

Draft

Scoping study on Food Security status in Pakistan

Contents

Acronyms

Introduction

Section 1- National Status of Food Security and Nutrition in Pakistan

1. Overview of Food and Nutrition Situation in Pakistan
 - 1.1 Status on Agricultural Production particularly staple crops
 - 1.2 Hunger in Pakistan
 - 1.3 Agriculture's contribution to the Economy and to Food Security/Self-sufficiency, yield, employment
 - 1.4 Effects of food prices spikes on poor
 - 1.5 Shifts in the government's overall development goals and strategies since the food price crisis in 2007
 - 1.6 Climate change, disasters and food security-Post floods scenario
 - 1.7 Policy scenario, devolution process and institutionalization of food security
 - 1.8 Compliance to international agreements and programs

Section 2 – Agricultural Programs for Food Security and Nutrition in Pakistan

- 2.1 Government programs on food security
- 2.2 National Zero Hunger Action Plan (NZHAP) of Government of Pakistan
- 2.3 The Special Program for Food Security and Productivity Enhancement for Small farmers
- 2.4 European Union Food Facility
- 2.5 Corporate agriculture farming (CAF), a threat to food security

Section 3-

Section 4-

Section 5-

AAHM	Alliance against hunger and malnutrition
ASEAN	Association of Southeast Asian Nations
CAF	Corporate agriculture farming
CMP	Crop Maximizing project
FAO	Food and agriculture organization
GDP	Gross domestic produce
GHI	Global Hunger Index
GoP	Government of Pakistan
IFPRI	International Food Policy research Institute
ISMC	Input Sales marketing Centres
KP	Khyber Pukhtunkhwa
NMDSR	National Ministry of Food Security and Research
NZHAP	National Zero Hunger Action Plan
OCHA	Office for the Coordination of Humanitarian Affairs
RSPN	Rural Support Program Network
SAARC	South Asia Association for Regional cooperation
SDPI	Sustainable Development Policy Institute
WFP	World Food Programme

Introduction

Pakistan is a low income country where agriculture plays an important role in providing employment and food to its large population, which is touching 180 million now, and increasing with a growth rate of 2.09%. According to this growth rate, Pakistan could become 4th. most populous country in 2050 (Government of Pakistan, 2010). Along with the population growth, land under cultivation has also increased to 40% since 1960. About 68% people in Pakistan live in the rural areas, and according to Planning Commission of Pakistan, number of people below poverty line was about 64 million in 2008, whose source of livelihood is mainly agriculture. Agriculture provides employment to the 2/3 of the population contributes 22% in the GDP and constitute 60% of the total export in Pakistan.

Like the entire world, sky rocketing food prices during last decade also jolted Pakistan's economy and affected food security scenario. According to the report of Prime Ministers Task Force on Food Security 2008, about 77 million Pakistanis were food insecure (consuming less than 1700 kcal/day). Wheat constitutes the 55% of the total calorie intake in poor households.

The 1974 World Food Summit described the term of food security as "Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices". In 1983 Food and Agriculture Organization (FAO) further improved this definition by including "secure access by vulnerable people to available supplies" to create balance between demand and supply sides. However the definition kept on evaluated by different institutions and international conferences.

The most commonly acceptable concept of food security is a phenomenon when all people at all times have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.

Alliance against Hunger and Malnutrition (AAHM) is a global initiative to attract public attention towards issues related to global hunger and malnutrition, which are affecting sustainable development process. It comprises on national alliances which comprise on various stakeholders including civil society organizations, which are struggling against hunger and poverty. This scoping study is a part of process to establish a national chapter of AAHM in Pakistan, which will bring stakeholders closer to stimulate agenda against hunger and malnutrition.

Section 1- National Status of Food Security and Nutrition

1. Overview of Food and Nutrition Situation in Pakistan

1.1 Status on Agricultural Production particularly staple crops:

Wheat is the major staple food in Pakistan. In 2005, Pakistan produced 21.5 million tons of wheat which was more than total wheat production of entire Africa (20.3 tons). Wheat constitutes a major agricultural area and grown on more than 20 million acres of land (Government of Pakistan, 2005). Green revolution technologies helped a constant increase in wheat production in Pakistan after 1960s. According to government of Pakistan's report of 2005, potential of increase of wheat production is high from current quantity of two tons per hectare. However factors such as absence of certified seeds, growing scarcity of irrigation water, untimely sowing, drought prone varieties, absence of official price incentive are the main hurdles in getting high wheat production. The government however claims to struggle for growing more wheat to get self reliance in food production and reduce dependence on import of wheat to feed the rapidly growing population.

Rice is second important staple food after wheat which is also an important source of foreign exchange. Pakistan is one of the largest rice producers in the world, with an annual production of more than 5 million tons. Rice occupies 2.5 million hectare that is 10.9% of the total cultivated area with production of 5.1 million tons of milled rice. (Pakkisan (<http://www.pakkisan.com/english/allabout/crop/rice.shtml>)).

Maize is mainly grown in the rain-fed areas of KP and Punjab. The current production level is about 1.7 million tons. Maize plays an important role in food security as it is grown in marginal mountainous and rain fed areas, which are generally food insecure. Currently its production is far below its potential. Oil seeds production is low against its potential, and the Pakistan is importing a large quantity to meet the demand of its fast growing population.

Following tables 1, 2 and 3 depicts the per capita food availability in Pakistan

Table 1. Per Capita Availability of Food in Pakistan

Years	Per capita annual availability (kg/person/annum)							Per capita daily avail.(kg)
	Food grains	Edible Oil /Veg.Ghee	Meat	Milk	Fruits	Vegetable	Total	
1990-91	137.44	9.99	13.90	60.93	47.73	23.49	293.48	804.06
1991-92	144.18	13.07	14.38	62.26	48.30	27.70	309.90	849.03
1992-93	149.93	12.50	15.48	63.09	49.06	24.45	314.51	861.68
1993-94	158.80	10.50	16.07	64.60	53.65	27.20	330.82	906.35
1994-95	138.20	12.19	16.51	66.07	55.63	28.84	317.45	869.72
1995-96	148.55	11.42	17.25	67.16	56.23	27.03	327.64	897.64
1996-97	153.95	10.46	17.87	68.58	55.34	29.98	336.19	921.06
1997-98	161.07	11.59	14.00	81.45	56.48	31.11	355.70	974.53
1998-99	167.25	12.38	14.13	81.72	56.07	29.04	360.59	987.93
1999-00	158.83	11.08	14.19	82.15	52.23	24.55	343.03	939.80
2000-01	136.51	11.48	14.42	82.92	51.31	28.65	325.29	891.20
2001-02	135.53	10.67	14.50	83.45	51.29	25.35	320.78	878.85
2002-03	142.38	10.77	14.65	84.28	50.36	26.65	329.09	901.61
2003-04	143.83	11.16	14.74	84.42	47.82	28.23	330.20	904.66
2004-05	142.58	12.35	15.19	85.50	52.64	26.17	334.42	916.23
2005-06	140.98	12.75	16.33	90.30	51.25	31.18	342.79	939.14
2006-07	144.79	12.81	16.70	94.54	50.04	29.79	348.67	955.26
2007-08	155.04	13.29	17.00	93.93	53.71	31.23	364.20	997.79
2008-09	153.99	13.45	17.50	94.81	52.88	24.06	356.69	977.22

Source: (Farooq *et al.*2009)

Table 2: Per Capita Availability of Calories and Shares of Various Sources

Year	Total		Wheat		Other Grains		Pulses		Animal		Others	
	Calories	%	Calories	%	Calories	%	Calories	%	Calories	%	Calories	%
1961	1754	100	742	42	342	19	114	6	260	15	296	17
1970	2203	100	984	45	438	20	77	3	257	12	447	20
1980	2124	100	967	46	304	14	49	2	261	12	543	26
1990	2410	100	1153	48	274	11	58	2	309	13	616	26
1995	2345	100	1048	45	212	9	59	3	353	15	673	29
2000	2447	100	1000	41	244	10	68	3	436	18	699	29
2001	2426	100	1000	41	256	11	58	2	436	18	676	28
2002	2419	100	999	41	275	11	59	2	437	18	649	27
2003	2320	100	945	41	108	5	61	3	322	14	886	37
2004	2231	100	897	40	107	5	62	3	321	14	844	38
2005	2271	100	914	40	108	5	63	3	325	14	861	38
2006	2423	100	930	38	110	6	65	3	330	15	888	37

Source: Ahmad *et al.* (2010)

Table 3: Availability of selected food in Pakistan (Kg/annum)

	2004-5	2005-6	2006-7	2007-8	2008-9	2009-10
Wheat	122.9	117.7	125.4	132.8	126.8	125
Rice	13	15.1	12.7	15	21.2	17.9
Pulses	6.8	8.2	6.9	7.2	7.7	7.7
Edible oil	12.4	12.8	12.8	13.3	13.5	12.5

Source: agriculture statics of Pakistan 2009-10

1.2 Hunger in Pakistan

Pakistan was mentioned to have score of 20.7 at Global Hunger Index (GHI) of International Food Research Institute, during 2006-2009, based on data of 2009. According to the International Food Research Institute's GHI score for Pakistan improved from 21.7 in 2008 to 21.0 in 2009, to 19.1 in 2010, and its world ranking has dropped to 59 in 2011 from 52 in 2010. It was ranked 61 in 2008 and 58 in 2009 on a list of 81+ nations.

Table 4:
Global Hunger Index Scores and Rankings for Selected Countries

Rank	Country	1990	1996	2001	2011
56	Togo	26.6	22.2	23.6	20.1
57	Lao PDR	29.0	25.2	23.6	20.2
58	Tanzania	23.1	27.4	26.0	20.5
59	Pakistan	25.7	22.0	21.9	20.7
60	Rwanda	28.5	32.7	25.2	21.0
61	Liberia	23.5	26.9	25.8	21.5
61	Sudan	29.2	24.7	25.9	21.5
63	Djibouti	30.8	25.8	25.3	22.5
63	Madagascar	24.4	24.8	24.8	22.5
65	Mozambique	35.7	31.4	28.4	22.7
66	Niger	36.2	36.2	30.8	23.0
67	India	30.4	22.9	24.1	23.7
68	Zambia	24.7	25.0	27.6	24.0
69	Angola	43.0	40.7	33.4	24.2
70	Bangladesh	38.1	36.3	27.6	24.5
71	Sierra Leone	33.0	30.5	30.7	25.2
72	Yemen, Rep.	30.4	27.8	27.9	25.4

Pakistan experienced two consecutive flood and heavy monsoon in 2010 and 2011, which caused increase in malnutrition and hunger among its poor segment of population. The heavy floods of 2010 in Pakistan, which submerged 1/5th of land area, killed 2000 people, directly affected 20 million people also sparked a food crisis. According to the National Nutrition Survey food prices went sky high in the country after floods. Food insecurity was already prevalent even before the floods. In 2008, the UN estimated that 77 million Pakistanis were hungry and 45 million malnourished. While many developing nations were recovering from the global food crisis of 2007-08, situation in Pakistan didn't change much. However in 2010, wheat and rice, two main staple crops had cost 30 to 50% times more than they did before the global food crisis.

According to this Survey, the widespread hunger and malnutrition is a serious threat to the future of Pakistan, as children are exposed to severe malnutrition and related impacts. The survey was sponsored by UNICEF and conducted by the Aga Khan University, reveals that Pakistan has failed miserably to even feed the children. According to the survey 44% children less than five years old in Pakistan are under developed due to malnutrition. These children in the future are unlikely to attain the same height as of the non-stunted children; thus, within next fifteen years almost half of Pakistan's youth will not even be as tall as youth in other countries.

According to the survey current nutrition status is alarming because Pakistan did not make any significant progress in reducing malnutrition. In the southern part of Sindh province incidence of malnutrition has reached to 21-23%. The main reason is decreasing purchasing power of people and a family in Pakistan is forced to spend 46% of the family income on food, as compared to 35% in India and 7% in the USA (Times Magazine, March 2011, What We Spend in a Month by Stephen Gandel).

According to Jean-Luc Siblot, country representative of WFP in Pakistan, malnutrition in some parts of Pakistan is as high as in Africa. According to UN joint assessment report, in 2008, 72 million people, 51% of the population, were food insecure and consumed less than 2,100 kcal per day. Since 2005-06 the food insecure population has increased by 12 million. The number of severely food insecure (consuming less than 1,700 kcal per day) has risen by 9.6 million to 45.3 million people (28% of the population). Two thirds of these new severely food insecure people live in rural areas.

The results of National Nutrition survey revealed that about 42% of the households are food secure while the remaining 58% are food insecure. Out of 58% insecure households, 28.4% were food insecure without hunger, 19.8% were food insecure with Moderate hunger and 9.8% were food insecure with severe hunger. In urban areas 52% are food insecure compared with rural areas where 60.6% are food insecure.

1.3 Agriculture's contribution to the Economy and to Food Security/Self-sufficiency, yield, employment

Pakistan has been primarily an agriculture based country. According to the World Bank, in the year 2007, 20% of the GDP of Pakistan came from the agriculture sector. Livestock and fisheries are important sources of employment as well as export earnings. Livestock accounts for 40% of the agricultural sector and 9% of the total GDP. Pakistan ranks twentieth in farm output at global level and world's fifth largest milk producer.

Agriculture is the major source of employment in Pakistan. As more than half of the population of Pakistan lives in rural areas. According to the 2007-08 Development Report of the UNDP, 65% of the total population of Pakistan lived in rural areas in 2005, where agriculture is the sole means of subsistence and employment of the people. According to the Economic survey of Pakistan agriculture remained to be the main source of employment as 43.61% of the total employment is provided by this sector in the fiscal year of 2006-07.

However the main drawback is that the agriculture economy of Pakistan is based on a highly skewed land ownership pattern, where 86% of 6.6 million households own less than 50% of the agricultural land and water resources as compared to 14% of farmers who own more than 50% of the land. About a third of the rural labour force consists of landless and small farmers.

1.4 Effects of food prices spikes on poor:

Pakistan is among 40 countries, hit hard by the crisis of food prices hike. According to official sources in the former ministry of food and agriculture, rice, maize, pulses and wheat flour prices risen to 88%, 49%, 58% and 30% respectively at the end of cropping season of March 2008. The factors behind this crisis are increased food production costs in the result of high fuel costs, inter provincial ban of wheat trade, smuggling out of wheat to Afghanistan and instability in the foreign markets. This situation made the poor people highly food insecure as more people were pushed below the poverty line. The joint UN Inter agency mission report in July 2008 stated that about 17 million people were feared to join the food insecure category of 60 million people during the food crisis, bringing the total to about half of the population in Pakistan.

According to this report trend of food prices escalation started from decade of 90s and this trend has a severe impact on poor people. This crisis has affected overall economic performance of Pakistan and slowed it down. This trend has also nullified the past gains in the fields of economic growth and poverty alleviation. The report suggests that the measures to protect poor people and domestic markets from crisis global food prices are very expensive and financially unsustainable.

The impact of this food price hike was significant in rural areas of Pakistan, particularly in Balochistan and Khyber Pukhtunkhwa (KP). About 7 million households in Pakistan fell into food deficient category.

1.5 Shifts in the government's overall development goals and strategies since the food price crisis in 2007; National framework and strategies for agricultural development

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The high food prices are undermining the poverty reduction efforts as food expenditures make the largest share of the poor's total expenditures and it has severely eroded their purchasing power.

The poorest households are forced to spend 70% or more on food and their ability access health and education are severely affected. Girl child is the most affected section among the poor as she is the first to be dropped out from school. This situation has worsened the already poor nutrition levels among children.

Overall rural households were more affected where food expenditure rose by 10% and total expenditure by 4%. Poor had to spend 13% more on food as compared to 5% by the rich people. The share of severely food insecure population rose from 23% in 2005-06 to 28 % in 2008.

The segment of moderately food insecure people, who consume more than 1,700 kcal per capita per day, changed slightly during the same period. The high food prices has also had negative impact on human health due to malnutrition. Less food consumption increases malnutrition, this increases vulnerability to diseases and causes high mortality and morbidity rates among poor.

Responding to the crisis and taking note of UN joint assessment report the then Prime Minister of Pakistan established a National Task Force to monitor the situation and make recommendations to provide relief to vulnerable and affected people and reduce the negative impacts on economy. Funds were allocated to provide relief to 5.2 million food insecure households, however poor capacities and lack of resources at province level is the major drawback to reach out vulnerable and affected households, and still 1.8 million households could not be assisted.

Responding to the food prices hike crisis the government of Pakistan (GoP) took immediate steps such as;

- a- Import of 2.5 million tons of wheat
- b- Controlling out smuggling of wheat
- c- Removal of import duty on wheat
- d- Imposition of minimum price ceiling on rice export
- e- Subsidies on fertilizers
- f- Wider availability of subsidized wheat flour on state run utility stores
- g- Initiation on social safety net schemes such as Benazir income support program of about PKR 34 billion to benefit 6-7 million poor households, along with other already operational charity schemes of *Baitul Mal* and *Zakat* and *Ushr*¹

¹ State run safety net schemes under Islamic system in which tax from wealthy people and land holders is levied and given to poor people through cash grants

1.6 Climate change, disasters and food security-Post floods scenario:

Pakistan experienced two consecutive flood and heavy monsoon in 2010 and 2011, which resulted further caused increase in malnutrition and hunger among its poor segment of population. The heavy floods of 2010 in Pakistan, which submerged 1/5th of land area, killed 2000 people, affected 20 million people directly and sparked a food crisis, particularly among the displaced people.

Climate change is revealing itself in the form of extreme weather events such as flash flood or prolonged droughts. Pakistan has experienced severe floods in 2010. These floods damaged crops worth of \$ 2,185 million, equivalent to 3% of the GDP, and also affected the top soil to make it unable to grow crops. A total 3,586,330 hectare crop area affected. The livestock in massive quantities, worth of \$ 441 million also perished during the floods. The Office for the Coordination of Humanitarian Affairs (OCHA 2010) estimates that, as of early September 2010, more than 20 million people had been displaced by the flood and by some estimates the damage to crops, housing, other buildings, roads, and irrigation infrastructure now reaches \$6.5 billion (OCHA 2010).

Wheat is cultivated in the winter season (wheat is called *rabi* crop), in the *barani* (rain-fed) areas of KP, Punjab and Sindh. The floodwaters, though brought sedimentation with them, required for the soil fertility, but affected wheat cultivation by damaging to irrigation infrastructure and roads. Farmers also lost seeds, tools, and machinery. These floods caused extensive damage to standing monsoon season (*kharif*) crops in August and early September. According to the Office for the Coordination of Humanitarian Affairs (OCHA; 2010), losses were worth of \$2.2 billion, mainly in rural Punjab (\$1.2 billion).

Post disaster response requires immediate planning and strategy to bring the economy back on the normal track in the least possible time. Government has to come up with immediate short, medium and long term response during and post disaster situation.

Pakistan Poverty Alleviation Fund (PPAF) and the Benazir Income Support Programme (BISP) delivered poverty-alleviating interventions and resources. The PPAF utilizes a participatory and community-based model with a network of more than 130,000 community organizations and groups in 127 districts covering 30,000 villages. This large and established network enabled PPAF to operate in a convenient position to reach affected communities in a timely and efficient manner. Besides these institutions a large number of international and national NGOs channeled resources to rehabilitate farmers and agriculture in flood affected areas.

1.7 Policy scenario, devolution process and institutionalization of food security:

Pakistan is a federation of 4 provinces and federally administered areas. The style of governance in the country has been predominantly federal, in which many sectors were directly under the federal ministries. There was a “concurrent list” which depicted matters which came under the jurisdiction of both the federal and provincial governments. Provinces have limited decision powers. However in 2011, the elected parliament approved a land mark 18th constitutional amendment, by which powers were transferred from centre to the provinces. Since June 30, 2011 seventeen ministries and divisions have been devolved and their authorities have been transferred to the provincial governments.

Pakistan under the structural adjustment program, made a policy mistake by abandoning agriculture sector and not investing on research, development and institutional infrastructure. Pakistan never had any national level food policy. The situation became further grave when under the new 18th constitutional amendment many federal ministries and institutions had to devolve and their functions and powers were transferred to provinces.

According to the experts, the devolution of the formal federal Ministry of Food, Agriculture and Livestock (MINFAL) would create serious issues relating to food security, international co-operation and agriculture research as the provinces with the exception of Punjab do not have required infrastructure and capacities to deal with the food security.

However the National Assembly's Standing Committee on Food and Agriculture recommended that the MINFAL should not be devolved to the provinces under the 18th Amendment since food security is a burning issue (Express Tribune May 24, 2011).

In the current constitutional scenario agriculture may be a provincial subject but provision of food; agriculture research and professional/higher education are still federal subjects. The experts argue that agriculture is a federal subject around the world and therefore the government should not completely decentralize the ministry. Following these concerns a new federal ministry with the title "National Ministry of Food Security and Research (NMDSR), was created in October 26, 2011, with a specific mandate of protecting food security of the people of Pakistan and collaborate with international actors.

The government of Pakistan initiated many agricultural projects aiming at increasing production of food. These programs included development of communication and irrigation infrastructure and investment in agriculture research. The government initiated a Special Program for Food Security (SPFS) with major support from FAO. The SPFS objectives were:

- 1) To ensure the adequacy and access to food supply; and
- 2) To maintain the stability of the agricultural production, with a special focus on enhancing productivity and profitability of the major food crops (i.e. wheat, rice maize and oilseeds) on a sustainable basis.

The project was first implemented in 109 villages in May 2002 under the title of Crop Maximization Program (CMP) and then it was further scaled up to extended to more than 1000 villages all over Pakistan in 2008, totally supported by the government itself.

The major focus of Pakistan's food security strategy revolves around supply side and getting self sufficiency in wheat production. While the production and marketing of other food commodities were left on the mercy of market players.

A representative of Ministry of Food and Agriculture, in his presentation in an international conference on food security, at World Bank suggested a multidimensional and comprehensive policy framework and action plan needed to enable the nation to cope up with the food security crisis.

The salient features of this policy framework should be;

- Adequate production enhancement of food production
- Availability of farm inputs at reasonable control prices to farmers, and particularly small farmers which could ensure better economic returns
- Stability of prices of food commodities to make them accessible for poor segment, through utility stores
- Subsidies and provision of safety nets to the poorest and most vulnerable section of society through food stamps and ration cards
- Free movement of agricultural commodities within the country through a sustainable food distribution system
- Increasing public and private investment to build grain storages and cold storages to preserve grain and other valuable food commodities

Specific initiatives

- Launching of Benazir Income Support Programme
- Establishment of National Task Force on Food Security
- Announcing attractive farm-gate price for wheat crop
- Official intervention price mechanism for rice and cotton
- Enhancing food grains storage capacity in the country
- Special programme for food security
- Subsidized food items through governments Utility Stores network
- Development initiatives for sustaining growth in agriculture by improving water use efficiency and conservation
- Strengthening of agricultural research
- Seed production/supply and farmers access to new seeds
- Benazir Tractor Scheme and similar provincial initiatives
- Enhancing agricultural credit outreach and allocation and credit insurance scheme
- Promotion of horticulture production and marketing
- Improved marketing and investment in compliance of international quality standards
- Enhanced support to livestock and fisheries sectors
- Special initiatives to enhance productivity of wheat and cotton
- Enhancing oilseed production (canola/sunflower)

1.8 Compliance to international agreements and programs

Pakistan is among four SAARC (South Asia Association for Regional Cooperation) members including Bangladesh, India and Sri Lanka, who have ratified the declaration of the food bank. The decision to develop a food bank for the region was taken in April 2007 at the summit of the SAARC. In view of the experience of food crisis in the region and other countries of the world since 2007 the decision to develop a food bank for the region was a prudent and farsighted one.

Pakistan is a signatory to the Millennium Development Goals (MDGs) of which MDG-1 calls for reducing poverty and extreme hunger by half till 2015. Pakistan is also a signatory of International Covenant on Economic Social and Cultural Rights, FAO Voluntary Guidelines and other instruments that recognize food as a fundamental human right that has to be protected. The success of the food security program depends upon the political will of the government, however it is disappointing that a 2012 UN report on the status of the Millennium Development Goals (MDGs) notes that Pakistan is lagging behind some of its MDG targets, and eradicating extreme poverty and hunger by 2015 has become a staggering challenge.

Section 2 – Agricultural Programs for Food Security and Nutrition in the country

2.1 Government programs:

The Government of Pakistan has taken some policy and program initiatives to deal with the food security situation in the country. According to the Annual Plan 2012-2013 (please see Annex-1)

A public sector development program with a financial outlay of Rs. 495 million has been initiated for the projects of newly created ministry of National Food Security and Research. These projects reflect the above referred official policy elements, such as research and development, emergency food delivery, seed improvement, infrastructure development and grain storage.

Present government has been increasing the support prices of wheat and other agriculture commodities to please land owners class to secure their political support. In 2008 the procurement prices were raised from Rs. 625 per 40 kg to Rs. 950 per 40 kg. This step caused inflation. According to a report of the State Bank of Pakistan (SBP) cumulative price of wheat increased by 120 % since 2008, far higher than the 40% during 2003 and 2007, far greater than the international price increase of 22% for wheat in the same period. Similarly, sugar prices have jumped to 184% higher since 2008, compared with 46% increase during 2003-07 (Haq Musings, 2011).

However the government's strategy to cope up with the food security challenges lacks participation of affected population and focus on landless and small growers, who are among the most vulnerable section of the society facing abject poverty, malnutrition and hunger. The long term development measures have been neglected in designing these programs, which could lead the nation towards a food secure future. The successive governments are shying away from the radical issue of land redistribution to the landless peasants to balance inequality due to high land concentration in Pakistan. Peasants and small growers are the back bone of Pakistan's agriculture system, but they lack access to secure land titles, financial credits, farm inputs, new technology and water.

This is always big farmers who reap benefits of official subsidies and support schemes. On the contrary landless farmers are made dependent on social safety net schemes for food and necessities, which are making them dependent on charity.

2.2 National Zero Hunger Action Plan (NZHAP) of Government of Pakistan:

“Malnutrition rate in some parts of Pakistan are as high as in Africa,” Jean-Luc Siblot, Country Representative, World Food Programme (WFP)

The NZHAP is a recently launched government initiative to address the problems emerging from high prices of food commodities and its impact of poor segments of the population. The NZHAP, which was developed by stakeholders' consultation, aims at reaching 61 million people in Pakistan, who are affected by hunger and malnutrition with a financial package of \$ 16 billion, within five years. The NZHP comply the “right of food” for every citizen of Pakistan. The program includes provision of food to the most food insecure and vulnerable sections of society particularly malnourished children, pregnant women and primary school children. The program also includes a school feeding and establishment of “zero hunger shops” in 45 very food insecure districts of Pakistan.

Under this program a National Council for Food Security comprising of representatives of federal and provincial governments, private sector and civil society will be established. A consultative workshop has already been held in March 2012 to produce a set of guidelines and frameworks for National Zero Hunger Action Programme and the operational strategy (Source: Ministry of National Food Security and Research)

Experts however are skeptic about the success of the program as the current government is suffering from many crises such as terrorism, lack of electric power and bad governance. Success of such program is conditional with creation of jobs for people and offering incentives to small farmers for food growing. Merely food distribution has a risk to promote charity approach.

2.3 The Special Program for Food Security and Productivity Enhancement for Small farmers (Crop maximization Project-II –CMP-II)

The main objective of this ambitious project is to supplement country's ongoing efforts to increasing food production through enhancing crop and livestock productivity, ensure food security and reduce poverty through improving income of small farmers. The project is a response to Government of Pakistan medium term development framework, poverty reduction strategy and millennium development goals (MDGs)

The CMP-II is a Rs. 8 billion five-year project of the former Ministry of Food, Agriculture. This project aims at enhancing food production through supporting small farmers. The project covers 1,012 target villages in 28 districts of Pakistan. The project has been implemented with the participation of a Rural Support Programme Network (RSPN) a network of large rural development organizations. The project involves social mobilization and capacity building of farmers' organizations.

The project was approved by the government of Pakistan on May 4th 2007 for a period of five years (July 2007 to June 2012) with a total cost of Rs 8.013 billion. The main idea was to increase production of small farmer upto 30-35% through capacity building, technology packages and tested methodologies.

The main objectives of the project were; to supplement the country's ongoing efforts to increase farm production through productivity enhancement of small farmers, ensure food security and reduce poverty through improving income of small farmers. The project also aimed at developing a sustainable mechanism of productivity enhancement and food security of small farmers, who are the beneficiaries of the project.

The project includes organizing small farmers into village organizations and facilitates them with revolving funds at village level for providing production loans for farm inputs and micro-credits. One of the main objectives of the project is to link small farmers with the buyers in the market through Input Sales marketing Centres (ISMCs). Each ISMC is planned to serve a cluster of 15-20 villages in the project area, to ensure getting quality farm inputs for the farmers and marketing their produce.

The project covers total 50,000 farmers in 1,012 Villages including 430 in Punjab, 230 in Sindh, 160 in KP, 150 in Balochistan, 40 in AJK and 2 in FATA. It serves holders of 5-25 acres of land.

The project provides following services;

- Organization and empowering farmers' Village Organizations (VOs).
- Establishment of 1012 Revolving Fund Accounts of Rs 2 to 4 million per village, for VOs to get credits for their member farmers.
- Training and capacity building of farmers and VOs in community management skills, crop production technologies through adoption of proven best agriculture practices and establishing and operation of small enterprises.
- Crop Productivity Enhancement by plantation of wheat, cotton, rice, maize, potato, oilseeds, pulses and vegetables on an area of about 200,000 acres by the beneficiary farmers using improved production technologies
- Establishment of livestock centres 130-150 for a cluster of 5-8 villages
- 3-4 small dairy farms at villages level
- Establishing 10,000 small enterprises, such as fish farms, bee farms, sheep for for income generation

- Development of computer based farmers data base

The future of the project is in the doldrums after the devolution under the 18th constitutional amendment, as government has refused to provide funding through federal set up, and projects are handed over to the respective provincial governments. At present about Rs. 500 million is required by the project for 2012-2013.

2.4 European Union Food Facility:

This is a 40 Million Euros Food Facility Project which aims at combating the rising food prices in Pakistan. The main purpose of the project is to increase sustainable food security for the most vulnerable households in food deficient areas of Punjab, Sindh, KPK and Balochistan by achieving increased staple food availability; increased productivity as a result of improved irrigation/water harvesting structures; provision of storing facilities and agricultural tools, strengthened productive capacities and local governance.

The EFFF targets small-scale farmers owning two to four hectares of land and the women are receiving the agricultural package which includes a 50kg bag of wheat seeds, a 50kg bag of urea, 50kg DAP and vegetable seeds for tomato, turnip, spinach and peas, to produce adequate grain for their household consumption.

The EUFF is being implemented by FAO and WFP since May 2009 and it currently supports over 161,000 households of small-scale farmers in 17 most food vulnerable districts in Pakistan. The average landholding of the targeted farmers is 2 to 4 acres of land. The Punjab component of the project is being implemented in the districts of Chakwal, Multan, Dera Ghazi Khan and Sahiwal. The project also includes kitchen gardening plots where women farmers planted various vegetable with the support from the EUFF project.

In addition to the European Union Food Facility, FAO will support over 500,000 households in Pakistan with agriculture inputs during the current Rabi season, over 214,000 households will be benefited with livestock veterinary and feed support while over 19,000 households will get benefit from rehabilitation and repairs to the improved irrigation structures.

2.5 Corporate agriculture farming (CAF), a threat to food security

In Pakistan, a Corporate Agriculture Farming Policy (CAF) was instituted by the military government in 2002, in order to see a quick fix solution to decreasing foreign investment in the country. The policy offers state lands to foreign corporations, along with an attractive investment package. The policy allows a 50-year lease on government-owned lands to foreign companies, which is extendable for another 49 years, with no ceiling on the amount of investments and landholdings. It also allows 100% full remittance of all produce and earnings, exemption from local labor laws, and various duty and tax exemptions. The policy offers the following lucrative incentives;

- 100% foreign equity investment
- Full remittance (100%) of capital, profits and dividends
- No upper ceiling on landholding
- Purchase or lease of land for 50 years through open auction, extendable for 49 years
- Exemption from existing labor laws
- 0% customs duty and sales tax under SRO 575(1)/2006 of 5th June 2006
- Exemption of duty on land transfer of land for CAF
- Dividends not subject to tax

The CAF came under heavy public criticism and debate in a country where agriculture engages accounts 48% of employment, and large majority of farmers is poor and landless. Much of the land deals were finalized in secrecy to avoid public scrutiny. However media that sparked continued following this issues and somewhat was able to create a controversy when it exposed reports about huge land sales/leases involving foreign parties.

In September 2009, the then government announced the availability of 8 million hectares of fertile, cultivable lands in four provinces for corporate farming. In addition, there was a huge quantity of unutilized barren lands that can be offered for CAF investors for crop production and livestock. (Lok Niti, ANGOJ Journal 2012).

The government is a firm believer that CAF is a means for modernizing age old agriculture and will boost investment, incomes and jobs in the country. It will bring improve productivity through the latest production technology; produce high-quality agricultural products; and make the country more competitive in agricultural production. Government believes that new investments are needed, because financial institutions are reluctant to finance small and landless farmers because of risks of crop failure involved.

Corporate giants interested in CAF and acquiring land in Pakistan usually come mostly from the Middle East countries where cultivable land and irrigation water are in short supply. The United Arab Emirates (UAE), which imports 85% of its food, purchased 324,000 hectares of farmland in Punjab and Sindh provinces in June 2008. The civil society terms this land grab as “water grab” because this is not land, but water, which is tied up with the land, is attracting investors.

CAF is seen as a final knell in the coffin of dead issue of land reforms in the country. CAF policy has come as blessing in disguise for the large land owners, who now have a mechanism to avoid any possible land redistribution law in Pakistan, as they can join foreign investors and sell or lease their lands to avoid possible confiscation. The small and landless farmer is being seen as the biggest loser in the CAF scenario, as small farmers will not be able to compete with large mechanized farms and will be forced to sell their lands on throw away prices and migrate to urban areas to join already unemployed people. CAF is posing a serious threat to food security of small and land less farmers and their families who will be endangered species to survive within an extremely hostile environment, where they are struggling to survive with almost no state support, without power, water and affordable farm inputs.

Section 3 — Recommendations on the possible role of the Alliance (at national & regional)

Following are the broad based recommendations coming out of above experiences and observations:

- Expansion of social development and social safety net schemes for poor and vulnerable population
- Coordination between various food security schemes and projects to ensure complementarily and avoid duplication;
- Scaling up of health services to the poor, particularly scaling up existing mother and child health schemes and treatment of acute malnutrition;
- Enhancement and expansion of the national school nutrition programme, with a focus on primary schools;
- Providing incentives for farmers to increase wheat production through reducing the gap between domestic price and the import parity price, and the timely announcement of the guaranteed minimum price; and provision of targeted agricultural input subsidies to the small farmers.
- Ensuring an enabling environment and level playing field to the private sector in cereal trade;
- Maintaining a strategic wheat reserves, but reducing the operational reserves over time, making them equivalent to the requirements for targeted food subsidies for vulnerable groups;
- Quarterly sentinel based monitoring of the changes in i) the prices of food

Recommendations for AAHM

Considering the poor status of food security in Pakistan, a strong national Alliance Against Hunger and Malnutrition (AAHM) is envisaged with the following composition;

- Government representatives
- Civil society organizations and networks
- UN organizations
- Donors and support organizations
- Academic and research institutions
- Individual experts
- Representatives of media
- Corporate members and food companies
- Celebrities as food security ambassadors

The objectives of Pakistan AAHM should be;

- Enhancement and promotion of food security and food sovereignty concept in Pakistan

- To assist government in designing and implementing food security policies and programs
- To monitor food security status
- Engage parliamentarians on issues related to food security

Following are suggested interventions in following specific areas

Policy Advocacy

- Monitoring of current food security programs and initiatives at government and non-governmental level
- Organizing forums for multi-stakeholders dialogue on food security
- Engaging parliamentarians and other policy and law making bodies on food security

Capacity building of CSOs

- Organizing national civil society dialogue on food security
- Documentation of best practices
- Designing and conducting training courses in food security for CSOs leaders
- International exchange programs on food security themes
- Support for grassroots groups in implementation of small farmers support projects

Research studies

- Food prices monitoring
- Impact of climate change on food security
- Gender dimensions of food security

At regional level AAHM should

- Promote regional cooperation through regional mechanisms such as SAARC, ASIAN
- Promote regional exchange programs on food security, land rights and support of small and landless farmers
- Create a regional fund for supporting AAHM activities at national and regional level
- Contact and dialogue with head of states and governments on food rights, regional food security and regional cooperation

- 1- Pakkisan (<http://www.pakissan.com/english/allabout/crop/rice.shtml>).
- 2- High Food Prices in Pakistan-Impact Assessment and way forward- July 2008-The UN Inter Agency Assessment Mission-FAO/UNDP/UNESCO/UNICEF/WFP/WHO)
- 3- Haq Musings October 17, 2011, <http://www.riazhaq.com/2011/10/world-food-day-pakistan-hunger-rising.html>
- 4- National Nutrition Survey Pakistan 2011
- 5- Stephen Gandel, What We Spend in a Month, Times Magazine, March 2011.
- 6- Planning Commission of Pakistan website
- 7- Lok Niti, ANGOC Journal 2012
- 8- SDPI-WFP report on food in Pakistan
- 9- IFPRI Discussion paper-rehabilitation of Agriculture and Promoting Food Security following the 2010 Pakistan floods

Annex 1: Chapter 8 on Agriculture and Food Security of Annual Plan 2012-2013, Planning Commission, Government of Pakistan (http://www.pc.gov.pk/annual%20plans/2012-13/chapter-8_agriculture_and_food_security.pdf)

Chapter 8

Direct and indirect contribution of Agriculture to overall growth and well being of the people is still significant. It contributes one-fifth to GDP and two-fifth to employment in the country. It provides food and fiber for personal consumption, inputs to various agri-based industries and output for export helps in foreign exchange earnings.

8.1 Strategy

Government of Pakistan has adopted a new growth strategy that is thematic based, relying largely upon policy shifts, institutional efficiencies and economic reforms. The Framework for Economic Growth (FEG) 2011 envisages growth in agriculture by enhanced agricultural productivity, improved sector governance, sustainability of the system, reduction of volatility and augmenting competitiveness in agricultural marketing and trade, and improvement of the investment climate in the sector. Within the scope provided by the FEG, role of agriculture sector is briefly described below.

- **Policy Reforms**

Subsidies, rent seeking approaches and governmental control over agricultural affairs generally restrict agriculture business to become competitive in line with the concept of free market. Policies such as seed, fertilizer, irrigation water pricing, electricity subsidies, food subsidies, release stocks, food procurement, support price, import tariffs and export controls would be reviewed and improved under the guidelines provided by the Framework for Economic Growth. Governmental role would shift from active player to a facilitator and regulator. This policy shift will help reduce the public burden and enhance economic activity by providing better opportunities to the private sector.

- **Sector Governance, Institutional Reforms and Innovations**

After necessary restructuring, the national agricultural research system would

be having better service structure, focused research, avoiding duplication and enhanced coordination. This will bring innovations in agriculture and ultimately the commercialization of technologies. Agricultural policy analysis capacity will be enhanced to have knowledge based decision making in economic planning and efficient resource allocation. There will be efficient public sector institutions resulting in better service delivery. All stakeholders will be involved in planning process by adopting demand driven and bottom up development approach. High social capital will be formed to promote participatory asset management.

- **Agriculture Productivity and Food Security**

The utilization of advanced technologies, improved input availability and use efficiency would result in high crop and animal productivity, increased production of high value horticulture, fisheries, and dairy products. This will result in accelerated growth rate, higher incomes, better employment opportunities, ensured food security and higher exportable surplus.

- **Agriculture Marketing, Trade and Competitiveness**

Agriculture market infrastructure will be improved and commodity exchange markets will be established. To make the agriculture business more

competitive, agriculture markets needs to be deregulated to promote private sector participation and to attract investment in developing supply chain, modern storage and warehousing facilities. Compliance of international standards and certification of agricultural commodities and products for export will be focused to access the high end markets. The interventions will yield to enhanced competitiveness, productivity and efficiency.

- **System Sustainability**

To keep the system sustainable for future generations, agriculture system resources such as soil, water and air needs to be prevented from degradations by developing and utilizing resource conservation technologies. The biotic and a-biotic stresses have to be managed effectively. This will not only improve the farm profitability but also increase resource availability and efficiency on sustainable basis.

Consequent upon the devolution of Ministry of Food & Agriculture and Ministry of Livestock and Dairy Development, their development projects were divided into three categories i.e. devolved to provinces, transferred to other federal ministries and closed down owing to near completion or completion. A new ministry namely Ministry of National Food Security and Research has been established assigning critical federal level functions of the devolved ministries (Box 8.1).

8.2 Review of 2011-12 and Outlook for 2012-13

Agriculture sector achieved a growth rate of 3.1 % against targeted 3.4 % for the year 2011-12 (Table 8.1). Major crops performance was satisfactory despite poor contribution by wheat. Good crop harvest of cotton, sugarcane, rice and maize however compensated wheat production loss. The performance of livestock was also recorded up to the mark. There was negative growth in minor crops that probably became the major reason for missing targets in agriculture. The fisheries and forestry sectors also could not able to achieve their set targets. Keeping in view the present pace of growth and development of the sector, a growth rate of 4.1% has been fixed for the year 2012-13.

Table 8.1: Growth Rate of Agriculture Sector
(%)

Item	2010-11	2011-12		2011-12	2012-13
	Actual	Target	Achievement	Share in GDP	Target
Major Crops	-0.2	3.0	3.2	6.7	4.0
Minor Crops	2.7	2.0	-1.3	2.1	4.5
Livestock	4.0	4.0	4.0	11.6	4.2
Fisheries	1.9	2.0	1.8	0.4	2.0
Forestry	-0.4	1.0	0.9	0.2	2.0
Agriculture	2.4	3.4	3.1	21.1	4.1

Source: Pakistan Bureau of Statistics and Planning Commission

Box 8.1 Establishment of National Food Security and Research Division

After devolution of Ministry of Food and Agriculture the government reviewed the situation and felt the need of ministry at federal level. So a new ministry by the name of National Food Security and Research was established in October 2011. Following functions have been given to this new Ministry.

- Economic coordination and planning in respect of food, economic planning and policy making in respect of agriculture.
- Imports and exports control on food grains and foodstuffs, inspection, grading, analysis of food grains and foodstuffs, maintenance of standards of quality for import and export and inspection, handling, storage and shipment of rice exports.
- Collection of statistics regarding production, consumption, prices, imports and exports of food grains.
- Coordination with aid and assistance agencies in respect of food sector.
- Pakistan Agricultural Research Council and other federal agriculture research organizations.
- Food and Agriculture Organization (FAO) of United Nations in respect of food.
- Plant protection, pesticide import and standardization, aerial spray, plant quarantine and locust control in its international aspect and maintenance of locusts warning organizations.
- Federal seed certification and registration.
- Standardization and import of fertilizer.
- Procurement of food grains, including sugar: from abroad; for federal requirement; for inter-provincial supplies; and for export and storage at ports.
- Grading of agricultural commodities, other than food grains, for exports.
- Agricultural Policy Institute and PASSCO.
- Preparation of basic plan for bulk allocation of food grains and foodstuffs.
- Price stabilization by fixing procurement and issue prices including keeping a watch over the price of food grains and foodstuffs imported from abroad or required for export and those required for inter-provincial supplies.
- Animal quarantine departments, stations and facilities located anywhere in Pakistan, National Veterinary Laboratory, Islamabad, Laboratory for Detection of Drugs Residues in Animal Products at Karachi.
- Veterinary drugs, vaccines and animal feed additives: Import and export; and Procurement from abroad for Federal requirements and for inter-provincial supplies.
- Livestock, poultry and livestock products: Import and export; and Laying down national grade.
- Pakistan Dairy Development Company, Livestock and Dairy Development Board, Fisheries Development Board.

Source: Cabinet Division, SRO 1088(I) 2011, December 09, 2011

The achievements of agriculture sector may be considered satisfactory in the situation of natural calamities causing high losses to agriculture production during outgoing year. Heavy downpours of 2011 monsoon inundated country's arable belt for a second consecutive year particularly in Sindh by damaging crops, livestock and infrastructure. The intensity of the damages was high in lower Sindh. More than half of total area under cultivation was damaged. According to estimates, the area under cotton, rice, sugarcane and chilies was damaged by 75, 26, 34 and 98 percent respectively. Besides this, heavy losses were also incurred to vegetables, livestock and orchards especially banana.

The contribution of agriculture towards GDP has been worked out at 21.1%. Within this, Crop sector contributes 41.7% and livestock 54.9%. The share of fisheries and forestry remains 1.8% and 1.1% respectively. Along with structural transformation of economy, the relative contribution within agriculture is tilting towards livestock because of its resilience against vagaries of the weather and being source of livelihood for large landless rural peasantry. Sector wise performance and future prospects of agriculture are discussed below.

8.3 Crops

8.3.1 Production of Crops

Major Crops

In Pakistan there are two major crop growing seasons, Kharif and Rabi. Rice, sugarcane, and cotton are important Kharif crops while wheat is the only major crop of the Rabi season. Maize is grown in both seasons.

Wheat

Wheat, being the staple diet of population, occupies a central position in agricultural policies of the government. Wheat accounts for two-third of national cereal production, and is the most important contributor to overall food security, providing 60 % of the carbohydrate and protein requirement to an average Pakistani. The production of wheat crop for the year 2011-12 is expected to be 23,517 thousand tonnes - 5.9% less than the target of 25,000 thousand tonnes and 6.7% less than previous year's production of 25,214 thousand tonnes. The wheat season started with 2.6% less area sown in 2011-12 compared to previous year because of late harvesting of cotton crop and low residual moisture as the early winter rains were inadequate at the start of Rabi season. Other reasons for low production like long low temperature in winter, protracted period of below normal rains, floods in Sindh, reduced availability of fertilizers and irrigation water also contributed.

Bad weather i.e. rains and strong winds causing lodging during the terminal days of wheat crop may further reduce the wheat output. At the present level of production about 27 million tonnes wheat would become available in the country with the carryover stocks of 3.4 million tonnes. The wheat outlook appears comfortable from the food security point of view as the domestic demand has been around 24.3 million tonnes. It provides sufficient exportable surplus stock to explore any international market including wheat deficit neighboring countries like Iran. Government has decided to purchase a quantity of 7.7 million tonnes from 2012 wheat crop with estimated finances of Rs 210 billion at support price of Rs 1050/40 kg. The prevailing conditions suggest fixing target of next season wheat production at 25.5 million tonnes.

Rice

After wheat, rice is an essential food commodity for masses in Pakistan. It is also a valuable source of foreign exchange earnings for the country. During 2011-12 the production of rice was recorded as 6,160 thousand tonnes compared to 4,823 thousand tonnes for the year 2010-11. This better performance may be attributed to 8.7% increase in area, favorable weather conditions, and better seed availability. Pakistan usually exports 2/3rd of its production. According to Rice Exporters Association of Pakistan, 3.025 million tonnes (0.7 million tonnes Basmati and 2.3

million tonnes coarse rice) has been exported from July 2011 to March 2012 against the target of 4.0 million tonnes in year 2011-12. It is expected that the target will be achieved with estimated foreign exchange earnings of US \$ 3 billion. For the coming year, a production target of 6.9 million tonnes has been fixed.

Sugarcane

Sugarcane crop occupies an important place in national economy for driving the large sugar industry. Besides food products it provides raw materials for chipboard, paper and ethanol. The production of sugarcane for the year 2011-12 was around 58,038 thousand tonnes, 0.8% high compared to the target of 57,580 thousand tonnes. It surpassed the last year production of 55,309 thousand tonnes by 4.9% mainly because of 5.2% increase in area sown. From this crop size, a production of about 4.67 million tonnes white sugar have been estimated by the Ministry of Industries. At start of 2011-12 market year, over one million tonnes sugar stock was available in the country. On the request of the PSMA, Government intervened in the market to settle the liquidity issues and purchased around 0.45 million tonnes of sugar through TCP to supply to the public sector Utility Stores at subsidized rates. Furthermore to improve sugar industry's cash flows and ward off a possible glut in the market, a quantity of 0.1 million tonnes was allowed to export. Keeping in view the domestic demand of about 4.5 million tonnes, production and stocks, a better supply is expected in 2012. It is generally reviewed from the outgoing crushing season that the Sugar Mills should be pursued to initiate timely sugarcane crushing and payment to the farmers, so as to promote more cultivation for the next season and achieve sugarcane production of 59 million tonnes.

Cotton

The economy of Pakistan depends heavily on cotton production. Despite damages to cotton crop by rains and floods in Sindh during 2011, the production of cotton crop surpassed the target for the year 2011-12 due to better crop from Punjab. The production of 13.6 million bales against the target of 12.8 million bales resulted in increase of 6.3 % against the target. The major reasons for good crop performance were corresponding increase in the area (5.2%) in the back drop of unprecedented high lint prices in 2010-11, favorable weather conditions in Punjab, comparatively less attack of cotton leaf curl virus and cotton mealy bug, avoidance of other pests by early sowing, increasing share of Bt-cotton, favorable weather and better management practices. Due to good harvest of cotton, issues of low pricing in local market emerged which were dispelled soon due to continuation of free market policy by the government. Bale weight issue remained in limelight as ginners bale weight was reported less (≥ 160 kg) than standard weight of the cotton bale (170 kg). This has been creating discrepancies in total production estimates in Pakistan in 2011-12. With the output of 13.6 million bales, it is expected that textile industry will not only meet its requirements but also export over a million bales of raw cotton in international market. Keeping in view the impact of high tech. Bt. Technology, a production of 14.5 million bales of cotton can be anticipated in year 2012-13 subject to escape from any natural calamity.

Maize

Maize, one of the important major crops, performed extraordinarily better with the production of 4,271 thousand tonnes against the target of 3,656 thousand tonnes and previous year's production of 3,707 thousand tonnes. The achievement may be

attributed to increase in area sown (11.2%), use of high quality hybrids and improved production technologies. Since this production was unusually high so target for 2012-13 has been increased too much and fixed at 4.3 million tonnes.

Minor Crops

The minor crops accounted for 17% towards agriculture while their contribution in overall GDP was around 4.3% in 2011-12. Contrary to the major crops, the performance of minor crops was less than the anticipated targets. The production of gram for the year 2011-12 was 281 thousand tonnes against the target of 676 thousand tonnes. The unsatisfactory performance of this important pulse crop was because of bad weather during the crop season. Similarly the production of onion was recorded at 1,640 thousand tonnes compared with 1,872 thousand tonnes target and 2010-11 achievement. The reduction in this crop was attributed to 14.9% decrease in area sown. Among oilseed crops, the production of sunflower remained 55.7 % less against the target of 559 thousand tonnes mainly because of 26% reduction in area sown. The poor performance of one of the major oilseed crop is expected to put more pressure on already higher edible oil imports. However, the output of potato that is 4,104 thousand tonnes has surpassed the target of 3,328 thousand tonnes and also 2010-11 production of 3,492 thousand tonnes. Crop performances along with targets for 2012-13 are given in Table 8.2.

Table 8.2: Crop Production Target and Achievement

(000 Tonnes)

Crop	2010-11 Actual	2011-12 Target	2011-12 Achievement	% change over		2012-13 Target
				2010-11 Actual	2011-12 Target	
Wheat	25,214	25,000	23,517	-6.7	-5.9	25,500
Rice	4,824	6,613	6,160	27.7	-6.8	6,900
Sugarcane	55,309	57,580	58,038	4.9	0.8	59,000
Cotton (mil bales)	11.5	12.8	13.6	18.6	6.2	14.5
Maize	3,707	3,656	4,271	15.2	16.8	4,300
Gram	496	676	291	-41.4	-57.0	650
Onion	1,940	1,872	1,640	-15.5	-12.4	2,000
Sunflower	404	559	247	-38.8	-55.7	650
Potato	3,492	3,328	4,104	17.5	23.3	4,150

Source: Pakistan Bureau of Statistics and Planning Commission.

8.3.2 Agricultural Inputs

Fertilizer

Soil fertility is continuously depleting due to mining of the essential plant nutrients from the soils under intensive cultivation and imbalanced use of fertilizers. During 2011-12, the off take of nitrogen (N) decreased by 0.1%, while the use of phosphate (P) and potash (K) declined by 19% and 31.3%, respectively compared with 2010-11. This trend had further widened the already existing gap in balanced nutrient application which has been recorded in terms of NP ratio at 5:1 against desirable 2:1. On overall basis, the fertilizer off take in 2011-12 was 4.1% less as compared to 2010-11 achievements and 7.5 % less against target. The decrease in use of P and K may be attributed to their high prices and less farm profitability due to low commodity prices in the local market. Detail is given in Table 8.3.

Table 8.3: Fertilizer Off-take, Target and Achievement

(000 Tonnes)

Nutrient	2010-11 Actual	2011-12 Target	2011-12 Achievement	% change over		2012-13 Target
				2010-11 Actual	2011-12 Target	
Nitrogen	3,133	3,211	3,129	-0.1	-2.6	3,409
Phosphate	767	830	621	-19.0	-25.2	739
Potash	32	39	22	-31.3	-43.6	26
Total	3,932	4,080	3,772	-4.1	-7.5	4,174
Urea	5760	6200	5900	2.4	-4.8	6200
DAP	1300	1500	1100	-15.4	-26.7	1500

Source: National Fertilizer Development Center, Planning Commission

Pakistan has sufficient capacity for urea production. However due to energy crisis, less supply of gas was available to the urea plants resulting in underutilization of plant capacity and less production. To fill the supply demand gap about 1.5 million tonnes of urea was imported during 2011-12. The price of urea in international market was almost two times that in Pakistan because of provision of heavy subsidy. Subsidy on imported urea was around Rs 51 billion in 2011-12. Almost an equal amount was calculated on subsidized gas supplies to fertilizer manufacturing plant in that period. Energy situation is still not satisfactory indicating need of continuous import of urea in 2012-13. It has been proposed to import 0.6 million tonnes urea for 2012-13 and half of this quantity has already been agreed upon. A target of 4,174 thousand nutrient tonnes off take is projected for year 2012-13 to achieve the crop production target.

Agricultural Credit

Total agriculture credit requirements for 2011-12 have been estimated at Rs 750 billion, which has worked out to be 60% of the total financial requirements for agriculture sector of the country. Farm sector would need Rs 642 billion (86%) while the requirements of non farm sector are Rs 108 billion (14%). Keeping in view the available capacity and past performance the Agricultural Credit Advisory Committee (ACAC) has fixed target of Rs 285 billion for the year 2011-12 as compared to Rs 270 billion, 5.6 % higher than the target of 2010-11 and 8.4 % higher from actual disbursement of Rs 263 billion. To streamline microfinance lending to agriculture activities and particularly to small and marginalized farmers, five major MFBs namely Khushhali, NRSP, Tameer, Pak Oman and First Microfinance have been included in existing system of allocation of indicative target and has been given an indicative target of Rs 12.2 billion for 2011-12.

Agricultural credit disbursement by banks surged by 17 % on year-to-year basis to Rs 197.4 billion in the first nine months (July-March) of the current fiscal year (2011-12). In absolute terms, disbursement of credit to the agriculture sector increased by over Rs 28.7 billion in July-March, 2012 as compared to total disbursement of Rs 168.7 billion in the same period of the last fiscal year. All financial institutions involved in the agriculture loaning are actively pursuing the SBP priority for agriculture sector supported by various SBP initiatives. Keeping in view the performance of nine months it appears that the fixed target will certainly be surpassed in year 2011-12.

Recent climate change and resulting floods in the region have spurred the need for banks to develop a comprehensive agricultural finance policy for settlement,

rescheduling and restructuring of loans of affected borrowers in addition to provision of fresh credits for rehabilitation and revival of economic activities in affected areas. Responding to it, the SBP has launched a Refinance Scheme at discounted rates of 8% coupled with Credit Guarantee Scheme for loss sharing of banks up to 40%.

Crop loan insurance scheme is already in place and doing well. Deliberations are going on to introduce National Agriculture Insurance Scheme in Pakistan. Presently the recommendations are under consideration by the government and other stakeholders. The Sindh Bank has introduced Benazir Zarei Card Scheme to enhance its outreach and bring convenience to farmers.

Improved Seed

Agriculture research system is the main source of advanced high yielding crop varieties in Pakistan. The system contributions are praiseworthy; however, the replenishment of genetic material did not appear to keep the pace at previous level because of variety of reasons in recent past. Improved seed requirement is increasing consistently. Despite presence of over 700 seed companies in business, the requirement of seed remained unmet over the years. Efforts had been made at various levels to attract foreign investment and technology in seed business but outcomes remained largely unfruitful because of non existence of direly needed legislations and regulatory framework. It is reported that spurious cotton seed is generally being distributed which have very low Bt. toxin. It is necessary to check this trend.

Cotton seed requirements for the country are around 40,000 tonnes. Public and private sector seed agencies distributed about 29,611 tonnes of cotton seed in 2011-12 in Punjab and Sindh, which was 74 % of the requirements. Major portion of it was Bt. Cotton (75%) mainly distributed by the private sector (96%). The high use of improved cotton seed may be attributed to high cotton prices during last season (2010-11). Rice seed distribution during 2011-12 remained around 28,895 tonnes against 22,257 tonnes of the previous year. About 17.9% of rice seed was imported hybrid. The cotton and rice seed distribution have been increasing, but still less than the requirement of 40,000 and 42,480 tonnes respectively. The distribution of maize seed during 2011-12 remained around 9,093 tonnes (81% imported hybrid) against the requirement of 31,914 tonnes. The distribution for the previous year was 9,391 tonnes. The distribution of pulses seed for 2011-12 was around 1,285 tonnes against the requirement of 50,955 tonnes. The distribution for the previous year was only 1,251 tonnes. Low distribution of pulses seed is one of the impediments of low pulses productivity and reliability on imports. The distribution of vegetable seed during 2011-12 remained around 6,775 tonnes against the requirements of 5,070. However, the distribution for the previous year was 3,981 tonnes. A large part of the vegetable seed was imported (88.7%) in 2011-12 for commercial and tunnel farming. The fodder seed supply was less in 2011-12 compared to 2010-11 and over 90% of it was imported. During the year 2011-12, 30 varieties of different crops were approved including Wheat 5, Cotton 17, Gram, Mungbean Canola and Sesamum 1 each, Oat 2 and Olive also 2.

It is evident from the Table 8.4 that there is a big gap between requirements and distribution of seed for all crops in Pakistan. Public sector is performing well in major crop seed business. It is however the insufficiency of the seed business companies to meet the demand. To improve the situation, the private sector has to come up for bridging the gap between supply and demand.

Table 8.4: Improved Seed Requirement and Distribution

(000 Tonnes)

Crop	2010-11		2011-12		2012-13
	Requirement	Distribution	Requirement	Distribution	Requirement
Wheat	1085.4	316.8	1085.4	295.7	1085.4
Cotton	40.0	12.5	40.0	29.6	40.0
Paddy	38.9	22.2	42.5	28.9	42.5
Maize	31.2	9.4	31.9	9.0	31.9
Pulses	47.1	1.3	50.9	1.3	50.9
Oilseeds	3.2	2.3	4.0	0.72	4.0
Vegetables	5.1	3.9	5.1	6.8	5.0
Fodders	40.1	11.8	40.1	6.3	40.1
Potato	372.7	7.8	378.0	4.4	378.0

Source: FSC&RD, Ministry of National Food Security and Research.

Irrigation Water

Being the lifeline of all agricultural activities, water is very crucial to achieve the agricultural growth targets. Despite strenuous efforts the water availability is either stagnant or dwindling. Although several water storage projects are under way but owing to their gestation period, no significant addition has been made in water availability in the country which is widening supply demand gap. During 2011-12 an amount of 137.1 MAF became available by the contributions of both water sources i.e. surface water 86.9 MAF and ground water 50.2 MAF against estimated availability of 140.5 MAF. The main reason of the low availability was decrease in contribution by ground water because of high diesel and electricity prices. Below normal temperature in April and May 2012 slowed down the glacier melt process thus further squeezing the surface water supply for Kharif season crops of 2012. Keeping in view the developments in the water sector, around 142 MAF water would become available in 2012-13 for agriculture use.

The agriculture sector is a major consumer of energy in Pakistan, particularly for the extensive tube well network across the country. About one fourth of the existing tube wells use electricity for operation, whereas remaining three fourth are diesel fuel operated. In both categories it is becoming increasingly expensive to keep them functional as most of the pumps operate at only thirty percent efficiency. Frequent increases in electric power tariff and price of imported diesel are augmenting the cost of crop production. There is a need to invest in alternative energy sources and high efficiency irrigation system to sustain the irrigated agriculture of the country.

Plant Protection

Indiscriminate use of pesticides resulted in problems like the disturbance of the agro-ecosystem, development of resistance by the pests, emergence of new pest species, human and animal health issues, as well as environmental degradation and contamination of water supplies. In Pakistan, cotton is a main crop which is used to hit by various types of pests. To manage these pests 14,613 tonnes of different pesticides were made available in the country during 2011-12, out of which 5,010 tonnes were imported while 9,603 tonnes produced locally. Against the availability, a quantity of 12,420 tonnes was used during 2011-12 showing a major cut in use as compared to its highest use of 129,598 tonnes during 2004 and the following years. In year 2011-12 the size of cotton output, despite heavy losses in Sindh province had shown that pest

flare up remained under control. The field information suggested that due to increase in Bt. cotton cultivation, the issue of boll worms (American, Pink and Spotted) has come under control shifting issue to sucking pests like whitefly, jassids, thrips, mealy bug and mites. In that situation, the use of pesticides effective against sucking pest has increased compared to boll worms. The cotton leaf curl virus remained a concurrent issue and shall continue to be the most pursued topic for research in various cotton research institutions in years to come.

Agricultural Mechanization

Tractor production in the country has been suffering badly because of the energy constraints. Around 20,621 tractor units have been produced during July-Feb in 2011-12 against 70,855 during 2010-11. Generally Pakistan agriculture mechanization is confined to tractor as majority of tractor owning farmers have only cultivator and don't possess modern farm implements like Disc Plough, Rootavator and Laser Land Leveler. This is mainly because of affordability and information issue. There are quality concerns with regard to locally manufactured machinery while high price for imported ones has restricted its use. Concerted efforts would be required, from both public as well private sector, to popularize the agricultural machinery in Pakistan.

8.4 Livestock

The contribution of livestock including poultry in total GDP at 11.6% and in agriculture GDP 55% is quite significant. When farmers lose their expected income from crops due to floods and other epidemics, livestock proves itself a sustainable source of income to the poor masses. For the past many years livestock has emerged a largest single contributor to the agriculture. The need of the hour is to pay more attention to this sector, especially by facilitating the farmers with new innovations to make it competitive. A growth rate of 4.0% was achieved in 2011-12 which was equal to the target.

The devolution of Ministry of Livestock and Dairy Development and subsequent transferring of its functions to other federal ministries like Ministry of Commerce and Ports and Shipping disrupted the momentum gained in livestock sector during last many years. Before the devolution there were 15 livestock related projects in PSDP 2010. Out of them five were transferred to other federal ministries and one to Balochistan while remaining projects were closed. Now, livestock sector has been placed under Ministry of National Food Security and Research. However, gaining the same pace will take time and issues of livestock sector remained pending such as the activities of Pakistan Dairy Development Company (PDDC). Physical performance of the livestock, dairy, poultry and fisheries sub-sectors during 2011-12 and targets for 2012-13 are given in Table 8.5. The growth target for the sector has been fixed at 4.2%.

Livestock and Dairy

For the year 2011-12, the performance of livestock sector remained somehow satisfactory. The production of meat at 3,232 thousand tonnes exceeded its target of 3,056 thousand tonnes. Production of all beef, mutton and poultry meat exceeded their targets. The encouraging and remarkable performance consoled farming community struck by floods and failures of some other production sectors. The milk production at 38,690 thousand tonnes was below its target of 45,883 thousand tonnes. The need of research to tackle these problems is growing and both provincial and federal research

institutions need to introduce new techniques to satisfy the demand. On the other hand, Pakistan is one of the five largest milk producing countries of the world but faces post production losses of milk at 15% causing annual loss of around Rs 169 billion. The lack of infrastructure such as cooling facilities at farm or collection points as well as transportation of milk is the prime cause, which is being addressed through various development projects. Pakistan Dairy Development Company (PDDC) has made significant contribution for improvement of the dairy sector. Provinces need to take up the responsibility for improving the dairy sector and devise sustainable strategy for cool chain development for reducing the milk losses.

Poultry

For the past many years, the poultry meat, being cheaper as compared to beef and mutton, has delivered great nutritional support to consumers. About 834 thousand tonnes poultry production was achieved against the target of 758 thousand tonnes. It is further expected that the sector would also reach the next target of 937 thousand tonnes in 2012-13 easily. In the local market, the increased poultry production had released the pressure on the demand for beef and mutton. Egg production, an important source of protein, surpassed its target by 6.5 % in 2011-12. The target of egg production has been fixed at 13,813 million for the year 2012-13.

8.5 Fisheries

Fisheries sector grew at 1.8% during 2011-12, 24.2% less than the target of 956 thousand tonnes (Table 8.5). Inland fish production was dismal compared to marine production. Pakistan is one of the leading exporters of fish and its products and fish processing plants are gradually increasing to contributor to employment generation. However, the sector is challenged by acute shortage of infrastructure. Since resources and responsibilities have been shifted to provinces, it is therefore hoped that the socio-economic condition of fishermen community would improve, for which technical and logistic support to improve production as well as processing is necessary. Despite ban from the EU on imports from Pakistan, the exporters have explored other markets of the World. It is important to make efforts to meet the safety requirement of high end markets and take steps to get the ban lifted. A growth target of 2.0% has been fixed for fisheries sector during 2012-13.

Table 8.5: Physical Performance and Targets Livestock, Poultry and Fisheries

(000 Tonnes)

Item	2010-11 Actual	2011-12 Target	2011-12 Achievement	% change over		2012-13 Target
				2010-11 Actual	2011-12 Target	
Meat	2,939	3,056	3,232	10.0	5.76	3,379
Beef	1,625	1,690	1,769	8.9	4.7	1,829
Mutton	585	608	629	7.5	3.4	643
Poultry	729	758	834	14.4	10.0	937
Milk	44,118	45,883	38,690	-12.3	-15.7	39,945
Egg (Million Nos.)	11,834	12,308	13,114	10.8	6.5	13,813
Fish	937	956	725	-22.6	-24.2	729
Inland	264	269	260	-1.5	-3.3	262
Marine	673	687	465	-30.9	-32.3	467

Source: Ministry of National Food Security and Research and Marine Fisheries Department.

8.6 Forestry

Despite the importance of forests in the life of common people, its contribution in the national economy is negligible (0.2%). Pakistan's 5.2% of total land area is under forest cover. During the past two decades, there has been a significant deforestation in natural forests of Gilgit-Baltistan and Khyber Pakhtunkhwa. The riverine forests in Punjab and Sindh have also shown declining trend. The mangroves forests have also been degraded due to deforestation and non availability of fresh water in the sea. However, tree cover on farmlands and private wasteland has significantly increased during the period. Since Forestry is provincial subject, the federal government has been supporting this sector through national policies, capacity building and trainings, implementation of international agreements on forests and sponsoring of forestry sector development programmes. After 18th Amendment, these functions of federal government have been transferred to Ministry of Climate Change. A growth rate of 1 % has been observed in 2011-12 while 2% is a growth target for 2012-13.

8.7 Development Initiatives

8.7.1 Federal Government

In Public Sector Development Programme 2012-13 an amount of Rs 495 million has been provided for ongoing and new projects of the Ministry of National Food Security and Research while Rs 250 million has also been allocated for agriculture related projects being handled by Commerce and

Box 8.2 National Zero Hunger Action Program

The Ministry of National Food Security and Research in collaboration with World Food Programme is planning to start a Zero Hunger Programme aiming to attain food security and reduce malnutrition in Pakistan. The programme implies coordinated approach with several ministries to achieve its targets and will reach to 12 million food insecure people in one year (20% of total affected population) with a cost of \$ 1.04 billion, of which 200 million is sanctioned by government of Pakistan while rest will be contributed by donors and other sources of funding. A total of 61 million people will be reached with total cost of 16 billion dollars in five years time. For the programme a National Council for Food Security comprising of representatives of federal and provincial governments, private sector and civil society will be established. A consultative workshop has already been held in March 2012 to produce a set of guidelines and frameworks for National Zero Hunger Action Programme and the operational strategy

Source: Ministry of National Food Security and Research

Ports & Shipping Divisions. It may also be pointed out that Higher Education Commission, Industries Division, Science & Technological Research Division and Water & Power Division have various agriculture related projects. Discussion on these projects is may be seen in relevant chapters. Progress of some of the projects of agriculture sector included in PSDP 2012-13 under Ministries of National Food Security & Research, Commerce and Ports & Shipping are given below:

- **National Zero Hunger Action Program**

Keeping in view the food security issues, the Ministry of National Food Security has launched "National Zero Hunger Action Program". Detail of the program is given in Box 8.2.

- **Research for Agriculture Development Programme**
 The project is being implemented since 2007-08 by PARC and aims at developing demand driven research solutions and innovations based on various themes in different sectors like Crop Sciences, Natural Resources, Animal Sciences and Social Sciences. Out of total 91 development projects approved for financing under this project, 45 have been completed while the remaining 46 are under implementation. The capacity of 510 scientists has been built through local and foreign trainings. More than 10,000 local & exotic germ plasm lines were acquired, evaluated and distributed as well as research laboratories at NARC being strengthened through procurements of latest scientific equipments. Due to financial constraints the estimated expenditure up till 2011-12 was around Rs 1070 million which is 36% of the total cost (Rs 2.97 billion) of the project. The allocation for 2012-13 is Rs 170 million.
- **National Institute of Genomic and Advanced Bio-Technology**
 The purpose of establishing this Institute at NARC campus is to support research and development activities by providing available techniques in genomics and biotechnology to the scientists. Constructions of office building and laboratories are almost complete. DNA finger printing work on rice, grapes and groundnut have been established which will help in developing molecular passport of our varieties. Molecular screening and characterization of papaya infecting viruses have been initiated. Facilities of genetic engineering of crops have been established. Against the project cost of Rs 482.7 million an amount of Rs 174 million has been utilized starting from 2007-08. The allocation for 2012-13 is Rs 150 million.
- **Pak-China Cooperation for Agriculture Research and Development**
 The project was initiated on the visit of President of Pakistan to China in February 2009 wherein PARC signed a MoU with various Chinese companies for agriculture research development. The project is working for productivity enhancement of crops which are important for food security, export competitiveness, import substitution, resource conservation technologies and introduction of non-traditional commercial crops of economic importance. Under the project, the germ plasm of various crops such as wheat, maize, fodder, rice and banana has been obtained from China and being used and planted at different sites for testing. The project cost is Rs 255.7 million. The financial utilization till June 2012 was Rs 69 million. The allocation for 2012-13 is Rs 25 million.
- **Indigenization of Hybrid Seed Production for Enhanced Crop Production** To address the need of indigenous hybrid technology, the project is designed to develop hybrid varieties of major crops like Cotton, Wheat, Rice and Maize. This project will help in crop intensification, diversification, and sustainable use of natural resources and utilization of indigenous knowledge through participatory research. The activities of the project did not take off properly because of the devolution process. The funds utilization of the project was Rs 41 million. The allocation for 2012-13 is Rs 20 million.
- **National Bio Saline Agriculture Programme**
 During devolution process field activities of the project were given to provinces while project Coordination Unit was retained at federal level to support the research work and Bio saline agriculture in ICT, AJK, FATA and Gilgit-Baltistan. The allocation for 2012-13 is Rs 30 million.

- **Special Programme for Strengthening SPS Facilities and Quality Inspection Services in Compliance with WTO-Establishment of Integrated National Animal and Plant Health Inspection Services (NAPHIS)**

This project aims at developing a system by strengthening existing institutional capacities, establishing effective coordination mechanism and facilitating trade by ensuring safe and quality food to consumers through an effective animal

Box 8.3: Safe Food for Everyone

Food safety has become first line of concern due to increased awareness on food borne illnesses and nutrition. Food scientists and regulatory agencies are striving hard to implement measures to provide wholesome and safe food. Two significant measures under WTO agreements relate to animal & plant health and food safety measures under Sanitary & Phytosanitary (SPS) measures and Technical Barrier to Trade (TBT). SPS measures require steps for safe food and quality trade in agricultural produce/products.

Pakistan is a signatory to the WTO agreements on SPS and TBT measure. With the introduction of WTO regime, the trading partners have enforced stringent quality requirements. In order to meet these standards, it is imperative that an integrated and efficient system of Food Safety, Animal and Plant Health Inspection Service is put in place to meet the emerging challenges especially after liberalization of trade. Various plant and health inspection government departments have some system of inspection and quality check but it is product based and departmentalized. Some guidelines laid down by international agencies are being followed by Pakistan like International Plant Protection Convention (IPPC) in case of plant quarantine and the World Animal Health Organization (OIE) in case of animal products but not as per international requirements. The national grades and standards of quality of 42 items of agricultural and livestock commodities have been based upon Codex Alimentarius Commission guidelines.

Cognizant of the need to meet the requirement of international markets and to fully exploit the potential to increase the exports of quality produce, the Government has initiated a project costing Rs 415 million namely; “Special Programme for Strengthening SPS Facilities and Quality Inspection Services in Compliance with WTO –Establishment of National Animal and Plant Health Inspection Service (NAPHIS)”. An integrated and coherent SPS management system will be put in place through establishment of a Federal Food Safety, Animal and Plant Health Regulatory Authority which would help increase our market access to international markets through export of quality agriculture produce/products. At the same time, imports of animal, plant, fish and fishery products would be subject to quality check thus eliminating chances of un-safe food hazards and inferior quality produce, entering into the country. Establishment of a Federal Food Safety Regulatory Authority would be a land mark achievement as it would help ensure “Safe Food for Everyone”.

Source: Ministry of National Food Security and Research

and plant health inspection services, including quality certification of agro based exports and imports. Under this project two laboratories each of Grain Quality Testing (Karachi & Islamabad) and Marine Fisheries Department, Karachi have acquired international accreditation status while the National Veterinary Laboratory has applied for accreditation with Pakistan National Accreditation Council. Other labs are also being pursued to expedite accreditation process. A Bill has been drafted for establishment of “Food

Safety, Animal and Plant Health Regulatory Authority” in consultation with concerned Federal Ministries / Divisions and Provincial Departments and the help of International SPS experts. After meeting codal formalities the bill will be submitted to the Parliament for enactment. Over Rs 300 million has been utilized against the cost of the project (Rs 415 million). The allocation for 2012-13 is Rs 70 million. Details are in Box 8.3

- **Monitoring of Crops through Satellite Technology**

Lack of quality data and the time lag in its provision through the crop reporting system in vogue necessitated use of alternate source of data. For this purpose the defunct MINFA sponsored this project at a cost of Rs111 million to promote the use of satellite remote sensing technology for rapid assessment and timely transmission of quality crops statistics. The project was implemented by SUPARCO in close cooperation with FAO. Phase-II of the project has been launched in 2009 taking the provinces on board and developing a mechanism for information sharing. The project is now providing timely information on agriculture data including inundation of flood in 2010 and 2011. Around Rs 40 million has been utilized against the cost of Rs 165.7 million. The allocation for 2012-13 is Rs 25 million.

- **Up-gradation and Establishment of Animal Quarantine Stations in Pakistan**

To prevent introduction and spread of exotic diseases, quarantine facilities are necessary to meet the requirements of importing countries as well as domestic needs. Exporters and importers of animals and animal products need certification facilities to meet international requirements. Keeping in view such needs, a project “Up-gradation and Establishment of Animal Quarantine Stations in Pakistan” has been launched. Under this project, six animal quarantine stations, at Lahore, Islamabad, Peshawar, Multan, Sialkot and Khunjrab are being up-graded and a new one is being setup at Khokhrapar. The cost of the project is Rs 336.1 million. The project is in progress under administrative control of Ministry of Commerce and Rs 100 million has been allocated for it for the year 2012-13.

- **Grain Storage Project- Construction of Steel Silos Capacity of 0.65 Million Tonnes**

Public sector storage capacity is limited to 35 million tonnes. The project has been conceptualized within the assigned role of federal government in implementation of its food grain policy providing additional grain storage facilities for wheat and other commodities and improving operational efficiency of PASSCO. The project will construct silos at 22 sites all over the country with a total storage capacity of 0.65 million ton. The main funding source is IDB. The project will help in storing food grains in clean and safe silos for longer period with minimal losses. The project is in the process of approval.

- **Agriculture Research Institute, Muzafarabad)**

This project was developed on announcement of the Prime Minister of Pakistan for establishment of a full fledged “Agriculture Research Institute” in AJK to cater the specific research need of the state. The project will help in increasing productivity and quality of priority crops, fruits, vegetables, cereals, forage, herbs & pulses to improve farm income from small land holdings. It will also help in introduction, adoption and generation of improved agricultural technologies for different Agro-Ecological Zone of the State of AJK on

integrated land use basis. The project is in process of approval by the CDWP. The allocation for 2012-13 is Rs 5 million.

- **Stock Assessment Survey Programme in EEZ of Pakistan**
 Project aims at conducting resource survey in the coastal and offshore water of Pakistan, to strengthen the marine fisheries department capacity, to conduct resource survey, stock assessment on regular basis and to develop management strategies for the sustainable exploitation and utilization of marine fish resources. The cost of the project is Rs 496 million. It will be implemented through chartering of Fisheries Research Vessels and Capacity Building of Marine Fisheries Department. The project has been delayed from its scheduled time mainly because of low releases and delay in chartering of vessel. The expenditure as on June 2012 was around Rs 300 million. The project is under Ministry of Ports and Shipping and the PSDP allocation for 2012-13 is Rs 125 million.
- **Pakistan Dairy Development Company**
 The Company is handling a project namely the “White Revolution Doodh Darya”. During devolution it was decided to wind up the Company.
- **National Programme for Improvement of Water Courses Project**
 The programme was implemented at national level with objectives of; organizing 86,003 Water Users’ Association and their registration under On Farm Water Management and Water Users’ Association Ordinance; improving 86,003 watercourses involving complete earthen renovation; partial lining of critical reaches (15 % to 30 % of total length); installation of water control structures and imparting training to freshly-recruited technical staff in surveying and designing of watercourses. The project has been devolved to provinces in June 2011. However in an evaluation of the programme it was observed that approximately 54,695 watercourses have been improved in the country and 5,962 water storage tanks established in Balochistan. As a result of implementation of the project average yield of wheat increased by 9.2, 5.7, 16.9, 27.0 and 59.4 percent while in case of rice the increase in yield was recorded as 7.8, 6.2, 3.4, 44.1 and 119.1 percent in Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan and AJK, respectively. The project was devolved and now provincial governments are responsible to carry forward its activities.
- **Agriculture Linkage Programme of PARC**
 The Pakistan Agricultural Research Council (PARC) was given an Endowment Fund of Rs 1300 million which has been invested in profitable schemes. The funds generated through income from such investment are used to finance research activities/programmes under ALP at national level on competitive basis. Under this scheme, 77 projects with a cost of Rs 90.5 million, 76 projects with a cost of Rs 73.2 million and 55 projects with a cost of Rs 161.8 million were implemented at different institutions of the country during 2008-09, 2009-10 and 2010-11 respectively. Allocation for 2011-12 was Rs 107.9 million. Rs 100-120 million has been earmarked for 2012-13. The scheme is functioning very well as it provided operational funds for research on important emerging issues in agriculture sector and most of the research institutions of the country have benefited from this facility.

- **Agriculture Development in ICT**

Interior Division is implementing six projects for development of agriculture in rural areas of ICT. An allocation of Rs.69.3 million has been made to these projects for 2012-13. New improved farming practices are being introduced among farmers for increasing productivity and hence income of the farmers. The area is well suitable for olive cultivation. Olive nursery plants are being distributed among the farmers interested in olive cultivation. A broad fish and fish seed rearing farm has been established at Fish Seed Hatchery, Islamabad. Provision of veterinary services and breed improvement of the livestock of the area is also taken care off in the rural areas of ICT through development projects.

- **Restoration of projects**

A high powered committee under the chairmanship of Federal Minister for Religious Affairs was constituted to resolve post devolution issues. The committee agreed to restore 14 devolved or closed projects. These projects are passing through the process of restoration by the competent forum.

8.7.2 Provincial Governments

Provincial governments are adequately paying attention on the development of agriculture sector in their respective jurisdictions. The investment trend of the provincial governments along with federal areas (FATA, GB, and AJK) is given below. Significant interventions for the year 2012-13 have also been mentioned below under their respective heads.

- **Punjab**

Medium Term Development Framework 2011-14 of the Government of the Punjab suggested an allocation of Rs 4.2 billion against various schemes of agriculture in the year 2012-13. Similarly Rs 498 million in Forestry, Rs 390 million in Fisheries, Rs 2.6 billion in Livestock and Rs 245 million in Food have been earmarked to develop respective sectors during year 2012-13.

The development portfolio of Punjab includes local and foreign funded projects. Because of devolution of on-farm water management schemes of federal government like, improvement of water courses and high efficiency irrigation system, the Punjab government has planned to start a project "Punjab Irrigated Agriculture Productivity Improvement Programme" with the financial assistance of World Bank. The project is in the process of approval. The aim of the project is to improve water productivity. The World Bank has agreed to provide loan of \$ 250 million (59%) while \$ 173 million (41%) will be shared by the local beneficiaries. Total project cost is Rs 36 billion and duration is five years.

Other than regular development activities of the province, the Punjab is supporting agriculture research through Punjab Agricultural Research Board (PARB). Brief description is presented in Box 8.3.

Box 8.4 Punjab Agricultural Research Board (PARB)

PARB is established as an autonomous body to foster an integrated approach for research planning and efficient allocation of resource so that the agriculture innovation system of the province can generate appropriate solutions of the issues faced by various stakeholders in the food and fiber chain. The vision of the PARB is to support scientific innovations for the prosperity of Agricultural Stakeholders in the province. The system of funding is competitive on priority areas in line with the agreed strategies. For the year 2012-13, Rs 400 million has been planned to be allocated against 80 agriculture research schemes submitted by different research institutions of the province.

- **Sindh**

During 2011-12 Sindh Government spent Rs. 2.5 billion on 25 projects of Agriculture sector. The utilization in Forestry, Wildlife and relevant Costal Development Authority's developmental activities was Rs 1.45 billion. Likewise Rs 0.8 million were utilized to fund the livestock and fisheries projects. For the year 2012-13 the Government of Sindh has planned to allocate Rs 4.4 billion for 35 schemes of Agriculture Research, Plant Protection, Agricultural Marketing and Water Management in the province. Similarly investment of Rs 385 million for 3 schemes in Food, Rs 2.3 billion for 16 schemes in Livestock, Rs 1.26 billion against 10 schemes in Fisheries, Rs 544 million for 16 schemes in Forestry and Rs 154 million for 9 schemes in Wildlife has been planned for development of the respective sub sectors during 2012-13.

The Agriculture Department of the Government of Sindh is going to undertake a feasibility study to establish agriculture demonstration zones on Chinese pattern with the technical and financial assistance of China. The demonstration zones will comprise of various parks, such as sightseeing, technology, innovation, international collaboration, agriculture technology and business with a service center. Sindh Government under "Flourishing Sindh Prosperous Farmers" programme is providing 6000 tractors through lucky draw with subsidy ranging between 0.2 million and 0.3 million on each tractor. Out of the total, 3000 tractors are for farmers owning up to 25 acres of land while the rest 3000 are for farmers owning more than 25 acres agricultural land.

- **Khyber Pakhtunkhwa**

Government of Khyber Pakhtunkhwa has increased its project portfolio from 49 to 80 in year 2012-13 in various sub sectors of agriculture such as Extension, Research, Engineering, Water Management, Livestock and Dairy, Veterinary Research, Soil Conservation and Fisheries. The financial allocation is Rs 3.9 billion against Rs 1.5 billion provided during last year. Out of the allocated amount, about 34% will be utilized for the new schemes.

- **Balochistan**

The annual development programme of the Balochistan Government for the year 2011-12 contained 53 projects for agriculture sector having allocations of Rs 2.1 billion. The development activities of the province will be carried out vigorously to develop the agriculture sector in the backdrop of more share available in the divisible pool in 2012-13. Besides locally funded, there are various projects funded by foreign institutions in Balochistan. An important activity is a "Gwader-Lasbella Livelihood Support Project" mainly financed by

IFAD (85%) as soft loan is under consideration with the aim to improve income and livelihood of small fishermen household. It has three components i.e. community development, fisheries development and rural infrastructures development on which Rs 2.9 billion will be spent in five years time.

- **FATA**
FATA have throw-forward of Rs 210 million beyond 2011-12 for Agriculture Extension Schemes; Rs 196 million for Livestock and Dairy Development; Rs 167 million for Sericulture and Rs 116 million for Fisheries sector. These development activities will be continued in FATA beside federal government activities.
- **AJK**
The Government of AJ&K has allocated Rs 685 million for 12 ongoing, while Rs 776 million for new schemes of crops and horticulture for the 2012-13. For Forestry, Watershed, Wildlife and Fisheries the scheme number has been increased from 20 to 29 with allocation of Rs 287 million for the year 2012-13. Total allocations for the sector have been worked out to be Rs 1.75 billion. The main emphasis would be on tree plantation, demonstrations for fruits and vegetables, supply of inputs such as fertilizer and seed to poor farmers, increase in area under irrigation, irrigation channels lining and activities on dairy, sheep, goat and poultry.
- **Gilgit-Baltistan**
There were 15 schemes costing Rs 613 million in the agriculture sector being funded from the budget of the Government of Gilgit-Baltistan in 2011-12. For the year 2012-13, three new schemes have been planned with cost of Rs 1.2 billion. Government of Japan has shown interest for the development of agriculture sector of Gilgit-Baltistan. Keeping in view the potential of the area a project "Promotion of Value Added Fruit Products in Gilgit-Baltistan" has been approved to introduce and promote improved technologies in production, processing and marketing of apple and apricot. Project duration is four years starting from 2012. Cost of the project is Rs 466 million of which 94% will be provided by the JICA as grant.

8.7.3 Development Partners

Several development partners are working in Pakistan in Agriculture sector like World Bank, Asian Development Bank, Islamic Development Bank, ICARDA, CIMMYT, FAO, IFAD, DFID, ACIAR, CIDA, Italian Debt SWAP, WWF, UNIDO, IUCN, JICA, USAID, WFP, IFPRI, ICIMOD and EU. Likewise many community based organizations like, RSPNs and AKRSP are also working for betterment of agriculture in Pakistan. Most of these are working in collaboration with governmental agencies, either federal or provincial, while some are doing work independently or with nongovernmental organizations. Few of the initiatives are given below.

- **Pakistan Strategy Support Programme**
The International Food Policy Research Institute has launched a Pakistan Strategy Support Programme to support the Framework for Economic Growth with a particular focus on agriculture and the rural economy. The PSSP is funded by the USAID and guided by a National Advisory Committee. The PSSP funded research will help identify key policy decisions to support the new growth strategy, assess empirically the impacts of those decisions, evaluate

constraints to policy reforms and examine alternative policy recommendations to enhance impact. The funding for agriculture policy project is US\$ 5.8 million up till 2015.

- **Agribusiness Project**

The USAID signed a cooperative agreement with Agribusiness Support Fund (ASF) for implementation of a five year's US\$ 90 million Agribusiness Project. The overall goal of the Agribusiness Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. It aims to improve farm and enterprise productivity through technical assistance programmes targeting 62,500 farmers and 2,500 agribusiness stakeholders. It also aims to provide leverage with US\$ 320 million by the private sector through the provision of cost sharing support to 45,000 Farmer Enterprise Group members, 100 associations and cooperatives, 250 individual and corporate farmers, 40 R&D and extension providers, 140 SMEs and 8 lead companies. It will create 1.3 million jobs and substantially raise farm incomes thereby contributing towards poverty alleviation and enhanced food security.

- **Tube Well Efficiency Improvement Programme**

The project is focused on improving pumping efficiency of tube wells in Pakistan. Funding for this activity is US\$ 13.6 million. For replacement of water pumps with more efficient models 40 % electricity consumption could be reduced. This programme is planning to co-fund the replacement of 11,000 water pumps by 2013, saving an estimated 45 megawatts of electricity and reducing farmer's electricity bills by Rs 650 million annually.

- **Progressive Control of Foot and Mouth Disease in Pakistan**

The foot and mouth disease (FMD) not only results in production losses and mortality particularly in young animals but also restricts international trade. The project is funded by the United States Department of Agriculture and executed by the Food & Agriculture Organization of the United Nations in collaboration with the Government of Pakistan in three year time (2011-13). The project is expected to provide a framework within which progressive control of FMD in Pakistan can be effectively implemented. The improvement of on-farm livestock health care system will include: improved capacity to diagnose FMD, improved FMD surveillance and response to the outbreaks, and development of effective vaccination strategy for disease control.

- **Flood Recovery Agriculture Programmes**

To mitigate the damages caused by the flash floods of 2010, USAID started recovery programmes in Khyber Pakhtunkhwa, Punjab and Sindh with an outlay of \$ 62 million. Major interventions were: supply of good quality seed, fertilizers and pesticides, survival of livestock through the provision of feed, fodder, and medicines and help to rehabilitate damaged irrigation watercourses through cash-for-work programmes. In an exclusive activity for seven northern districts of Sindh, Sunflower cultivation was supported by providing seed and necessary training to small farmers.

- **Dairy Programme**
 The USAID funded project aims to increase the productivity of 12,000 small dairy farmers by 15-20 % through training in best practices in dairy farming sector of Punjab province. The project cost is \$ 2.5 million and duration is 2011-14. The project focuses on livestock management, including artificial insemination. Trainees receive basic equipment and are introduced to resources that help improve milk yields and promote links with suppliers and higher value markets and service providers (including financial services). The project has trained AI technicians and TOT including men and women who are working in the field to spread the services.
- **Grain Storage Project**
 This project provides world-class technical expertise to support the establishment of public-private partnerships for the management, handling, and storage of strategic grain reserves by the Governments of Punjab and Sindh under USAID programme. Assistance offered by the project includes the drafting of technical and legal feasibility studies, which are expected to result in bidding and evaluation procedures for realizing an expected \$ 200 million in private-sector investment in the sector. Under the project a due diligence report has been completed and accepted by the both governments. The activity cost was \$ 2.5 million.
- **Balochistan Agriculture Project**
 The project works with community organizations and local governments in Balochistan to increase incomes through improved crop and livestock productivity and more effective water management. The project cost is \$ 10.4 million. More than 550 communities in five districts within 100 miles of the Afghan border in Balochistan are targeted. Through the project nearly 555 community organizations have been supported and 11,697 are direct beneficiaries reached. The income of beneficiaries is increased by more than 40%. Household incomes from better livestock productivity increased to 54% and from irrigated agriculture up to about 75%.
- **Promotion of Olive Cultivation for Economic Development and Poverty Alleviation**
 The project is funded through Italian Debt swap with a total cost of Rs 382 million. It is planned to be implemented in the provinces of Balochistan, Khyber Pakhtunkhwa, Potohar region of Punjab and FATA. The project aims to expand olive cultivation in selected areas as identified through the studies conducted by an Italian Institution IAO (*Istituto Agronomica per l'Oltremare*), set-up new olive processing facilities, human resource development and promotion of Olive cultivation and Olive oil use. It is expected that the Italian experts shall introduce improved germ plasm and new techniques for olive cultivation and processing. The activities are planned to be implemented by PARC with active participation of respective provincial governments.
- **Agriculture Sector Linkage Programme**
 The programme is under implementation since 2005 with the Australian technical and financial assistance. The cost of the first phase was Australian Dollar 6.6 million, completed in June 2010 and has been able to improve production and post production management in mango and citrus besides the capacity building of growers, scientists and business men. Based on the

achievements of first phase an amount of Australian Dollar 12.9 million has been provided and activities are in progress.

8.7.4 Performance Evaluation of PARC

Upon the directive from the President Secretariat, the Planning Commission undertook the performance evaluation of the PARC which is an apex body of agriculture research at federal level in the country. The exercise provided a chance to identify the deficiencies for future improvement. Based on the available information necessary recommendations were formulated for consideration at appropriate level. The BOG of the PARC in its 32nd meeting also recommended for third party evaluation of the organization to provide guidelines for its restructuring. For the purpose the IFPRI has been tasked to undertake this exercise with the financial assistance of USAID. The engaged experts are doing this exercise.

