November/December and hence the growers have the option whether to grow tobacco or otherwise.

2.1.5 It was the persistent demand of tobacco growers that prices for tobacco should be fixed/announced before sowing of tobacco nurseries so that they could decide whether to grow tobacco or other competing crops. The price fixation though safeguards the tobacco growers' interests and grade assignment, yet some of the growers are not happy with the prices being paid to them and demand that the increase in cost of production should find suitable reflection in the weighted average prices paid to them by the tobacco companies while the tobacco company averse to the above said provisions of law and demand its annulment.

2.2 FCV Tobacco Realized Prices Vs Minimum Indicative Prices

2.2.1 It is worthy to mention that the weighted average price of flue-cured Virginia tobacco stand protected under the provisions of MLO No 487 in Khyber Pakhtunkhwa. The weighted average price of tobacco for the crop of any year to be paid by a tobacco company to the tobacco growers shall not be lowered than the weighted average price paid to them for the crop of immediately preceding year.

2.2.2 Unlike other agricultural crops, the tobacco crop in the KPK is the only cash crop for which purchase is 100 per cent sure and the prices paid to the growers is generally greater than the announced prices and in cash. The Minimum Indicative Price of FCV Tobacco for 2012 crop announced on 14th December 2011 was Rs. 117/kgs. Later on owing to protest of tobacco growers it was enhanced in June 2012 and fixed at Rs 121/kg. The MIP and wt. Avg. prices during 2012 crop year are depicted at Fig-1 under.



2.2.3 The wt. avg. prices received by the tobacco growers in the plain (Charsadda, Mardan & Swabi) and sub-mountain (Bunner & Mansehra) areas during 2012 crop year against the MIP of Rs. 121/kg stood at Rs. 132,

158 and 161/kg, higher by Rs 11, 37 and 40 per kg or 9, 31 & 33 per cent respectively .

3. FCV Tobacco Domestic Requirements

3.1 The Pakistan Tobacco Board regulates the production of tobacco in the country and has an effective marketing system for tobacco crop. The PTB annually ascertains requirements of different types of tobacco from the tobacco companies and other tobacco dealing traders and publicize the same for information of tobacco growers. The objective of this workout is to maintain balance in crop production.

3.2 Every tobacco company intended to purchase tobacco during a crop year shall indicate to the board its total requirements of the tobacco from the ensuing crop, by the 21st of October in each year. The Board publicizes the indicated requirements for various types of tobacco before the commencement of planting season.

3.3 Every tobacco company for the purchase of its target requirement of tobacco executes an agreement with the tobacco growers by the 31st December in respect of the ensuing crop of tobacco. A copy of each such agreement is supplied to the growers concerned and a list of all such growers is furnished to the PTB as soon as possible after the execution of the agreements.

3.4 FCV is the most important type of tobacco & approximately 90-95 percent of total FCV tobacco is grown in KPK. The FCV is the principal input of the cigarette industry in the country and also the major export earner. The annual domestic requirements of FCV tobacco in the country usually range between 65-70 million kgs. Whole demand is met from locally

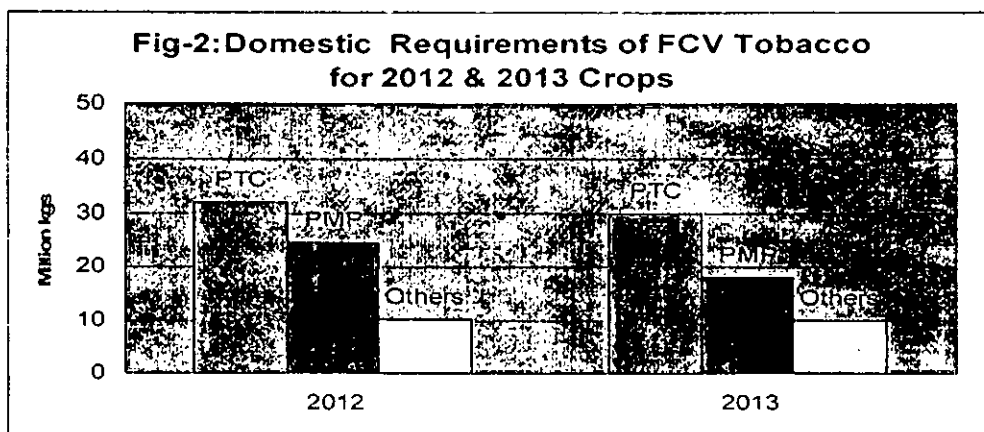
produced FCV. The domestic projected requirement of FCV tobacco for 2012 & 2013 crops is given in Table-5 and portrayed in Fig-2.

Table- 5: REQUIREMENTS OF FCV TOBACCO FOR 2012 AND 2013 CROPS

S. No	Name of buyers	Requirements for 2012 crop		Requirements for 2013 crop		Increase/decrease over previous year	
		Million kgs	Per cent	Million kgs	Per cent	Million kgs	Per cent
1	PTC	32.0	48	30	52	- 2.0	(-) 6
2	PMP	24.5	37	18	31	- 6.5	(-) 27
3	Others	10.3	15	10	17	- 0.3	(-) 3
	Total	66.8	100	58	100	- 8.2	(-) 13.0

Source: Pakistan Tobacco Board, Peshawar.

3.5 Table-5 reveals that the British-American Tobacco (BAT) under the name of Pakistan Tobacco Co. and Philip Morris Pakistan Limited are the main purchasers in Pakistan. Their shares in total requirements for 2012 and 2013 crop years are 48, 37 and 52, 31 percent respectively. The share of other buyer consisting of dozens small companies and other private tobacco traders ranges between 15-17 percent.



3.6 The overall requirement of FCV tobacco for 2013 crop has decreased by 8.2 million kgs or 13 percent. The shrinkage in requirements by PTC,

PMP and others are 6, 27 and 3 percent respectively which is a matter of great concern for tobacco growers.

3.1 Nominal and Real Weighted Average Prices of FCV Tobacco in KPK: 2000-01 to 2011-12 Crops

3.1.1 Fluctuations in the prices of a commodity in relation to general price level in the economy influences the purchasing power/real income of its producers. To ascertain overtime changes in the purchasing power of FCV tobacco in real terms, the nominal prices of FCV tobacco have been deflated by the consumer price index (CPI). In this context, the analysis has been given in Table-6 and depicted in Fig-3.

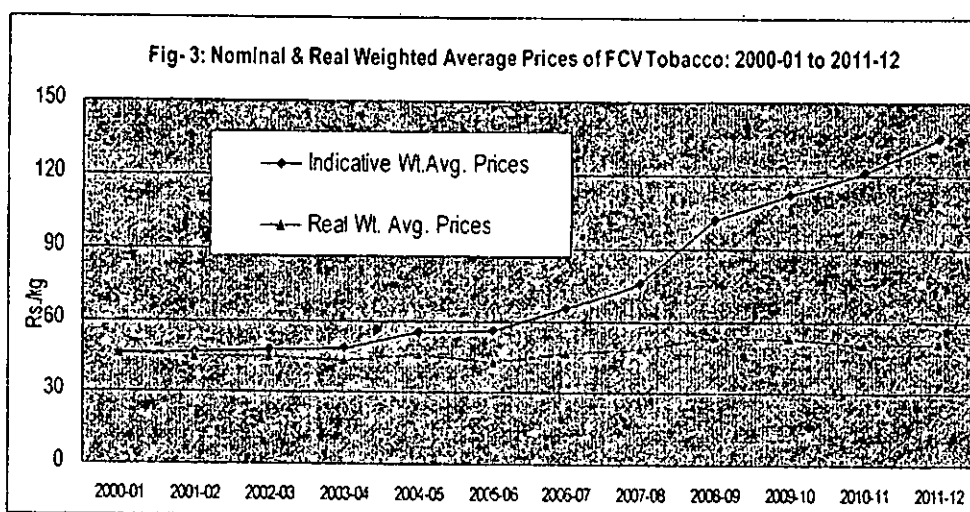
Table-6: Nominal and Real Weighted Average Prices of FCV Tobacco: 2000-01 to 2011-12 Crops

Year	Nominal Weighted Average Price	Consumer Price Index (CPI)	Real Weighted Average Price
1	2	3	4=(2/3)x100
	Rs/kg	2000-01=100	Rs/kg
2000-01	45.94	100.00	45.94
2001-02	46.19	103.54	44.61
2002-03	47.53	106.75	44.52
2003-04	48.56	111.63	43.50
2004-05	55.61	121.98	45.59
2005-06	56.25	131.64	42.73
2006-07	65.59	141.87	46.23
2007-08	76.38	158.90	48.07
2008-09	102.06	191.90	53.18
2009-10	112.62	214.41	52.53
2010-11	121.57	244.26	49.77
2011-12	135.58	265.00	51.16

Sources: 1. For Nominal Indicative Prices: Pakistan Tobacco Board, Peshawar.
2. For CPI: Pakistan Economics Survey, 2011-12.

3.1.2 The nominal weighted average prices of FCV tobacco averaging at Rs. 45.94 per kg in 2000-01 has escalated to Rs. 135.58 per kg in 2011-12, indicating an overall surge of 195 percent. Deflating against the cumulative increase in CPI by 165 percent, the real weighted average price during 2011-12 made out upsurge over the base year of 2000-01 price of Rs 45.94/kg by 11 percent.

3.1.3 In the period under reference, the real weighted average prices of FCV tobacco witnessed assorted trends. During the five immediate next years of base year 2000-01, the weighted average prices demonstrated a decreasing trend and dipped to the lowest ebb at Rs. 42.73 per kg during 2005-06 crop's year, lowered by 7 percent than the base year 2000-01 price of Rs 45.94/kg. During 2006-07 it ascended marginally by about 1 percent over the base year real price. The increasing trend continued for the immediate next two years and reached Rs 53.18 per kg in 2008-09, a significant year for the FCV tobacco growers. Nevertheless, thereafter it could not hold its rising trend and again declined in the remaining years and resulted decrease in the purchasing power of FCV tobacco growers.



3.2 Tobacco Realized Prices & Growers Response

3.2.1 The main producing districts of FCV tobacco are Charsadda, Mardan, Swabi, Bunir and Mansehra. The Mardan division lonely produces 54 per cent of the country's total tobacco or 68 per cent of the KPK. The district-wise area of tobacco in Mardan division versus the major competing crops i.e. wheat and sugarcane from 2000-01 to 2008-09 is given in Table-7.

Table-7: District-wise Area of Wheat, Sugarcane and Tobacco: 2000-01 to 2008-09

Year	Wheat	Sugarcane	Tobacco	Tobacco as% wheat	Tobacco as% sugarcane
	----- 000 hectare -----				
Mardan					
2000-01	44.6	30.9	4.4	10	14
2001-02	45.0	31.1	4.9	11	16
2002-03	45.0	31.2	3.5	8	11
2003-04	44.9	31.3	3.9	9	13
2004-05	45.0	31.0	6.0	13	19
2005-06	45.0	29.4	7.2	16	25
2006-07	45.0	29.4	5.2	11	18
2007-08	46.0	29.5	5.4	12	18
2008-09	50.0	28.4	5.7	11	20
Average	45.6	30.2	5.1	11.3	17.1
% growth rate	0.88	-1.12	4.72	3.81	5.91
Swabi					
2000-01	58.5	4.3	11.5	20	268
2001-02	60.3	4.3	12.4	21	288
2002-03	30.5	4.2	12.8	42	304
2003-04	36.4	3.6	12.6	35	350
2004-05	37.1	3.6	13.6	37	377
2005-06	32.6	3.7	15.1	46	408
2006-07	45.0	3.6	14.4	32	400
2007-08	44.8	4.4	15.9	35	360
2008-09	46.9	4.4	14.8	32	337
Average	43.6	4.0	13.7	33.2	342.5
% growth rate	-1.83	-0.20	3.68	5.61	3.88

Note: The growth rates have been worked out by estimating the equation $y=a(1+r)^{x2}$ through Ordinary Least Squares (OLS) method.

Source: District-Wise Area & Production of KPK, Pakistan Bureau of Statistics.

3.2.2 Wheat, sugarcane and tobacco are the major competing crops in both districts. During the period under reference, the tobacco crop averaged nearly 11 percent of wheat and 17 percent of sugarcane in the Mardan district and 33 and 243 percent in the Swabi district. In both districts area of all the three major competing crops have shown assorted changes overtime. In the district of Mardan, the area of wheat augmented @ 0.88 percent per annum, sugarcane decreased @ 1.12 percent while tobacco has grown @ 4.72 percent. In the country's top tobacco producing district Swabi, the area of wheat and sugarcane has decreased @ 1.83 & 0.2 percent per annum while area of tobacco boosted @ 3.68 percent. **The analysis reveals that tobacco farming has maintained its superiority because of better returns over its major competing crops.**

4. Conclusion:

4.1 All growers whether they are of tobacco or other crops sternly criticize invariable escalating diesel prices and imposition of general sale tax on fertilizers, pesticides, diesel and tractors. GST on farm inputs and allied machineries adversely impact the agriculture, the mainstay of the country's economy. The growers' community has alarming anxiety over rising cost of production of their agriculture crops. To assist and relax the problems of tobacco growers it is suggested that:

- a) The federal government should set out an outright approach (enhanced regulatory and fiscal measures, strict enforcement of existing legislation) to halt growing illicit tobacco trade. The sale of smuggled, duty-non-paid (TNP) and counterfeited cigarettes outgrow the legal tobacco industry in the country and drain off a hefty tax revenue from the government.

- b) The federal/provincial government should allocate some portion from taxes/levies on tobacco and cigarette to tobacco growers in shape of subsidies for fertilizer, insecticides, suckercides etc to balance prices of tobacco with other countries of the world. If the prices of tobacco in the country shoot up to such level whereas imported tobacco become cheaper than local then the tobacco companies would prefer to import tobacco rather to buy local tobacco. Instead of step up tobacco price, some funds from taxes/duties on tobacco and tobacco allied products may be allocated for subsidy to tobacco growers to ensure survival of both stakeholders i.e. tobacco growers as well as tobacco companies;
- c) The tobacco concerned quarters need to work on war footing basis to evolve high yielding, disease resistant and early maturing tobacco varieties to reduce per unit cost of production of FCV tobacco.

5. References

1. Economic Survey, 2011-12, Government of Pakistan.
2. Agriculture Statistics of Pakistan, 2010-11, Pakistan Bureau of Statistics, Islamabad.
3. Tobacco Statistical Bulletin, 2010, Pakistan Tobacco Board, Peshawar.
4. Tobacco Field Survey

**CUSTOM HIRING RATES AND INPUT PRICES OF FCV TOBACCO
IN KHYBER PAKHTUNKHWA: 2012 CROP**

S. No	Rate of operations/inputs	2012 Crop	
		Min	Max
1	Land Preparation (hrs/op/hect.)		
	1.1 Deep ploughing	5.00	6.00
	1.2 Rotavator/cutter	6.00	7.00
	1.3 Ploughing	2.50	4.00
	1.4 Planking by bullocks	3.00	4.00
	1.5 Ridger	3.00	4.00
	1.6 Tractor rate ((Rs/hr)	800	1100
2	Cost of FYM including transportation (Rs/trolley)	3500	6000
3	Prices of fertilizer (Rs/bag)		
	3.1 NPK 12: 15: 20	3290	3300
	3.2 DAP	4000	4300
	3.2 Urea	1700	1900
	3.3 NP	2800	3300
	3.4 SOP	3800	4200
	3.5 CAN	1500	1700
	3.6 SSP	1100	1500
4	Daily wage rate (Rs/m. day)	250	400
5	Pesticides (Rs/hect.)	1850-1930	4000
6	Suckericides	1280-1980	2500
7	Wood (Rs/40 kgs)	400	500
8	Barn on lease for curing (Rs/season)	10000	25000
9	Land lease (Rs/jerab/annum)	15000	30000
10	Yield (Kgs/hect.)		
	10.1 Plain area (Swabi, Mardan, Charsadda)	2400	4000
	10.2 Sub-mountain area i.e. Mansehra, Bunir & Chakdara	2200	3500

Note: Pesticides & Suckericides packages of PTC & PMP:
Pesticides @ Rs. 1850 (PTC) and Rs. 1930 (PMP),
Suckericides @ Rs. 1280 (PMP) & Rs. 1980(PTC).

**Average Farmers' Cost of Production of FCV
Tobacco in Plain Areas: 2012 Crop**

S. No	Major operation/inputs	Charsadda	Mardan	Swabi	Average
1	Nursery Raising & related operations	7941.17	9179.59	10519.00	9213.25
2	Preparation of land	14134.71	15588.09	15164.50	14962.43
3	Ridge Making	3599.00	4738.04	4575.00	4304.01
4	Manuring	12877.86	18367.27	14779.50	15341.54
5	Sowing operation	4528.86	6065.90	8937.00	6510.59
6	Plant protection	11524.29	7668.85	7038.50	8743.88
7	Ch. Fertilizer including app.	29709.29	30299.71	27838.00	29282.33
8	Inter culture	12895.14	14245.52	15170.50	14103.72
9	Topping/Suckering & suckericides	7118.14	8215.85	9903.50	8412.50
10	Irrigation	4599.43	6665.60	10112.50	7125.84
11	Expenses of meal and tea up to curing	12200.00	10079.91	10175.00	10818.30
12	Mark up @ 12 % for 8 months	9690.23	10489.15	10737.04	10305.47
13	Barn renovation (plastering, replacement of centre pipe etc)	2694.71	2682.30	2225.50	2534.17
14	Cost of curing per barn	22262.57	23087.93	22637.50	22662.67
15	Total cost of curing	162896.40	188374.43	196281.50	182517.44
16	Expenses of meal during curing	17000.00	17000.00	17000.00	17000.00
17	Barn charges on rent for full season	19344.57	16860.10	11180.50	15795.06
18	Managerial charges for 8 months	2835.00	2835.00	2835.00	2835.00
19	Electricity charges for three months	3000.00	3000.00	3000.00	3000.00
20	Land lease for 8 months for tobacco	68757.43	71914.21	61416.00	67362.55
21	Gross cost of production	407346.23	444269.52	438888.54	430168.10
22	Value of by-product	8882.00	8438.22	9471.00	8930.41
23	Net Cost of production	398464.23	435831.30	429417.54	421237.69
24	Yield per hectare (Kgs)	3336.00	3378.09	3393.00	3369.03
25	Cost of production (Rs/kg)	119.44	129.02	126.56	125.01

Note: Rounding off of figures may result in slight differences.

Source: Pakistan Tobacco Board, Peshawar.

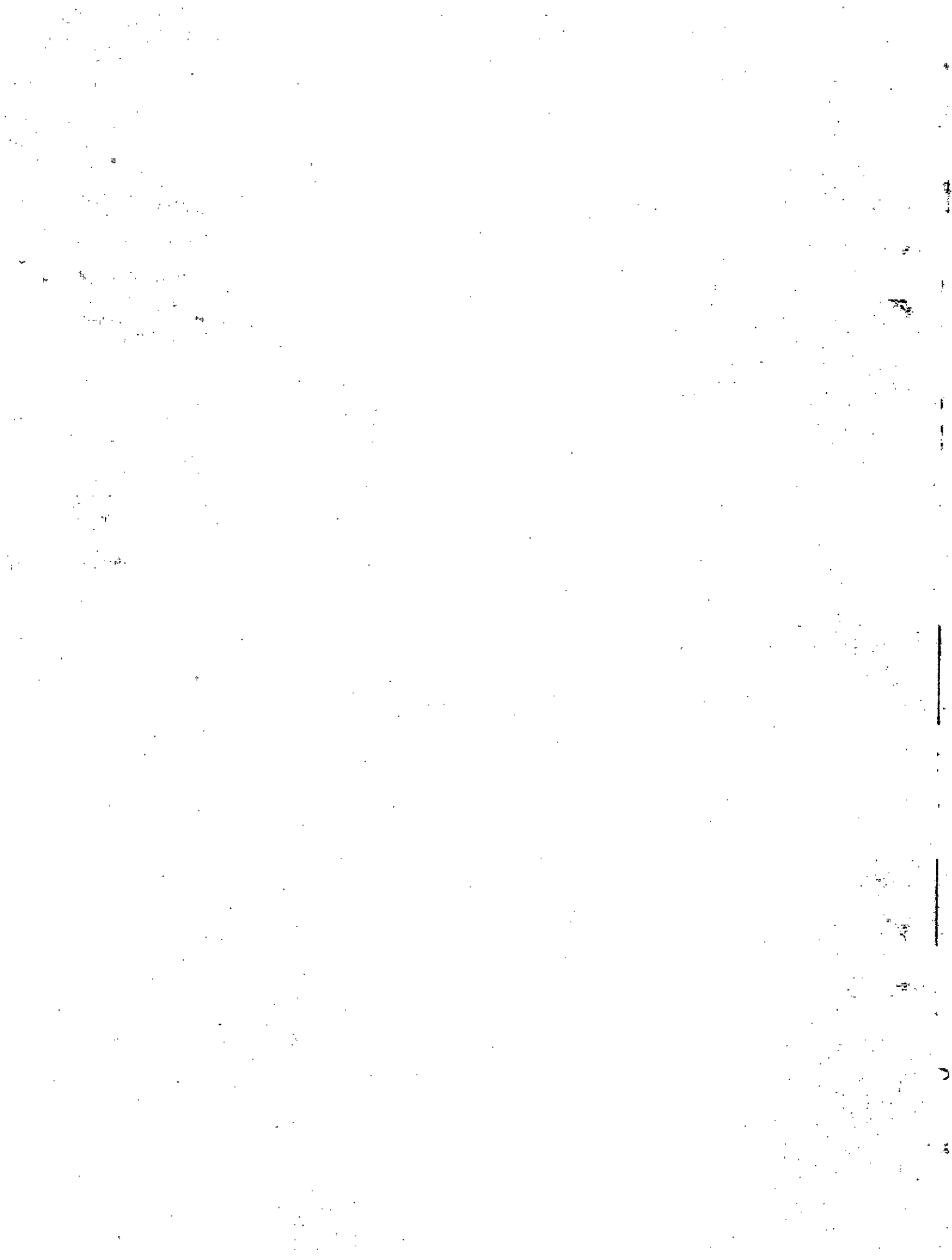
Annex-III

Average Farmers' Cost of Production of FCV Tobacco in Sub-Mountain Areas: 2012 Crop

S. No	Operation/inputs	Mansehra	Bunir	Average
1	Nursery raising & related operations	9273.13	9923.15	9598.14
2	Preparation of land	12529.95	11418.54	11974.25
3	Ridge Making	5023.30	3723.48	4373.39
4	Manuring	8857.85	6976.32	7917.09
5	Sowing operation	10567.95	5752.27	8160.11
6	Plant protection	9385.50	6179.75	7782.63
7	Ch. Fertilizer including app.	35557.03	36260.89	35908.96
8	Inter culture	14280.95	11284.85	12782.90
9	Topping/Suckering & suckericides	11812.05	4734.92	8273.49
10	Irrigation	5005.95	16839.89	10922.92
11	Expenses of meal and tea up to curing	7345.93	10492.64	8919.29
12	Mark up @ 12 % for 8 month	10371.17	9886.94	10129.05
13	Barn renovation (plastering, replacement of centre pipe etc)	2784.50	4365.25	3574.88
14	Cost of curing per barn	25863.68	21369.97	23616.83
15	Total cost of curing	139319.96	116754.70	128037.33
16	Expenses of meal during curing	17000.00	17000.00	17000.00
17	Barn charges on rent for full season	15675.00	10089.58	12882.29
18	Managerial charges for 8 months	2835.00	2835.00	2835.00
19	Electricity charges for three months	3000.00	3000.00	3000.00
20	Land lease for 8 months for tobacco	87112.10	57507.87	72309.99
21	Total cost of production	407737.32	345026.04	376381.68
22	Value of by-product	6543.44	6090.00	6316.72
23	Net Cost of production	401193.88	338936.04	370064.96
24	Yield per hectare (Kgs)	2754.20	2687.38	2720.79
25	Cost of production (Rs/kg)	145.67	126.12	135.89

Note: Rounding off of figures may result in slight changes.

Source: Pakistan Tobacco Board, Peshawar.



AN OVERVIEW OF NUTRITIONAL FOOD SECURITY FOR SENIOR CITIZENS

By

Hussain Ali Turi, Deputy Chief PED

Abstract

Pakistan has ageing population. The number of senior persons have increased over time. In 2012 persons having ages 61 years and above are estimated at 10.5 million. The over all estimated population of the country is 170 million meaning there by that more than 6 percent people living in the country are senior citizens. The constitution of these senior citizens include men and women living in the country or serving overseas these also include minorities living in the country. Aged persons have special health care and nutritional needs. Now it is for the government to catre their needs by farming special programmes focusing on them. Although health outlets in the country have special countries for them but they should be wide spread in every nook and corner of the country. Minorities living in country are Hindus, Christians and Alhmedies. They have well protected markets in the economic environment in which they are surviving but much more have to be done to address their nutritional needs.

Pakistan is an agricultural country. Our food is agriculture based and so is nutrition. More than 60 percent of the population is rural based. They live on agriculture in one way or the other. Their food is agriculture based and nutrition of course is agriculture based. There are a range of food stuffs having different nutritional contents. The choice of food depends upon economic access and awareness. Food availability is pre-requisite. In

the absence of availability economic access and awareness is useless. Different strata of population need different nutrition level according to their age and health requirement. There should be balanced strategy for the provision of required nutrition for them including senior citizens.

1. Senior Citizens

1.1 Pakistani population is estimated at 170 million in 2012. The voting age is 18 years and above. The total number of voters is estimated at 85.37 million comprising 48.28 million men and 37.09 million women. Total registered voters are estimated at 50 percent of the total population of 170 millions. Since our population is ageing therefore total number of voters having age 61 years and above are estimated at 10.46 million comprising 5.54 million males and 4.92 million females (Table-1).

Table 1 Distribution of Senior Citizens by Provinces: 2012

S.No.	Province	Males	Females	Total	Sex Ratio
	----- Millions -----				
	Total	5.54	4.92	10.46	113
1	Punjab	3.38	2.99	6.37	113
2	Sindh	1.06	1.05	2.11	101
3	Khyber Pakhtunkhawa	0.76	0.63	1.39	121
4	Balochistan	0.21	0.17	0.38	124
5	FATA	0.09	0.05	0.14	180
6	Islamabad	0.04	0.03	0.07	133

Source: ECP, Islamabad.

1.2 The distribution of senior persons in different provinces mentions that Punjab is leading with 6.37 million people comprising 3.38 million men and 2.99 million women. In Sindh there are 2.11 million senior persons with 1.06 million men and 1.05 million women. KPK is having 1.39 million senior citizens having 0.76 million males and 0.63 million females.

Baluchistan has 0.38 million elderly people. Their male-female breakup is 0.21 and 0.17 million. In case of FATA peoples having ages 61 years and above are 0.14 million with 0.09 million males and 0.05 million females. the widest gap between two sexes. Islamabad is having 70 thousand senior person having 40 thousand men and 30 thousand women.

1.3 The higher male-female ratio in FATA indicates underreporting women or their higher mortality. Higher sex ratio of Islamabad may be due to male specific migration for jobs.

2. Age Structure of Senior Citizens

2.1 Senior citizens are about 10.4 million as registered by ECP which is 12.5 percent of the total reported voters of the country and more than 6 percent of the 170 million estimated population. Voter is registered with the ECP after attaining the age of 18 years. Voters are considered senior citizens after attaining the age of 60 years.

2.2 The sex ratio of the senior citizens is estimated at 113 meaning there by that there are 113 men against 100 women (Table-2). People who have attained the age of 100 years or more are 3844 with 1852 men and 1992 women. Women out number men as centurions.

2.3 The octagerions are 13,64,520 persons with 6,35,620 men and 5,28,900 women with male-female ratio of 120. The concern of the government is to provide nutrition for the aging population according to their physical needs.

Table 2 Age and Sex Structure of Senior Citizens

	Male	Female	Total	Sex Ratio
	----- Thousands -----			
101 +	1.85	1.99	3.84	93
91-100	99.56	85.15	184.71	117
81-90	534.21	441.76	975.97	121
71-80	1600.00	1390.00	2990.00	115
61-70	3320.00	3000.00	6320.00	111
61+	5555.62	4918.9	10474.52	113

Source: ECP, Islamabad.

3. Pakistanis Living Abroad

3.1 Country's population is estimated at 170 million which is growing @ 2 percent per annum. About 7.5 million Pakistanis are serving overseas which constitutes 4.4 percent of the total population (Table-3). Meaning thereby out of 25 persons one is living abroad. UAE is having 1.3 million Pakistanis, 31 percent of the overseas workers. The other 69 percent workers are in UK, Oman, USA, Kuwait, Canada, Bahrain, Qatar and Malaysia. The break up for Afghanistan and Turkmenistan is not available.

Table-3: Distribution of Pakistanis Abroad

S.No.	Country	Number (Million)
1	UAE	1.300
2	UK	0.365
3	Oman	0.267
4	USA	0.130
5	Kuwait	0.094
6	Canada	0.089
7	Bahrain	0.071
8	Malaysia	0.048
9	Others	2.036

Source: Daily Dawn 05-02-2013.

Note: Registered with ECP so far from 7.5 million Pakistani's living abroad.

3.2 About 85.37 million voters are registered by ECP which constitutes 50 percent of the 170 millions living in the country. The voter's age in the country is 18 years. Using the same proportion it comes to fore that some 3.75 million voters are living abroad. The senior citizens living abroad are estimated at 0.45 million. There are arguments both in favor and against. One school of thought argues that it is the grown ups who proceed abroad for work, therefore proportion of 18 years and more would be high as compared to native population. In turn senior citizens may exceed 0.45 million. The other argument is that after attaining the age of 60 years or more people usually return home. Considering the validity of both arguments it is safe to assume that 0.45 million senior citizens are living abroad.

4. Health and Nutrition

4.1 Health and nutrition are inter-related. A person who has no access to safe water and sanitation is mal-nutritional. His health condition may not be upto required health norms. If he is availing the basic nutrition that is plus point. Health care plays an important and significant role in life of senior citizens. It is the health policy of the government which has added to the longevity of life of the native population. At the same time it is for the government to take care of the senior citizens by providing physical and economic access of nutrition to the elderly.

4.2 Benazir Income Support Program (BISP) and various programs running under the umbrella of Baitulmal are providing economic access considerable proportion of the population. It is estimated that about 50 percent of the population living below poverty line receives from the government support programmes, senior citizens are included in these facilities. Average family size in the country is 6.38 persons. Elderly persons

are estimated at 6.11 percent of the total population meaning there by that two senior citizens exists in every 5 households. The remittances are generally on the rise.

5. Remittances

5.1 The remittances not only improve the economic conditions at country level but improves access to food at household level. This is a two way transaction of senior persons remitting to senior citizens at home. Remittances significantly contribute towards national and household level food and nutritional security.

6. Senior Citizens of Minorities

6.1 There are 2.77 million non-Muslim voters in 13 districts of Sindh and two districts of Punjab, 1.40 million Hindus, Christians 1.23 million, 0.12 million, Alhmadis, 0.006 million, Sikhs 0.001 million, Paresis and 809 Jews. Jews and Paresis are two minorities who have more women than men.

Table-4: Distribution of Minorities Voters

District	Voters	Minorities voters	Senior citizens
Umer Kot	3,86,924	1,89,501	23,214
Tharparker	4,73,189	2,19,342	26,869
Mirpurkhas	5,90,035	1,92,357	23,564
T.A.Yar	74,954	2,88,460	9,182
Badin	6,42,243	1,23,845	15,171
Sanghar	7,97,976	1,50,234	18,404
T,M.Khan	2,31,525	39,847	4,881
Matiari	3,02,265	39,294	4,814
Karachi (S)	10,70,321	81,589	9,995
Ghotki	5,71,636	41,031	5,026
Hyderabad	9,28,236	62,243	7,625
Jamshoro	3,73,097	18,912	2,317
Kashmor	3,55,904	17,495	2,143
Chiniot	6,04,991	35,335	4,329
Lahore	44,24,314	2,47,827	30,359
Total	1,20,41,113	15,32,806	1,87,893

Source: ECP Islamabad

6.2 Out of 10.5 million senior citizens about 0.34 million are from minorities. In thirteen districts of Sindh and two districts of Punjab they account for 0.19 million or 56 percent of the total minorities senior citizens. Rest of the senior citizens of minorities are spread over all over the country. Although they have well protected market in the economy of Pakistan but they need special attention to be dealt with on priority basis.

7. Minimum Wages

7.1 It is the amount of wages which is paid to the individual which ultimately helps to improve his economic access to food at household level. Government has fixed minimum wages @ Rs 7000 per month with effect from July 2011. Now for the coming election 2013 political parties are publicizing their manifestoes to take lead on their opponents. The two leading parties of the country, have announced minimum wages of Rs 18000 and Rs 15000 per month during their coming tenure. It is happy sign. This would improve access to food of the households including the senior citizens. BISP is also intending to double the compensation per family from Rs 1000 to Rs 2000 in the next tenure.

8. Joint Family System

8.1 Joint family system is a system in which at least three generations survive in a household. Meaning thereby they eat from a single kitchen. This system is a boon to our society. It is time tested and centuries old. It is a system in which grand father, grand mother along with grand children live together and take care of the needs of elders and youngsters. Senior citizens survive in this system as in a household size of 6.38 persons about 0.4 persons are senior citizens.

8.2 Elsewhere cultural values specially in Europe are completely different. They do not have the system which we are experiencing in Asia. The system has certainly plus points from which Asian societies are taking benefits and other societies are deprived of it. In European culture there are old homes senior citizens live there. They are visited by their off spring and loved ones at their mutual time of convenience. The government takes care of the senior citizens in old homes. The system is financed by the government treasury through tax payers money.

9. Food Security in Political Manifesto

9.1 Food and Nutritional Security is among the top priorities of National Ministry of Food Security and Research in particular. It is a multi ministry task. Ministries of health and education are other inline ministries in this national endeavour. Since the general election would be held some time in May 2013. MNFS&R in its meeting with stakeholders of Food Security Conference distinctly pointed out that all political parties should clearly mention in their manifesto about the food security steps they are going to take to improve nutrition of the native population.

9.2 Once food security and nutrition are at the political agenda of competing political parties in the election the coming assembly members and parliamentarians would be advocating the case of mal-nutrition of the masses in general and elderly in particular to redress their nutritional needs and continuing health care they require. Strategies may be developed and funds may be allocated to eliminate the mal-nutrition. MNFS&R has already made concentrated efforts in collaborating with Brazilian Government by conducting a seminar on Food Security and arranging meetings of the technical personals of the country to fallow a strategy to achieve zero hunger

in the long term by taking line ministries on board. Monitoring and evaluation would also be in place to clear bottle necks at appropriate level.

10. Conclusions

- The population of Pakistan is ageing as there are 10.5 million people 61 years and above in the population of 170 million which is about 6 percent of the total population.
- Expectancy of life at birth has increased over time due to better health care.
- Female expectancy of life is more in Pakistan as compared to male expectancy of life this is reflected by the fact that out of 3844 voters having ages 101 years and above 1902 are males and 1944 are females.
- Nutritional requirement of senior citizens are different government should take adequate care by formulating programmes addressing senior citizens.
- Senior citizens need special health care according to their physical need. Health outlets do have counters for senior citizens but they should be wide spread to have extensive facilities all over the country.
- Health outlets already have the facility through Baitulmal. They should prioritize senior citizens in extending this facility.
- About 3% of the total population of Pakistan is minorities .They should be taken care of accordingly.

11. References

1. Economic Survey of Pakistan Various issues
2. Household Income and Expenditure Survey 2010-11
3. Dawn News papers various issues.
4. Voters list issued by Election Commission of Pakistan.

STATISTICAL APPENDIX

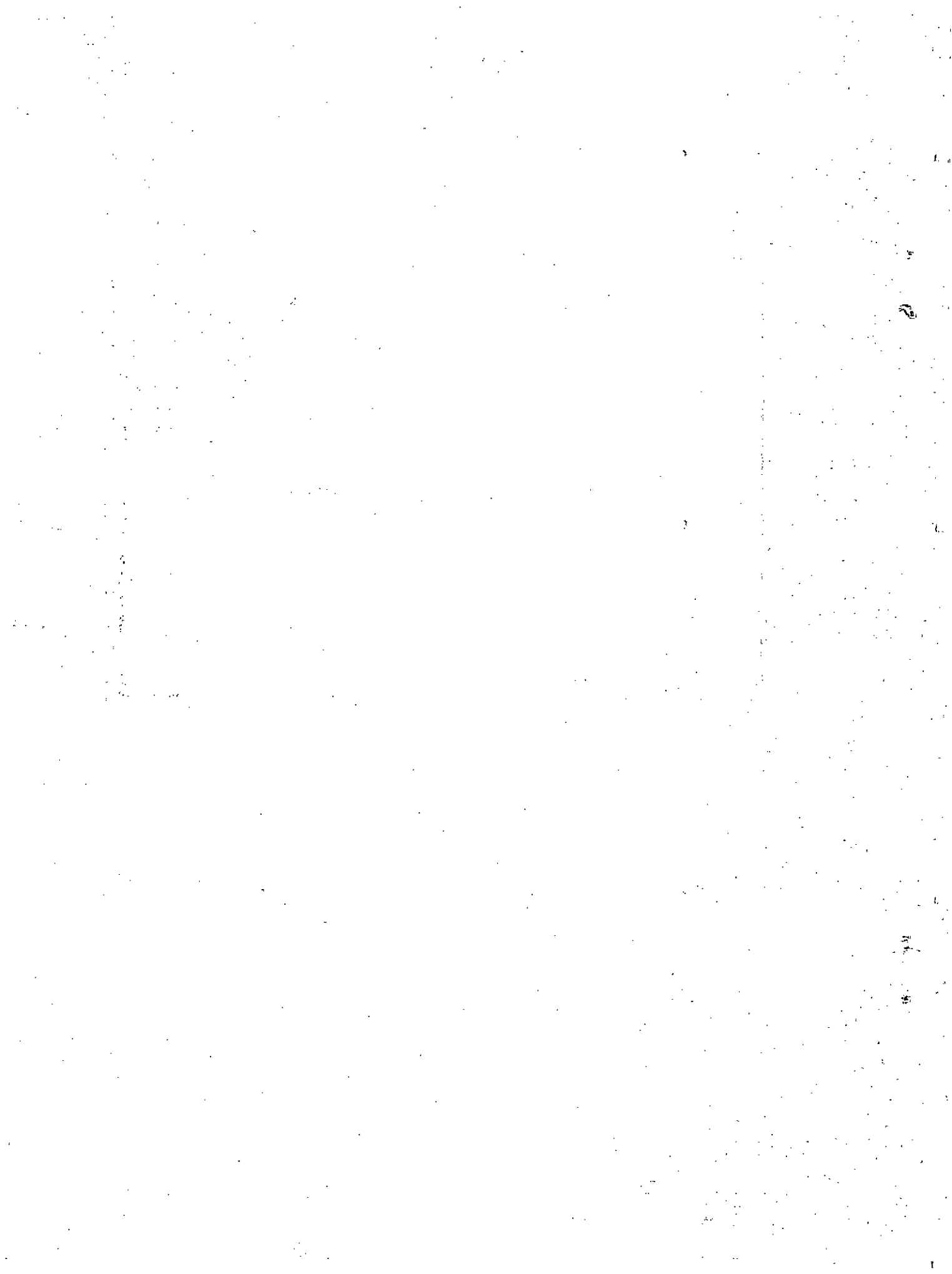


Table 1: Headline and Core Inflation: 1991-92 to 2011-12

Year	Consumer Price Index by Group			*Core	Headline and Core Inflation			
	General	Food	Non-Food		General	Food	Non-Food	*Core
	Base 2000-01=100)				(Percent)			
1991-92	47.41	46.33	48.52	48.84	10.58	10.64	10.52	10.52
1992-93	52.07	51.84	52.31	52.51	9.83	11.74	7.81	7.50
1993-94	57.94	57.72	58.18	58.21	11.27	11.34	11.22	10.9
1994-95	65.48	67.24	64.09	64.43	13.02	16.67	10.17	10.7
1995-96	72.55	74.05	71.36	71.46	10.79	10.13	11.34	10.9
1996-97	81.11	82.86	79.73	79.62	11.80	11.89	11.73	11.4
1997-98	87.45	89.20	86.07	85.60	7.81	7.65	7.94	7.5
1998-99	92.46	94.46	90.89	89.47	5.74	5.90	5.61	4.5
1999-00	95.78	96.56	95.16	92.59	3.58	2.23	4.69	3.5
2000-01	100.00	100.00	100.00	100.00	4.41	3.56	5.09	4.2
2001-02	103.54	102.50	104.28	103.00	3.54	2.44	4.28	2.0
2002-03	106.75	105.40	107.66	103.10	3.10	2.89	3.24	2.5
2003-04	111.63	111.74	111.55	106.08	4.57	6.01	3.62	3.8
2004-05	121.98	125.69	119.47	113.67	9.28	12.48	7.10	6.8
2005-06	131.64	134.39	129.77	122.22	7.92	6.92	8.63	7.5
2006-07	141.87	148.21	137.58	134.35	7.77	10.28	6.02	5.9
2007-08	158.90	174.36	148.45	145.60	12.00	17.65	7.90	8.4
2008-09	191.90	215.69	175.81	171.18	20.77	23.70	18.45	17.6
2009-10	214.41	242.59	195.36	190.03	11.73	12.47	11.12	11.0
2010-11	244.26	286.15	215.94	208.42	13.92	19.95	10.53	9.7
Jul-Apr								
2010-11	145.33	163.12	134.79	130.13	13.81	18.81	10.79	9.33
2011-12	161.09	181.19	149.17	143.69	10.84	11.12	10.66	10.42

Not: * Core inflation is defined as overall inflation adjusted for food and energy.

Source: Pakistan Economics Survey, 2011-12.

Table-2: Prices Indices: 1991-92 to 2011-12

Year	Wholesale Price Index by Group						Sensitive Price Index	GDP Deflator
	General	Food	Raw material	Fuel lighting & lubricants	Manufac-tures	Building material		
1991 -92	44.84	45.42	43.78	34.09	52.38	56.72	46.26	224.33
1992-93	48.14	50.24	48.67	34.83	54.63	57.97	51.22	244.28
1993-94	56.03	57.23	62.55	40.81	63.67	66.47	57.26	274.73
1994-95	65.00	67.50	72.16	44.90	73.40	81.04	65.85	312.60
1995-96	72.22	75.44	75.95	52.95	79.88	87.33	72.90	338.48
1996-97	81.62	84.37	87.01	62.17	89.41	98.63	81.98	388.00
1997-98	86.99	90.45	93.81	69.65	91.62	98.62	88.01	413.39
1998-99	92.51	96.55	103.21	75.81	94.45	99.62	93.68	437.59
1999-00	94.15	97.09	92.39	83.16	98.76	97.15	95.39	100.00
2000-01	100.00	100.00	100.00	100.00	100.00	100.00	100.00	108.02
2001-02	102.01	101.95	100.31	103.14	101.87	101.10	103.37	110.71
2002-03	107.77	105.62	115.51	115.95	103.67	102.90	107.06	115.61
2003-04	116.29	112.99	135.12	119.23	111.83	126.48	114.38	124.55
2004-05	124.14	125.03	110.44	138.01	113.05	143.79	127.59	133.30
2005-06	136.68	133.78	121.93	174.57	116.27	144.18	136.56	147.28
2006-07	146.17	145.67	138.85	184.10	119.91	151.93	151.35	158.62
2007-08	170.15	173.27	156.57	223.34	128.33	177.18	176.78	184.31
2008-09	201.10	213.54	184.45	258.96	140.67	213.00	218.16	221.17
2009-09	226.49	239.01	238.11	296.48	154.94	201.40	247.22	247.58
201011	279.30	285.93	374.44	348.19	197.39	226.63	292.16	294.07
<u>Jul-Apr</u>								
2010-11	161.50	181.57	158.53	164.27	150.40	124.91	159.06	220.52
2011-12	179.66	184.54	176.28	175.28	192.84	151.70	169.15	241.88

Source: Federal Bureau of Statistics.

Table-3: Indices of Crop Acreage and Production: 2000-01 to 2010-11

Year	Acreage Index				Production Index			
(1999-00=100)								
2000-01	96.8	96.8	98.1	98.8	93.0	91.2	95.5	94.0
2001-02	96.5	94.4	104.4	101.2	96.5	85.2	94.4	103.6
2002-03	95.3	94.5	93.6	106.6	104.0	91.8	90.8	112.1
2003-04	99.9	99.5	100.2	102.9	106.9	94.9	89.4	115.1
2004-05	100.7	99.9	107.0	94.9	104.1	106.3	126.9	101.9
2005-06	101.1	101.6	104.0	90.3	100.7	106.7	115.8	96.3
2006-07	102.8	103.0	103.1	100.6	116.6	114.6	114.4	117.9
2007-08	103.8	103.1	102.4	114.0	125.6	107.7	103.7	137.5
2008-09	106.1	109.1	94.5	100.3	113.8	123.9	105.2	107.9
(2005-06=100)								
2005-06	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006-07	101.7	101.4	99.1	111.5	115.8	124.7	113.0	110.7
2007-08	102.6	101.4	98.4	126.2	107.4	100.9	116.2	111.9
2009-09	104.9	107.4	90.9	111.1	98.7	89.5	90.8	99.2
2009-10	104.9	106.5	100.1	99.5	122.5	142.8	112.0	110.4
2010-11 (p)	99.0	101.3	86.7	103.6	88.2	36.5	88.0	123.6

Source : Federal Bureau of Statistics.

Table-4: Composition of Value Addition by Major Crops (At Constant Factor Cost 1999-2000)

Fiscal year/Crops	(%age share)							
	2003-04	2004-05	2005-06	2006-07	207-08	2009-10	2010-11 (R)	2011-12 (P)
All major crops	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Food crops	63.52	61.55	63.37	63.85	62.24	66.61	65.86	62.57
Wheat	38.98	37.58	38.23	39.27	37.12	39.01	42.60	39.22
Rice	16.94	15.28	17.45	15.78	16.63	17.84	15.02	15.37
Bajra	0.59	0.36	0.42	0.43	0.58	0.52	0.63	0.54
Jowar	0.46	0.31	0.27	0.29	0.29	0.24	0.22	0.21
Maize	3.32	4.14	4.70	4.42	5.37	4.57	5.22	5.93
Gram	3.05	3.73	2.14	3.51	2.10	2.32	2.06	1.19
Barley	0.19	0.15	0.15	0.15	0.15	0.11	0.11	0.11
Fibre crops	22.06	27.21	25.58	23.65	22.67	24.17	21.61	24.61
Cotton	22.06	27.21	25.58	23.63	22.67	24.17	21.61	24.61
Cash crops	13.00	9.95	9.75	11.20	13.82	10.05	11.36	11.68
Sugarcane	13.00	9.95	9.75	11.20	13.82	10.05	11.36	11.68
Other crops	1.43	1.28	1.31	1.29	1.27	1.17	1.17	1.14
Sesamum	0.15	0.16	0.20	0.16	0.18	0.17	0.16	0.15
Rapeseed & mustard	0.81	0.65	0.57	0.67	0.58	0.47	0.55	0.57
Tobacco	0.46	0.47	0.54	0.46	0.51	0.53	0.46	0.42

Source: Federal Bureau of Statistics

**Table-5: Growth Rates of Major Crops in Pakistan:
1947-48 to 2010-11**

Period	Parameter	Crops				
		Wheat	Rice	Maize	Sugarcane	Cotton
----- Per cent per annum -----						
1947-48 to 1959-60						
Area		1.53	2.74	2.10	7.61	1.79
Yield		-1.18	-0.19	0.66	-1.53	2.09
Production		0.33	2.54	2.62	6.12	3.86
1959-60 to 1969-70						
Area		2.85	3.22	3.41	4.24	3.39
Yield		3.37	4.44	0.98	3.67	3.23
Production		6.32	7.80	4.42	8.06	6.48
1969-70 to 1979-80						
Area		1.27	3.31	0.43	3.19	0.80
Yield		3.18	0.59	1.79	-0.46	-1.54
Production		4.49	3.92	2.24	2.72	-0.76
1979-80 to 1989-90						
Area		1.06	0.36	1.85	0.24	2.48
Yield		1.52	-0.52	1.01	0.79	6.96
Production		2.60	-0.16	2.88	1.03	9.61
1989-90 to 1999-00						
Area		0.77	1.82	0.41	2.04	1.34
Yield		2.01	3.11	0.82	1.84	-0.88
Production		2.80	4.98	1.25	3.92	0.31
1999-00 to 2009-10						
Area		1.0	4.2	0.35	1.13	0.2
Yield		1.1	1.9	3.87	0.54	1.3
Production		2.1	2.2	4.23	0.65	1.5
1947-48 to 2010-11						
Area		0.54	0.80	0.75	1.11	0.76
Yield		1.05	0.70	0.73	0.41	1.03
Production		1.59	1.53	1.48	1.52	2.32

Note: The above growth rates are trend growth rates and have been calculated through Ordinary Least Squares (OLS) Method.

Table-6: Farm Level Cost of Production of Important Crops

Crop/ Year	Wheat		Seed Cotton		Rice Paddy			Sugarcane		
	Punjab	Sindh	Punjab	Sindh	Basmati	IRRI	IRRI	Punjab	Sindh	NWFP
					Punjab					
----- Rupees per 40 kgs -----										
1982-83	65	54	-	-	93	55	56	-	-	-
1983-84	73	64	166	-	85	56	37	-	-	-
1984-85	70	64	176	107	85	57	37	7.10	7.10	7.10
1985-86	72	66	182	112	88	59	40	7.17	7.17	7.17
1986-87	77	70	170	163	104	68	52	7.73	6.92	7.67
1987-88	77	77	175	167	109	69	53	7.60	7.15	7.86
1988-89	81	80	175	167	114	73	56	8.21	7.60	8.36
1989-90	81	79	185	175	114	73	56	9.14	8.34	9.31
1990-91	93	94	214	211	136	82	67	10.53	9.39	10.90
1991-92	109	108	248	247	165	101	75	12.55	10.86	12.18
1992-93	123	121	278	273	174	106	83	13.23	12.72	13.57
1993-94	133	136	294	288	189	114	88	14.75	13.88	15.23
1994-95	153	155	328	330	213	128	103	16.13	15.81	16.39
1995-96	167	170	364	373	228	139	114	16.94	16.80	17.40
1996-97	204	201	412	425	259	161	130	18.72	18.40	18.79
1997-98	244	241	544	519	297	182	144	22.21	22.22	22.18
1998-99	254	247	581	557	310	189	158	25.11	24.57	24.57
1999-00	269	261	606	582	329	204	167	26.25	25.48	25.58
2000-01	285	264	660	610	353	210	168	27.22	26.39	26.51
2001-02	307	283	734	666	382	227	176	32.40	30.39	32.29
2002-03	322	291	757	685	400	241	184	31.71	31.35	30.29
2003-04	344	313	815	718	439	258	195	34.59	33.33	31.71
2004-05	389	358	839	786	439	258	195	35.98	34.59	32.31
2005-06	428	406	856	791	517	297	232	39.27	40.86	34.70
2006-07	449	423	963	884	566	324	255	46.48	47.56	40.53
2007-08	436	420	1,015	935	605	346	274	50.99	51.73	45.66
2008-09	658	641	1252	1174	767	461	376	61.34	62.27	52.78
2009-10	747	762	1224	1268	950	524	468	82.80	80.03	77.77
2010-11	811	828	1691	1550	1113	681	569	98.77	96.13	89.89
2011-12	1007	1015	2174	1929	1302	884	599	127.8	124.4	127.4

Source: Agriculture Policy Institute (API), Islamabad.

Table-7: Farm Level Cost of Production of Selected Crops

Crop/ year	Non-traditional Oilseeds		Potatoes	Gram	Onions	
	Sunflower	Canola			Punjab,Sindh & N.W.F.P	Balochistan
	----- Rupees per 40 kgs -----					
1982-83	127	-	38	141	23	23
1983-84	139	-	-	-	-	-
1984-85	139	-	41	138	-	-
1985-86	144	-	44	139	29	29
1986-87	146	-	43	149	29	29
1987-88	152	-	41	149	31	31
1988-89	165	-	47	157	34	34
1989-90	165	-	49	172	37	37
1990-91	186	-	49	173	43	43
1991-92	203	-	58	176	50	42
1992-93	218	-	61	192	55	48
1993-94	238	-	68	225	61	52
1994-95	282	-	73	263	67	59
1995-96	318	-	79	298	72	64
1996-97	377	371	98	313	82	73
1997-98	412	397	123	347	91	84
1998-99	434	421	125	323	102	93
1999-00	448	455	123	376	108	106
2000-01	461	461	124	436	106	125
2001-02	-	-	-	-	-	-
2002-03	-	-	-	-	-	-
2003-04	522	525	-	-	-	-
2004-05	549	-	-	-	-	-
2005-06	678	662	200	-	149	-
2006-07	715	688	200	720	-	-
2007-08	-	-	-	-	-	-
2008-09	-	-	-	-	-	-
2009-10	-	-	-	-	-	-
2010-11	-	-	-	-	-	-
2011-12	-	-	-	-	-	-

Source: Agriculture Policy Institute(API), Islamabad.

Table-8: Nominal and Real Support Prices of Food Crops: 1990-91 to 2011-12

Year	Wheat		Rice Paddy			
	Nominal	Real	Basmati		IRRI (FAQ)	
			Nominal	Real	Nominal	Real
1	2	3	4	5	6	7
----- Rupees per 40 kgs -----						
1990-91=100						
1990-91	112.00	112.00	142	142.00	77	77.00
1991-92	124.00	112.14	154	139.27	100	90.43
1992-93	13.00	107.04	189	155.62	114	93.87
1993-94	160.00	118.40	193	142.81	100	74.00
1994-95	160.00	104.76	190	124.40	142	92.97
1995-96	173.00	102.24	234	138.29	184	108.74
1996-97	240.00	126.86	283	149.59	161	85.10
1997-98	240.00	117.67	290	142.18	207	101.49
1998-99	240.00	111.29	370	171.57	231	107.11
1999-00	223.39	134.29	364	162.94	203	90.87
2000-01=100						
2000-01	300.00	300.00	410	410.00	180	180
2001-02	300.00	289.74	470	453.93	205	198
2002-03	300.00	281.03	502	470.26	218	204
2003-04	350.00	313.54	505	452.35	257	230
2004-05	400.00	327.92	560	459.09	338	277
2005-06	415.00	315.25	537	408.00	290	221
2006-07	425.00	299.87	594	419.11	310	219
2007-08	625.00	401.31	920	579.00	509	320
2008-09	950.00	533.59	1181	620.00	585	307
2009-10	950.00	447.19	1097	516.00	666	314
2010-11	950.00	424.98	1325	542.00	935	383
2011-12	1050.00	430.50	1424	526	798	295

Source: Agriculture Policy Institute (API), Islamabad.

Table-9: Nominal and Real Support Prices of Cash Crops: 1990-91 to 2011-12

Year	Seed Cotton		Sugarcane			
	MNH-93		Punjab		Sindh	
	Nominal	Real	Nominal	Real	Nominal	Real
1	2	3	4	5	6	7
----- Rupees per 40 kgs -----						
1990-91=100						
1990-91	330	330.00	15.25	15.25	15.75	15.75
1991-92	342	309.28	16.75	15.15	17.00	15.37
1992-93	386	317.83	18.50	15.23	18.75	15.44
1993-94	471	348.53	19.00	14.06	20.40	15.10
1994-95	810	530.35	20.50	13.42	21.90	14.34
1995-96	753	445.01	25.00	14.77	25.00	14.77
1996-97	872	460.94	38.00	20.09	40.00	21.14
1997-98	857	420.18	35.00	17.16	39.00	19.12
1998-99	936	434.94	32.00	14.84	36.00	16.69
1999-00	614	274.86	35.00	15.67	42.00	18.80
2000-01=100						
2000-01	957	957	45.00	45.00	50.00	50.00
2001-02	813	785	37.00	36.00	47.00	45.00
2002-03	921	863	35.00	33.00	36.00	34.00
2003-04	1370	1227	34.00	30.00	35.00	31.00
2004-05	885	726	40.00	33.00	41.00	34.00
2005-06	1017	773	60.00	46.00	60.00	46.00
2006-07	1110	782	60.00	42.29	67.00	47.23
2007-08	1468	924	60.00	37.76	67.00	42.16
2008-09	1557	811	100.00	52.11	100.00	52.11
2009-10	1916	894	150.00	70.61	160.00	75.32
2010-11	4003	1629	175.00	71.48	185.00	75.56
2011-12	2558	945	148.00	54.69	154	56.90

Source: Agriculture Policy Institute(API), Islamabad.

Table-10: International Prices of Major Agricultural Commodities: 1980-81 to 2011-12

Year	Cotton (cif North Europe)		Wheat	Rice	Sugar		Edible oils		
	Sindh/Punjab Afzal 1-1/32"	Index-B Cottons	(Fob, pacific US Western white)	100% second grade (fob, Bangkok)	Raw sugar ISA price (fob & stowed caribbean) port in bulk	White sugar (fob & stowed London)	Soybean oil (fob Decature)	Palm oil (fob Malaysia)	Sun-flower (fob NW European ports)
	US cents/lb.		----- US \$ per tonne -----						
1980-81	-	-	-	-	-	-	519	588	-
1981-82	64.96	63.96	-	-	203	284	464	571	-
1982-83	65.95	67.25	165	272	174	243	405	445	-
1983-84	74.13	79.68	145	267	139	190	520	502	-
1984-85	54.00	57.55	140	217	139	146	681	742	-
1985-86	36.13	39.25	134	188	133	185	572	498	-
1986-87	59.84	59.59	108	186	139	187	343	283	-
1987-88	63.94	64.97	119	220	206	246	349	344	-
1988-89	61.42	63.50	168	284	263	351	519	443	476
1989-90	76.51	77.27	158	296	301	402	417	328	482
1990-91	76.32	77.22	117	292	203	303	458	317	480
1991-92	56.67	57.06	154	290	202	280	417	365	459
1992-93	53.99	53.25	150	253	211	274	471	379	492
1993-94	61.45	69.39	133	297	248	323	596	448	627
1994-95	75.89	75.44	163	282	302	397	605	647	691
1995-96	80.95	80.48	200	365	270	384	550	523	617
1996-97	76.23	75.27	163	342	245	319	504	525	545
1997-98	72.23	68.00	139	308	218	272	571	605	726
1998-99	51.28	68.00	115	290	146	216	439	487	560
1999-00	47.46	49.28	112	235	159	202	349	331	410
2000-01	56.78	53.70	113	185	206	250	335	235	428
2001-02	3841	38.95	132	189	151	232	411	329	587
2002-03	51.36	51.42	146	198	179	228	539	421	592
2003-04	60.10	63.17	149	220	145	224	632	481	663
2004-05	46.10	51.19	143	274	198	275	545	392	703
2005-06	54.59	55.06	134	298	327	408	572	416	635
2006-07	58.63	56.61	188	312	257	376	771	655	846
2007-08	69.21	72.90	314	489	273	344	1325	1050	-
2008-09	N.Q	61.14	283	662	340	418	826	627	-
2009-10	N.Q	70.80	212	549	450	575	924	806	-
2010-11	N.Q	165.13	319	516	585	712	1308	1147	-
2011-12	N.Q	99.75	301	593	500	607	1235	1051	-

Sources:

- For wheat: International Grains Council, London.
- For cotton: Cotton Outlook, UK.
- For rice: Food Outlook. FAO, Rome.
- For sugar: International Sugar Organization (ISO), London.
- For edible oils: from 1980-81 to 2006-07, Oil World and onward food out look.

Table -11: Average Export Prices (fob Karachi) of Agricultural Commodities: 1980-81 to 2011-12

Year	Export prices (fob Karachi)					
	Cotton	Rice		Sugar	Onions	Potatoes
		Basmati	IRRI			
	----- Rupees per tonne -----					
1980-81	15,994	7,029	3,168	-	1,580	1,820
1981-82	12,694	7,599	3,061	2,887	1,830	1,800
1982-83	15,288	8,005	2,668	2,619	1,220	1,940
1983-84	18,041	8,090	2,697	3,341	1,240	1,850
1984-85	16,612	9,394	3,030	-	1,460	2,270
1985-86	12,976	10,813	2,582	-	1,290	1,640
1986-87	11,976	12,369	2,577	-	1,140	1,500
1987-88	21,429	12,672	3,520	-	1,260	1,800
1988-89	21,459	13,259	4,420	5,820	2,260	2,140
1989-90	32,424	14,583	3,860	9,699	1,850	1,380
1990-91	33,912	10,494	3,881	-	3,460	2,400
1991-92	28,435	10,261	4,825	-	2,080	1,980
1992-93	26,629	11,189	5,364	-	2,190	2,140
1993-94	31,818	12,427	5,166	9,912	4,170	2,580
1994-95	62,059	12,526	5,961	11,936	3,900	2,540
1995-96	56,029	13,830	7,923	12,015	3,840	1,770
1996-97	59,135	17,469	7,847	-	4,250	3,820
1997-98	61,847	19,827	8,676	13,757	5,930	5,420
1998-99	66,565	24,050	10,450	12,739	17,710	6,960
1999-00	45,335	26,390	9,587	16,524	7,995	5,532
2000-01	59,753	27,527	9,496	-	7,789	6,661
2001-02	42,971	28,830	10,273	6,605	6,234	6,555
2002-03	51,906	29,408	10,293	1,305	5,580	5,746
2003-04	89,616	29,759	12,133	13,689	7,429	5,966
2004-05	81,289	31,964	14,110	18,782	7,497	8,862
2005-06	78,572	34,340	14,356	26,055	9,839	11,250
2006-07	67,632	37,154	15,367	-	9,578	10,952
2007-08	79,179	59,952	29,238	22,001	13,203	10,151
2008-09	87,295	85,449	40,744	29,689	12,980	10,428
2009-10	1,62,347	69,525	35,457	-	16,301	17,590
2010-11	2,12,574	74,296	39,542	-	24,261	19,907
2011-12	2,43,871	77,326	41,609	55,951	13,581	24,885

Source: Federal Bureau of Statistics.

Table-12: Average Import Prices (cif Karachi) of Agricultural Commodities: 1980-81 to 2011-12

Year	Import Prices (cif Karachi)							
	Wheat	Gram	Sugar	Onions	Potatoes	Edible oils		
						Soyabean	Palm	Sun-flower
----- Rupees per tonne -----								
1980-81	2,076	-	6,704	8,760	1,710	5,770	5,450	-
1981-82	2,224	-	5,873	5,530	1,640	5,450	5,370	-
1982-83	2,204	-	4,248	5,280	5,420	5,760	2,270	-
1983-84	2,952	-	4,265	3,900	2,170	8,620	5,270	-
1984-85	2,807	-	-	-	-	12,470	8,640	-
1985-86	2,472	-	3,601	-	-	9,830	9,480	-
1986-87	3,132	-	3,686	-	-	6,830	6,490	-
1987-88	3,079	-	3,815	-	1,220	8,060	4,910	-
1988-89	3,229	-	4,708	-	-	11,560	6,960	-
1989-90	4,197	10,580	9,102	-	-	10,410	6,890	-
1990-91	3,208	8,360	8,269	3,730	1,070	13,733	8,340	-
1991-92	4,205	11,960	7,832	-	4,410	12,599	9,098	-
1992-93	4,212	8,730	7,357	2,560	3,900	11,494	11,296	18,234
1993-94	3,804	8,870	9,335	1,100	1,110	15,848	12,549	19,816
1994-95	4,874	12,450	13,228	2,070	1,030	21,394	22,214	22,683
1995-96	7,718	13,430	15,606	1,170	2,900	24,599	25,170	23,100
1996-97	7,570	10,860	14,480	2,360	2,560	23,489	22,420	24,400
1997-98	7,413	11,370	15,189	5,990	2,620	33,964	28,244	32,793
1998-99	5,886	17,420	15,122	3,800	1,570	30,881	30,488	36,378
1999-00	7,316	16,700	15,850	3,178	1,822	43,360	19,850	-
2000-01	-	19,370	15,557	3,514	1,162	36,320	16,240	-
2001-02	-	19,790	17,185	5,661	1,258	36,980	19,990	-
2002-03	-	18,290	18,158	3,063	1,214	36,730	25,300	-
2003-04	12,550	18,234	16,539	3,090	1,227	32,460	27,574	-
2004-05	12,924	18,990	19,606	8,294	3,756	44,261	27,254	-
2005-06	9,729	17,533	24,465	5,275	5,275	39,436	25,810	-
2006-07	18,520	35,659	26,804	10,632	5,479	50,878	32,498	-
2007-08	29,738	41,060	24,858	7,720	6,306	59,614	57,857	-
2008-09	27,398	54,245	35,830	19,789	10,846	76,138	61,654	-
2009-10	36,246	28,871	49,289	13,338	9,444	86,967	64,602	-
2010-11	40,505	55,719	56,854	14,000	8,754	1,30,500	87,047	-
2011-12	-	58,874	68,747	20,995	12,577	1,13,605	95,852	-

Sources: Federal Bureau of Statistics.

**Table-13: Import Parity Prices of Agricultural Commodities
1980-81 to 2011-12**

Years	Wheat based on fob (Pacific) price of US western white wheat		Sugarcane based on fob (London) price of white sugar		Onions	Potatoes	Edible oils		
	If consumed at Karachi	If consumed at Lahore	Punjab & NWFP	Sindh	Based on actual import prices		Soyabean	Sunflower	Canola
							Based on their respective quoted price		
----- Rupees per 40 kgs -----									
1980-81	-	-	-	-	-	-	-	-	-
1981-82	-	-	-	-	-	-	-	-	-
1982-83	-	-	-	-	-	-	-	-	-
1983-84	-	-	-	-	-	-	-	-	-
1984-85	-	-	-	-	-	-	-	-	-
1985-86	-	-	-	-	-	-	-	-	-
1986-87	-	-	7	7	-	-	-	-	-
1987-88	-	-	-	-	-	-	-	-	-
1988-89	-	-	19	19	-	-	-	-	-
1989-90	171	-	20	20	-	-	-	-	-
1990-91	-	-	19	19	-	70	-	-	-
1991-92	170	200	20	20	-	223	129	178	-
1992-93	190	240	24	25	-	-	138	207	-
1993-94	175	227	-	-	-	-	163	296	-
1994-95	236	293	-	-	-	-	342	391	-
1995-96	323	397	46	47	-	280	422	368	391
1996-97	280	368	-	-	115	256	430	368	417
1997-98	265	357	-	-	151	-	476	547	536
1998-99	280	357	-	-	-	-	379	420	427
1999-00	281	366	-	-	-	-	357	325	330
2000-01	320	404	45.16	46.22	-	-	-	-	-
2001-02	365	449	43.44	44.46	-	-	-	-	-
2002-03	403	453	39.13	40.05	-	-	-	-	-
2003-04	476	556	34.12	34.92	-	-	-	-	-
2004-05	457	544	43.71	44.74	-	-	-	-	-
2005-06	384	480	52.73	53.97	-	-	-	-	-
2006-07	637	696	62.49	63.96	-	-	-	-	-
2007-08	1,403	1,479	65.14	66.67	-	-	-	-	-
2008-09	1,169	1,249	62.00	64.00	-	-	-	-	-
2009-10	940	1,023	196.99	212.26	-	-	-	-	-
2010-11	1192	1274	230.	248	-	-	-	-	-
2011-12	1405	1485	177	178	-	-	-	-	-

Source: Agriculture Policy Institute (API), Islamabad.

Table-14: Export Parity Prices of Agricultural Commodities: 1980-81 to 2011-12

Years	Seed cotton based on Afzal 1-1/32" cif (North Europe) price	Rice (paddy) based on actual export prices		Sugarcane based on fob (London) price of white sugar		Onions	Potatoes
		Basmati	IRRI	Punjab & NWFP	Sindh	Based on actual exports prices	
----- Rupees per 40 kgs -----							
1980-81	-	-	-	-	-	-	-
1981-82	-	-	-	-	-	-	-
1982-83	-	-	-	-	-	-	-
1983-84	-	-	-	-	-	-	-
1984-85	-	-	-	-	-	-	-
1985-86	-	169	30	-	-	39	-
1986-87	191	229	46	-	-	-	-
1987-88	352	229	46	-	-	-	-
1988-89	279	228	66	-	-	20	9
1989-90	426	237	94	-	-	164	87
1990-91	477	134	40	-	-	49	39
1991-92	-	155	84	-	-	52	112
1992-93	391	167	82	-	-	33	136
1993-94	539	201	70	19	19	169	121
1994-95	711	162	74	27	26	127	79
1995-96	851	168	110	-	-	117	87
1996-97	903	244	129	33	34	125	105
1997-98	844	359	155	34	34	190	118
1998-99	514	421	189	22	22	530	223
1999-00	514	489	165	22	23	193	142
2000-01	936	509	170	26.90	27.53	-	-
2001-02	660	486	161	25.36	25.96	-	-
2002-03	807	494	168	26.05	26.66	-	-
2003-04	1,211	514	229	22.15	22.67	-	-
2004-05	840	549	278	30.72	31.44	-	-
2005-06	903	713	304	37.61	38.49	-	-
2006-07	1,099	738	333	46.00	47.08	-	-
2007-08	1461	1,362	530	46.39	47.48	-	-
2008-09	-	2,089	788	46.00	47.00	-	-
2009-10	-	1,511	621	156.07	167.88	-	-
2010-11	-	1480	691	192	207	-	-
2011-12	-	2140	1235	148.26	148.83	-	-

Source: Agriculture Policy Institute (API), Islamabad.

Table-15: Support and Market Prices of Wheat and Quantities Procured: 1980-81 To 2011-12

	Support price	Market price *	Difference between market and support prices	Procurement by government agency	Government agency
	Rs per 40 kgs		Percent	Million tonnes	
1980-81	58	60	3	3.99	PASSCO and Provincial Food Departments
1981-82	58	62	6	3.13	
1982-83	64	67	4	3.82	
1983-84	64	71	10	2.28	
1984-85	70	77	9	2.53	
1985-86	80	82	2	5.04	
1986-87	80	80	-	3.98	
1987-88	83	85	2	3.49	
1988-89	85	93	9	4.13	
1989-90	96	102	6	4.41	
1990-91	112	121	8	3.16	
1991-92	124	134	8	3.25	
1992-93	130	139	7	4.12	
1993-94	160	170	6	3.64	
1994-95	160	176	10	3.74	
1995-96	173	185	7	3.45	
1996-97	240	273	14	2.72	
1997-98	240	259	8	3.98	
1998-99	240	261	9	4.07	
1999-00	300	297	-1	8.55	
2000-01	300	275	-8	4.00	
2001-02	300	292	-3	4.04	
2002-03	300	305	2	3.51	
2003-04	350	388	11	3.51	
2004-05	400	471	18	3.45	
2005-06	415	420	1	3.88	
2006-07	425	432	2	3.88	
2007-08	625	651	26	3.92	
2008-09	950	950	0	9.19	
2009-10	950	902	-48	6.71	
2010-11	950	905	-45	6.24	
2011-12	1050	949	-101	5.79	

Note: * Average wholesale price of Multan, Okara and Hyderabad during post harvest period: April – July.

Sources:

- MINFAL, Islamabad.
- ALMA, Karachi.
- Agriculture Marketing Information Services, Lahore.
- PASSCO, Lahore.
- Provincial Food Departments.

Table-16: Support and Market Prices of Basmati and IRRI Paddy: 1980-81 to 2011-12

Year	Basmati		IRRI	
	Support price*	Market price **	Support price*	Market price**
	-----Rs per 40 kgs-----			
1980-81	75	-	39	-
1981-82	85	-	45	-
1982-83	88	90	49	-
1983-84	90	92	51	-
1984-85	90	92	51	-
1985-86	93	114	53	59
1986-87	102	113	53	53
1987-88	130	141	55	70
1988-89	135	135	60	73
1989-90	143	136	66	69
1990-91	143	143	73	78
1991-92	155	158	78	98
1992-93	175	190	85	112
1993-94	185	194	90	98
1994-95	211	192	103	137
1995-96	222	231	112	181
1996-97	255	296	129	164
1997-98	310	297	153	205
1998-99	330	362	175	234
1999-00	350	358	185	206
2000-01	385	302	205	179
2001-02	385	361	205	205
2002-03	-	471	-	221
2003-04	400	473	215	252
2004-05	415	453	230	346
2005-06	460	427	260	289
2006-07	-	451	-	320
2007-08	-	1289	-	525
2008-09	1250	1181	700	585
2009-10	1000	1097	600	666
2010-11	-	1320	-	931
2011-12	-	1424	-	798

Notes:

- * Support/indicative price of Basmati-385 paddy(Punjab) and IRRI paddy in Sindh
- ** Average wholesale prices of in the main producing area markets during post-harvest Basmati paddy in the Punjab and for IRRI paddy in Sindh.

Sources:

- Agriculture Marketing Information Services, Lahore for Basmati and Agriculture Market committees of respective area of Sindh for IRRI.

Table-17: Support and Market Prices of Seed Cotton and average Spot rate of Cotton Lint: 1980-81 to 2011-12

Year	Seed cotton *		Cotton Lint	
	Support price	Market price ⁽ⁿ⁾	Support price	Market price
	-----Rs per 40 kgs-----			
1980-81	182	174	476	482
1981-82	192	193	473	453
1982-83	197	188	473	496
1983-84	200	336	496	824
1984-85	203	182	500	549
1985-86	207	196	500	509
1986-87	207	211	500	538
1987-88	207	234	504	610
1988-89	210	238	507	617
1989-90	225	279	539	732
1990-91	260	334	645	840
1991-92	290	337	715	883
1992-93	310	382	770	982
1993-94	325	475	801	1,232
1994-95	423	794	986	2,060
1995-96	423	739	986	1,962
1996-97	540	840	-	2,575
1997-98	540	808	-	2,525
1998-99	-	876	-	2,722
1999-00	825	580	-	2,051
2000-01	725	941	-	2,961
2001-02	780	783	-	2,289
2002-03	800	842	-	2,577
2003-04	850	1282	-	3163
2004-05	925	893	-	2296
2005-06	975	1,038	-	2577
2006-07	1,025	1,144	-	2750
2007-08	-	-	-	3233
2008-09	1465	1541	-	3667
2009-10	-	1910	-	4358
2010-11	-	3936	-	9002
2011-12	-	2305	-	6250

* Average wholesales prices of seed cotton (phutti) in the main producing area markets of the Punjab and Sindh.

Sources:

- Pakistan Central Cotton Committee (PCCC), Karachi.
- Agriculture Marketing Information Services, Lahore.
- Karachi Cotton Association for Cotton Lint Prices.

Table-18: Support and Market Prices of Gram, Onions and Potatoes: 1980-81 to 2011-12

Year	Gram		Onions		Potatoes	
	Support price	Market price*	Support price	Market price*	Support price	Market price*
-----Rs per 40 kgs-----						
1980-81	-	186	19.30	27	26.80	61
1981-82	-	249	19.30	77	26.80	53
1982-83	-	189	25.00	49	40.50	35
1983-84	153	149	30.00	82	40.50	60
1984-85	153	169	30.00	62	40.50	61
1985-86	153	151	32.50	36	42.00	45
1986-87	161	131	34.50	76	44.50	47
1987-88	161	242	36.50	66	44.50	94
1988-89	180	245	40.00	94	50.00	85
1989-90	200	182	44.00	76	55.00	38
1990-91	210	177	54.50	123	55.00	104
1991-92	230	267	65.00	85	65.00	81
1992-93	235	338	70.00	156	67.00	82
1993-94	275	479	84.00	136	77.00	77
1994-95	315	632	84.00	168	84.00	103
1995-96	330	332	92.00	125	84.00	238
1996-97	400	423	106.00	201	115.00	288
1997-98	425	401	125.00	234	145.00	116
1998-99	425	628	140.00	257	145.00	106
1999-00	-	760	-	105	145.00	111
2000-01	425	798	-	120	-	144
2001-02	-	882	-	243	-	195
2002-03	-	933	-	108	-	231
2003-04	-	610	-	262	-	148
2004-05	-	694	-	266	-	157
2005-06	-	720	-	198	-	379
2006-07	-	1,102	-	198	-	469
2007-08	-	1,293	-	404	-	406
2008-09	-	1,709	-	720	-	526
2009-10	-	-	-	716	-	664
2010-11	-	2213	-	443	-	635
2011-12	-	-	-	-	-	-

Note: * Average wholesale during post-harvest prices in main producing area markets.

Sources:

- ALMA, Karachi.
- Agriculture Marketing Information Services, Lahore.

Table-19: Support/ Indicative Prices of Sunflower and Canola Oilseeds: 2000-01 to 2011-12

Crop year	Sunflower *		Canola *	
	Support price/ indicative price	Market price	Support price/ indicative price	Market price
	-----Rs/40 kgs-----			
2000-01	-	650	-	600
2001-02	-	600	-	650
2002-03	630	725	650	750
2003-04	670	700	650	795
2004-05	-	721	-	758
2005-06	690	728	690	760
2006-07	830	730	750	1,051
2007-08	1,600	1,725	1225	1,705
2008-09	-	1273	-	1400
2009-10	1600	1633	-	1600
2010-11	2000	2114	1800	2225
2011-12	-	-	-	-

Note: * Average wholesale prices during post-harvest in major producing area markets.

Sources: i) From 2000-01 to 2006-07, All Pakistan Solvent Extractor Association (APSEA).
ii) From 2007-08 to onward, Pakistan Oil Seed Development Board, Islamabad

Table-20: Average Market Prices of Fertilizer: 1983-84 to 2011-12

Year	(Rs per 50 kg bag)				
	Urea	DAP	SSP	NP	SOP
1983-84	128	133	40	110	40
1984-85	128	133	40	110	40
1985-86	128	146	40	110	50
1986-87	130	146	46	110	50
1987-88	135	161	53	119	60
1988-89	165	185	58	137	72
1989-90	185	217	68	150	107
1990-91	195	249	93	173	150
1991-92	195	272	93	173	150
1992-93	205	264	93	196	195
1993-94	210	269	96	203	195
1994-95	235	379	150	250	195
1995-96	267	479	183	320	331
1996-97	340	553	211	384	532
1997-98	341	565	200	397	540
1998-99	346	665	234	457	541
1999-00	327	649	298	464	543
2000-01	363	670	253	468	682
2001-02	394	710	280	519	765
2002-03	411	765	287	539	780
2003-04	420	913	329	622	809
2004-05	468	1001	373	704	996
2005-06	509	1079	407	710	1170
2006-07	527	993	334	670	985
2007-08	581	1931	560	1294	1495
2008-09	751	2578	874	1700	2175
2009-10	800	2267	7263	1452	2370
2010-11	1035	3236	896	2108	2807
2011-12	1705	4118	1259	2768	3761

Sources:

1. Federal Bureau of Statistics.
2. National Fertilizer Development Centre, Islamabad.