The Journal of Animal & Plant Sciences 20(1): 2010, Pages: 28-33
ISSN: 1018-7081

IMPACT OF SUPPORT PRICE AND FERTILIZER OFFTAKE ON RICE PRODUCTION AND WHEAT ACREAGE IN NWFP, PAKISTAN

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ABSTRACT

The present study is attempted to measure the significant contribution of price factor (support price) and non-price factor (fertilizer offtake) towards rice production and wheat acreage responses in NWFP, Pakistan by employing Nerlovian adjustment model through ordinary least square estimation technique over a period of time (1975-76 to 2007-08). 1st aspect of findings suggest that support price has strong bearing on rice production ($P<0.05$) and fertilizer offtake has attained significant relationship with rice production ($P<0.10$). The announcement of support prices had certainly strong bearing on rice production in NWFP. In view of production response of rice, the short run and long run support price elasticities as well as short and long run fertilizer offtake elasticities were found sizeable with low divergence. 2nd aspect of findings suggest that fertilizer offtake has shown remarkable influence over wheat acreage ($P<0.10$). Hence the issue of nutrient deficiency was overcome due to balanced use of fertilizer offtake especially NPK had played a crucial role in achieving enhanced rice production and wheat acreage in NWFP.

Key words: Support price, fertilizer offtake, acreage.

INTRODUCTION

The floor and ceiling prices are announced by the Government of Pakistan or its authorized authority and these prices are legitimate, usually for the country as a whole (Farooq *et al*., 2001). The main purpose of the announcement of support prices or floor prices is to confine the prices of commodities not to reduce beyond the level of the support prices announced (Ashiq, 1992; Schiff and Valdes, 1992). If the prices reduce beyond this limit, the government is ready to purchase the commodity on support prices and if the prices were far above the ground, then the growers can sell their output in open market (Rainer, 2003). The government announces support prices for agricultural goods to protect its producers against the price reduction and on the other hand, it provides subsidies on certain items to reduce the burden on the consumers as the prices went beyond the purchasing power of the general consumers. Subsidy is defined as the financial grant provided by the Government for minimizing the burden of high prices on general consumers. The basic aim of the provision of subsidy is to decrease the price to a level easily accessible to an ordinary consumer (Ernst and Saadat 1988; Dumas *et al.*, 1999).

Therefore it is equally important to pay considerable attention to this essential sector by comparing the responses of supply price along with non-price factors on rice production and wheat acreage in NWFP to meet the growing needs of present population (Andrew *et al.*, 1997; James, 2000; Kanwar, 2004). Pakistan is basically an agriculture economy, but since 1947, the supply price along with non-price response of major crops like rice and wheat has started aggravating; even today we are anxious to realize that the country in general and NWFP in particular is deficient in its rice and wheat input requirements i.e seed, fertilizers, prices etc. This burning issue has been engaging serious attention of the Government, NGO's, Multi-National Companies and other stakeholders in the country. This has been the dilemma of our economy that the most important major GDP contributor sector has been ignored since 1947. Agriculture embraces a great variety of enterprises of all sizes, each producing many varieties of rice crop (Md *et al*., 1995). Fertilizer offtake is one of the key inputs to agricultural production. Balanced usage of fertilizer offtake of total NPK (N/Tonnes) helps in increasing crop yield from 30 to 60 percent in different regions of the country. Almost the entire available soil in the country is certainly nutrient deficient. To overcome the issue of nutrient deficiency, use of nutrient fertilizer especially NPK has become vital for achieving the higher agricultural production. However, the main obstruction in exploring the full potential of the soil has remained below due to imbalances in fertilizer usage especially, in terms of over application of nitrogenous fertilizer compared to phosphatic fertilizer. It is generally accepted that high quality chemical fertilizer (fertilizer offtake in NPK) is the most important input for improving fertility status of soil. Quality fertilizer is an important component in agriculture productivity system. Fertilizer has occupied the unique status among various agricultural inputs because the effectiveness of all other inputs mainly depends on the potential of fertilizer in proper NPK

proportion depending upon the nature of soil, climate and other biological requirements. Fertilizer offtake is a high technology input and is an innovation most gladly adapted. Improving admittance to good quality fertilizer is a critical requirement for sustainable agricultural growth and food security. The understanding of supply price response of major crops in NWFP would help in guiding and regulating agriculture production decisions, guiding and regulating consumption decisions and guiding and regulating market intelligence at farm gate, good means of communications and transports, and other marketing decisions over time, form and space at farm gate. The present investigation was planned. to estimate the significant contribution of support price and fertilizer offtake towards rice production and wheat acreage, to work out short and long run elasticities of price and non-price factors of rice and wheat crops and to suggest policy guidelines for rice production and wheat acreage responses in NWFP.

MATERIALS AND METHODS

Actual adjustment of rice production and wheat acreage in one time span is specified as proportion (α and β) respectively of intended complete adjustment to the equilibrium rice production (Y*t) and wheat acreage A^*_t.

Rice production and wheat acreage adjustment hypothesis and equations:

$Y_t - Y_t\text{-}1 = \alpha (Y^*_t - Y_{t-1}) \quad 0<\alpha\leq 1$
$Y_t = \alpha Y^*_t + (1-\alpha) Y_{t-1}$ ----------(i)
$A_t - A_{t-1} = \beta (A^*_t - A_{t-1}) \quad 0<\beta\leq 1$
$A_t = \beta A^*_t + (1-\beta) A_{t-1}$---------- (ii)

The model describes the dynamics of rice production supply by incorporating price expectations. In a linear form this relationship is expressed as;
$Y_t = \alpha + \gamma P^*_t + U_t$ ----------(iii)

The model further describes the dynamics of wheat acreage by incorporating price expectations. In a linear form such relationship is expressed as;
$A_t = \alpha + \gamma P^*_t + U_t$ ---------- (iv)

Where as;

Y^*_t= Expected production of rice in tonnes in year t.
P^*_t= Expected price in year t.
Y_t = Actual production of rice in tonnes in year t.
Y_{t-1} = Lagged production of rice in tonnes in last year.
A^*_t=Expected acreage of wheat in hectares in year t.
A_t = Actual acreage of wheat in hectares in year t.
A_{t-1} = Lagged acreage of wheat in hectares in last year.
α = Coefficient of rice production adjustment.
β = Coefficient of wheat acreage adjustment
γ = Price expectation respectively.
U_t = Error term in year t.

As the farmers make plan for taking appropriate decisions of sowing their crops (rice and wheat) especially on the bases of expected support prices and availability of fertilizers (NPK) in NWFP. If the λ approaches to 0, there is no difference between this year's expected price and last year actual price and if λ =1, expected price is similar to last year actual price.
Since P^*_t in case of rice production and wheat acreage is unobservable, the expectations are assumed to be formulated;

$SP^*_t = SP^*_{t-1} + \lambda (SP_t - SP^*_{t-1}) \quad 0<\lambda\leq 1$
$SP^*_t = SP^*_{t-1} + \lambda (SP_t - SP^*_{t-1})$
$SP^*_t = \lambda SP_t + (1- \lambda) SP^*_{t-1}$ ----------(v)

SP^*_t = Expected support price in respect of rice production and wheat acreage in year t.
SP^*_{t-1} = Long run equilibrium support price of rice production and wheat acreage in last year.
SP_t = Actual support price in year t.
λ = Coefficient of support price adjustment.

Equation v implies that the farmers adapt their expectations of future price in the light of previous skill, knowledge and experience. By rearranging equation v, it can be easily shown that the current year expected price is a proportion of both last year's actual and expected prices. However the rice equilibrium output (Y^*_t) is symbolically expressed as the function of support market price (SP^*_t) and the explanatory variable FO_t (Fertilizer takeoff), which influence supply too. Thus substituting equation i into v, and rearranging give;

$Y^*_t = ao + a1\ SP^*_t + a2\ FO_t + U_t$ -----(vi)

Since SP^*_t is unobservable, we assume that farmers make their planting decisions based on their own memory about price that prevailed locally in the preceding period ($SP^*_t = SP_{t-1}$). Hence SP_{t-1} is taken as lagged price and as other variables (Fertilizer takeoff and its own lagged value) which affect supply is inducted in equation (vi), so

$Y^*_t = ao + a1\ SP_{t-1} + a2\ FO_t + a3\ Y_{t-1} + U_t$ -----(vii)

By substituting equation (vii) into (i), following estimation equation is obtained in respect of rice production and wheat acreage respectively;

$Y_t = ao\ \alpha + a1\ \alpha\ SP_{t-1} + a2\ \alpha\ FO_t + a3\ \alpha\ Y_{t-1} + e_t$ --(viii)
$A_t = ao\ \alpha + a1\ \alpha\ SP_{t-1} + a2\ \alpha\ FO_t + a3\ \alpha\ A_{t-1} + e_t$ ---(ix)
$V_t = U_t - (1-\alpha) U_{t-1}$ --------- Adaptive expectation model

RESULTS AND DISCUSSION

The basic estimating equation of rice production expressed in the econometric form given below;
$Y_t = a_o + a_1 SP_t + a_2 FO_{t-1} + a_4 Y_{t-1} + V_t$ ---x
Where;
Y_t= Rice production (tonnes) in year t.

SP_t = Support price of wheat crop deflated by CPI in year t.
FO_t = Fertilizer offtake (N/Tonnes) in year t,
Y_{t-1}= Rice production lagged one year
V_t = Error term in year t

Table 1: Log-linear response functions for rice production response in NWFP over a period of time (1975-76 to 2007-08)

Dependent variable is Log Q_t
33 observations used for estimation from 1975-76 to 2007-08

Regresser	Coefficient	Standard Error	T-Ratio [Prob]
B	7.676	2.318	3.311[0.002]***
LSPT	0.086	0.040	2.163[0.039]**
LFOT	0.067	0.039	-1.711[0.098]*
LQLAG	0.374	0.180	2.081[0.046]**

R^2 =0.70 Adjusted R^2 =0 .67 F(3, 29)=22.273[0.000]*** DW= 2.4

***Significance at 1% **Significance at 5% *Significance at 10%

Estimated equation of Nerlovian Supply Response Model in case of rice production

$LY_t = 7.676\ ^{*}\beta + 0.086\ ^{*}LSP_t + 0.067^{*}LFO_t\ ^{*} + 0.374^{*}LY_{t-1}$

Table 2: Adjustment Coefficient and Short and Long-run Elasticities for Log Linear Rice Production Response Function:

Dependent Variable	Adjustment Coefficient β	Price Elasticities Support Prices		Non-Price Elasticities Fertilizer Offtake	
		Short run	Long run	Short run	Long run
Y	0.63	0.09	0.14	0.07	0.11

In the light of available secondary source of data from Crop Statistics, 2007-08, Crop Reporting Services, Agriculture, Livestock and Cooperative Department, NWFP, Pakistan Economic Survey, 2003-04, Agricultural Statistics of Pakistan, 2007-08, the regression is run on the log linear version of model x by applying the Ordinary Least Squares (OLS) measures of estimation. The results shown in Table 1 and 2; provide useful data about factors for bringing about change in rice production as dependent variable of the model (Mahmood *et al*., 2004; Edward, 1993). The estimated coefficients of support price variable, SP_t carries theoretical right signs in the model, as it turns out to be highly significant (P<0.05), while the fertilizer offtake variable, FO_t, has shown significant relationship with rice production at P<0.10, which is in agreement with Farooq *et al*., (2001). This is quite valid and expected result which also indicates low divergence between the short run and long run support price elasticity estimates reflected in Table 2. Coefficients of multiple regression in Table 1, indicates a strong relationship between the dependent variable with the respective independent variables as the size of R^2 is 0.70, indicates that 70 % change in the rice production occurs due to support prices, fertilizer offtake and its own lagged value (Jeffrey and Sumner, 2003). While the value of adjusted R^2 is 0.67, which is the measure of the effect due to the variables selected in the model. For support prices, the short run and long run elasticities worked out as 0.09 and 0.14, for fertilizer offtake, the short run and long run elasticities have been worked out as 0.07 and 0.11 respectively. Since the value of Durbin Watson is 2.4, which indicates that there is moderate negative autocorrelation, which does not show any evidence to reject the model, indicating acceptance of hypothesis of a correct functional form. It means that t–ratio and F distributions are applicable and model is quite efficient. As the value of adjustment coefficient (β) is 0.63, which is greater in quantity, indicating less constraints of technical and institutional factors placed on the producers planned rice production level. F ratio (P<0.01) confirms overall fitness of Nerlovian adjustment model. Hence overall performance of the Nerlovian adjustment model in explaining possible variations on rice production are quite good. Technological and institutional development is quite necessary to raise rice production considerably (Khattak and Anwar, 2006).

The basic estimating equation of wheat acreage in the econometric form given below;

$$\mathbf{A_t = a_o + a_1 SP_t + a_2 FO_{t-1} + a_3 A_{t-1} + V_t \text{ ----xi}}$$

Where;
A_t= Wheat acreage (hectares) in year t.
SP_t=Support price of wheat crop deflated by CPI in $year_t$.
FO_t = Fertilizer offtake (N/Tonnes) in year t,
A_{t-1}= Wheat acreage lagged one year
V_t = Error term in year t

In the light of available secondary source of data from Crop Statistics, 2007-08, Crop Reporting Services, Agriculture, Livestock and Cooperative Department, NWFP, Pakistan Economic Survey, 2003-04, Agricultural Statistics of Pakistan, 2007-08, the regression is run on the log linear version of model xi by applying the Ordinary Least Squares (OLS) measures of estimation. The results shown in Table 3 and 4; provide useful data about factors for bringing about change in wheat acreage as dependent variable of the model. The estimated coefficients of support price variable, SP_t carries theoretical right signs in the model, but it turns out to be non-significant, while the fertilizer offtake variable, FO_t, has shown significant relationship with wheat acreage at P<0.10 (Andrew *et al*., 1997; Subervia, 2008; Fisher, 1975), which are in agreement with present study, indicating low divergence between

Table 3: Log-linear response functions for wheat acreage response in NWFP over a period of time (1975-76 to 2007-08)

Dependent variable is Log A_t 33 observations used for estimation from 1975-76 to 2007-08			
Regresser	**Coefficient**	**Standard Error**	**T-Ratio [Prob]**
B	3.745	1.480	2.531[0.017]**
LSPT	-0.002	0.010	-0.253[0.802]ns
LFOT	-0.026	0.014	-1.921[0.065]*
LALAG	0.749	0.105	7.116[0.000]***
R^2 = 0.77 Adjust R^2 = 0.74 F(4, 28)= 24.003[0.000]*** DW= 2.1			

***Significance at 1% **Significance at 5%
*Significance at 10% ns= Non-significance

Estimated equation of Nerlovian Supply Response Model in case of wheat acreage

$LA_t = 3.745\ ^{*}\beta - 0.002^{*}LSP_t - 0.026^{*}LFO_t\ ^{*} + 0.749^{*}LA_{t-1}$

Table 4: Adjustment Coefficient and Short and Long-run Elasticities for Log Linear Wheat Acreage Response Function:

Dependent Variable	**Adjustment Coefficient B**	**Price Elasticities**		**Non-Price Elasticities**	
		Support Prices		**Fertilizer Offtake**	
		Short run	**Long run**	**Short run**	**Long run**
A	0.25	-0.002	-0.009	-0.02	-1.04

the short run and long run support price elasticity estimates reflected in Table 4. Coefficients of multiple regression in Table 3, indicates a strong relationship between the dependent variable with the respective independent variables as the size of R^2 is 0.77, indicates that 77 % change in the wheat acreage occurs due to support prices, fertilizer offtake and its own lagged value. While the value of adjusted R^2 is 0.74, which is the measure of the effect due to the variables selected in the model. For support prices, the short run and long run elasticities worked out as -0.002 and -0.009, for fertilizer offtake, the short run and long run elasticities have been worked out as -0.02 and -1.04 respectively. Since the value of Durbin Watson is 2, which indicates that there is no autocorrelation, indicating acceptance of hypothesis of a correct functional form. It means that t–ratio and F distributions are applicable and model is quite efficient. As the value of adjustment coefficient (β) is 0.25, which is smaller in quantity, indicating greater constraints of technical and institutional factors placed on the producers planned wheat acreage level. F ratio ($P<0.01$) confirms overall fitness of nerlovian adjustment model. Hence overall performance of the Nerlovian adjustment model in explaining possible variations on wheat acreage are quite good. Technological and institutional development is quite essential to raise wheat acreage considerably (Chaudhary, 2000).

Conclusion: The study conducted to estimate the significant influence of support prices and fertilizer offtake on rice production and wheat acreage in NWFP over a period of time (1975-76 to 2007-08). Nerlovian Adjustment model being most popular supply response model have been applied and regressions run on the estimated reduced log form of equations x (for rice production) and xi (for wheat acreage). Keeping in view the result findings of rice production responses in NWFP, it has been observed that the short run and long run price elasticities (support prices) worked out as 0.09 and 0.14, while the short run and long run non-price elasticities (fertilizer takeoff) have been worked out as 0.07 and 0.11 respectively. In case of wheat acreage, the short run and long run price elasticities (support prices) worked out as -0.002 and -0.009, while the short run and long run non-price elasticities (fertilizer offtake) have been worked out as -0.03 and -1.04 respectively. Support price announced by government of Pakistan has certainly protected the farmers, traders and marketers against the gradual decease in market price and succeeded in reviving their confidence for achieving progressive rice production in NWFP. The fertilizer offtake (NPK) being essential agricultural input, influences the rice production and wheat area significantly, resulted in attaining increased agriculture growth. Rice and wheat were fertilized proper and balanced doses of nitrogen, phosphorus and potash in NWFP during the period (1975-76 to 2007-08), resulted in proper flourishing of nutrients for optimum rice production and wheat acreage in NWFP. Through timely announcement of support price, being minimum guaranteed price maintained for rice and wheat before the onset of planting season and by fertilizing, one can ensure that rice production and wheat acreage targets can be achieved in order to meet the growing demands of consumers at local, national and international levels.

REFERENCES

Andrew M. O., Morrissey, C. Vaillant (1997). Aggregate Export and Food Crop Supply Reponses in Tanzania. A discussion Paper No.4 in the Credit Project on 'Infrastructural and Institutional Constraints to Export Promotion' as part of the DFLD Trade and Enterprise Research Programme (TERP). The Centre for Research in Economic Development and International Trade.

Ashiq, R. M. (1992). Supply Response of Wheat and Rice Crops in Pakistan. Pakistan J. Agricultural Econ., 1(1): 81-98.

Chaudhary, M. A. (2000). Economic Analysis of Supply Response in Pakistan's A agriculture. Lahore J. Econ., 5(2): 1-17.

Duffy, A. Patricia, Shalishali, K. Kinnucan, and W. Henry (1994). Acreage Response Under Farm

Programs For Major Southeastern Field Crops. J. Agric. and Applied Econ., 26(2): 367-378.

Dumas, F. Christopher, Goodhue, and E. Rachael (1999). The cotton acreage effects of boll weevil eradication: a county-level analysis. J. Agric. and Applied Econ., 31(3): 475-497.

Edward Oczkowski (1993). Price and quantity controlled agricultural markets and disequilibrium econometrics: A survey. Agric. Econ., 9(1): 53-87.

Ernst, L. and Y. Saadat (1988). Issues relating to agricultural pricing policies and their analysis in developing countries. Agric. Econ., 2(1): 19-37.

Farooq, U., T. Young, T. Russell, I. Muhammad (2001). The supply response of basmati rice growers in Punjab. Pakistan: price and non-price determinants. J. Intern. Dev., 13(2): 227-237.

Fisher, B. S. (1975). Supply response in the wheat-belt of South-Eastern Australia: the impact of delivery quotas on wheat plantings. J. Agric. Econ., 19(2): 81-93.

Govt. of Pakistan (2008). Crops Statistics of Pakistan. Agricultural Statistics of Pakistan.

James, M. W. (2000). Supply Response in an Agrarian Economy with Non-Symmetric Gender Relations. College of Wooster, Ohio, USA. University of Utah, Salt Lake City, USA. 1(2): 1327-1340.

Jeffrey, D. M. and D. A. Sumner (2003). The Influence of Commodity Programs on Acreage Response to Market Price: With an Illustration Concerning Rice Policy in the United States. American J. Agric. Econ., 85 (4): 857-871.

Kanwar, S. (2004). Price incentives, non-price factors, and crop supply response: the Indian cash crops. Working Paper No.132. Centre for Development Economics, Department of Economics, Delhi School of Economics.

Khattak, N. R. and H. Anwar (2006). Role of Farm Inputs and Rice Productivity in District Swat: an econometric analysis. Sarhad J. Agric., 22(1):

Mahmood, M. A., A. D. Sheikh, M. Kashif (2004). Acreage response of rice in Punjab, Pakistan. J. Agric. Res., 45(3).

Md, K., M. R. Md, E. Haque (2008). Economic Efficiency in Rice Farming in Bangladesh. Pakistan J. Agric. Econ., 6: 1-19.

Rainer, T. (2003). Price Incentive, Non-Price Factor, and Agricultural Production in Sub-Saharan Africa: A cointegration Analysis A contributed paper selected for presentation at the 25th International Conference of Agricultural Economics, August 16-22, 2003. Durban, South Africa.

Schiff, M. and A. Valdes (1992). The Plundering of Agriculture in Developing Countries. A study by World Bank.

Subervia, J. (2008). The Variable Response of Agricultural Supply to World Price Instability in Developing Countries. J. Agric. Econ., 59(1): 72-92.

Data Appendix 1: Showing rice production (in tonnes), support prices (Rs. per 40 kg), fertilizer offtake (N/Tonnes) and lagged rice production (in tonnes) over a period of time (1975-76 to 2007-08)

Year	Rice production (in tonnes)	Support Price (Rs. per 40 kg) of rice	Fertilizer offtake (N/Tonnes) Total NPK	Lagged rice production (in tonnes)
1975-76	84592	96.45	548120	76900
1976-77	85345	108.80	631290	84592
1977-78	87668	108.80	712240	85345
1978-79	104000	117.89	879820	87668
1979-80	104666	117.89	104405	104000
1980-81	105088	75.00	107946	104666
1981-82	110733	85.00	107748	105088
1982-83	112713	88.00	124357	110733
1983-84	115793	90.00	120258	112713
1984-85	115544	90.00	125344	115793
1985-86	113832	93.00	151113	115544
1986-87	118332	102.00	178388	113832
1987-88	107452	130.00	172022	118332
1988-89	117832	135.00	173987	107452
1989-90	114592	143.00	189039	117832
1990-91	117987	143.00	189290	114592
1991-92	122950	155.00	188393	117987
1992-93	111875	175.00	214763	122950
1993-94	118438	185.00	214678	111875
1994-95	118171	211.00	218306	118438
1995-96	118222	222.00	251497	118171

Year	Rice production (in tonnes)	Support Price (Rs. per 40 kg) of rice	Fertilizer offtake (N/Tonnes) Total NPK	Lagged rice production (in tonnes)
1996-97	123506	255.00	241298	118222
1997-98	130241	310.00	264605	123506
1998-99	133579	330.00	258326	130241
1999-00	129209	350.00	283343	133579
2000-01	131154	385.00	296397	129209
2001-02	121724	385.00	292860	131154
2002-03	99937	385.00	301976	121724
2003-04	130765	400.00	322198	99937
2004-05	123192	415.00	369400	130765
2005-06	117513	460.00	380400	123192
2006-07	122856	460.00	367200	117513
2007-08	128293	460.00	375500	122856

Source: Pakistan Economic Survey, 2003-04, Agricultural Statistics of Pakistan, 2007-08 and Crop Statistics, 2007-08, Crop Reporting Services, Agriculture, Livestock and Cooperative Department, NWFP

Data Appendix 2: Showing Wheat acreage (in hectares), support prices (Rs. per 40 kg), fertilizer offtake (N/Tonnes) and lagged wheat acreage (in tonnes) over a period of time (1975-76 to 2007-08)

Year	Wheat acreage (in hectares)	Support Price (Rs. per 40 kg) of wheat	Fertilizer offtake (N/Tonnes) Total NPK	Lagged wheat acreage (in hectares)
1975-76	706972	39.65	548120	694900
1976-77	716831	39.65	631290	706972
1977-78	695697	39.65	712240	716831
1978-79	704714	48.23	879820	695697
1979-80	745357	58.00	104405	704714
1980-81	790428	58.00	107946	745357
1981-82	813203	58.00	107748	790428
1982-83	824454	64.00	124357	813203
1983-84	793574	64.00	120258	824454
1984-85	785598	70.00	125344	793574
1985-86	781934	80.00	151113	785598
1986-87	802805	80.00	178388	781934
1987-88	756532	83.00	172022	802805
1988-89	811183	85.00	173987	756532
1989-90	835580	96.00	189039	811183
1990-91	840129	112.00	189290	835580
1991-92	842187	124.00	188393	840129
1992-93	849606	130.00	214763	842187
1993-94	829576	160.00	214678	849606
1994-95	864034	160.00	218306	829576
1995-96	866146	173.00	251497	864034
1996-97	842841	240.00	241298	866146
1997-98	918118	240.00	264605	842841
1998-99	857616	240.00	258326	918118
1999-00	806481	300.00	283343	857616
2000-01	790285	300.00	296397	806481
2001-02	746944	300.00	292860	790285
2002-03	732145	300.00	301976	746944
2003-04	741649	350.00	322198	732145
2004-05	748570	400.00	369400	741649
2005-06	721310	415.00	380400	748570
2006-07	754243	425.00	367200	721310
2007-08	747365	625.00	375500	754243

Source: Pakistan Economic Survey, 2003-04, Agricultural Statistics of Pakistan, 2007-08 and Crop Statistics, 2007-08, Crop Reporting Services, Agriculture, Livestock and Cooperative Department, NWFP