

**Agriculture and Food Security Policy**  
**(Draft)**

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**Government of Pakistan**  
**Ministry of National Food Security and Research**

## **I. Introduction**

The Government resolves to achieve value added growth in the agriculture sector for both domestic and export markets. An essential part of this programme is to achieve food security and to raise overall rates of economic growth for the benefit of all sections of the society. Raising the growth rate of agriculture which contributes 21.4 percent to GDP and employs 45 percent of the labour force, is a key element to achieve this goal. According to the former Planning Commission (now the Ministry of Planning and Development), the agriculture sector needs to grow at 5 percent for reducing poverty and reaching the growth targets of 7-8 percent for the national economy of Pakistan. Higher growth rates will come mainly from middle to larger farmers who have the investment and risk bearing capacity to diversify and innovate. However, pattern of agriculture growth also needs to take account of the needs of the rural poor including small farmers, nomadic and transhumant and the landless. These groups, which have often been ignored in the past, can also make a significant contribution to growth and to overall improved living conditions in rural areas. In addition, these growth enhancing and poverty reduction policies need to be accompanied by well targeted policies that ensure food and nutrition security for all.

2. In order to help formulate a new Agriculture and Food Security Policy, the Government called upon national experts from the Ministry of National Food Security and Research, the Pakistan Agriculture Research Council and the National Agriculture Research Centre. This national team was supported by the Food and Agriculture Organization (FAO).

3. The proposed Agriculture and Food Security Policy sets out a vision and goal for agriculture and food security, along with a set of policy directions. This would help the provinces that have, after the 18<sup>th</sup> Amendment, overall responsibility for agriculture and rural development, to articulate their own policies and strategies, as well as formulate investment plans for both the public and private sectors. It includes a set of actions related to Federal and inter-provincial issues in agriculture and food security related to international and domestic coordination, upstream and strategic research. It also covers minimum standards for food safety, seed certification, and pest and animal health surveillance. Finally, it makes proposals for a series of federally funded flagship programmes to address critical issues that need a national approach and political backing to be successful.

4. Preparation of this policy document is following a strong participative process. The current draft will be discussed at workshops and meetings to be held at Federal and provincial levels to elicit ideas and priorities from Government officials and experts, NGOs/CSOs, private sector, farmers' organizations, academia, researchers and international development partners. At the same time an internet-based electronic survey is being conducted to get feedback from a wide range of stakeholders on key aspects of the policy, the role of the Federal Government in agriculture and food security, and the national flagship projects to be undertaken. Central focus of the policy would be to achieve sustainable growth in the productivity of major crops as well as the promotion of high value agriculture including horticulture, fisheries and livestock. Hence, the policy aims to increase the economic access to food for the socially deprived communities of the marginal areas.

## II. Major Challenges Facing Agriculture

5. The agriculture sector in Pakistan faces a number of major challenges in the coming years. Agriculture performance in Pakistan has been poor in recent years with low growth (3.1% in 2011-12 and 3.3% over the last decade). Major factors underlying this poor performance include a slow rate of technological innovations; problems with quality, quantity and timeliness of input supply; limited investment in construction and maintenance of infrastructure; marketing and trade restrictions; pest and livestock disease problems; and limited amounts of credit for agricultural production and processing and the lack of agriculture-specific loan products.

6. Poverty, food security and food safety remain major issues. Agriculture growth has not impacted the rural poor to the extent it has done in other countries and despite consistent increases in the production of wheat – with production in 2013 exceeding 24 million tons - some 30% of the population is undernourished with child wasting and stunting being a major concern for the country's future. High chemical use, poor post harvest handling, processing and overuse of pesticides has resulted in poor quality, and sometimes unsafe, food reaching consumers. Quality of food is most often compromised when it is produced in peri-urban areas with sewage/industrial waste water and in tunnels with heavy use of fertilizer and pesticides.

7. Pakistan also needs to continue to build the resilience of the agriculture sector. Climate change projections indicate increased water from higher rainfall, and from runoff from glaciers and snow melt. However, this will be accompanied by greater variability in weather with more frequent extreme events such as flood and drought. Much of the impact of these changes will be on the agriculture sector, which needs mechanisms to cope and adapt. The worst hit areas from the climate change phenomenon would be the deserts and dry regions of FATA, Khyber Pakhtunkhwa, Punjab, Sindh and Balochistan provinces; the flat and poorly drained flood-prone areas of lower Punjab and Sindh; and the coastal areas where over-exploitation of underground and intrusion of sea water are creating salinity problems for aquifers along irrigated coastal areas. Launching of special national flagship programs in these areas would be a major priority in this policy for improving economic wellbeing and development of these regions.

### Key Constraints to Production and Productivity

#### Lack of a Favorable Innovation Environment:

8. Yield growth for most crops and livestock products in Pakistan has stagnated and become more variable in recent years, and there continues to be large gaps between achievable and realized productivity in most crops. Diversification and a move to higher value added had been limited, particularly in the crops sector, with the cultivated area under high-value crops more or less unchanged between 1960 and 2000. In part this is a result of over-focus by researchers, and other support systems, on traditional crops and cropping systems to the detriment of high value agriculture. Paradoxically, performance has been better in the livestock sector, where public support particularly for innovation and technology generation has been limited. Poultry, dairy and more recently meat, have generally done well; however, major problems remain due to poor husbandry practices particularly among smaller farmers and transhumants. Currently, the public support system for livestock is centered around health services with very limited focus on alternate feeding regimes, fodder preservation and genetic improvements. Coverage is also limited for high risk, epidemic diseases such as Foot and Mouth Disease, while problems related to effluent and disease management are major risks to

the intensive poultry and dairy systems. There is wide consensus that technology and innovation can play a large role in accelerating and deepening agriculture growth and rural development. However, in order to do so there is a need to:

- Create an enabling environment where a wide range of stakeholders, including private sector, NGOs/CSOs, farmers' organization, universities and federal and provincial research institutions can work together to bring about social and economic changes; and
- Substantially increase the amount of resources allocated to agricultural research, which as a proportion of agriculture GDP, is 30 percent lower than in Bangladesh, India and Sri Lanka, and 40 percent lower than the average for the Asia-Pacific region.

### **Technology Dissemination:**

9. Problems with a limited, and an inadequately organized research system, are compounded by weak extension linkages that has not been able to transform itself according to the changing circumstances and market requirements, or to make use of new technologies. Another major problem is the lack of a competent and well-trained cadre of service providers who could facilitate technology adoption process at grass-root levels. Lack of detailed technical guidance, inputs and advice at a large scale limit the adoption of highly viable and tested technical improvements such as High Efficiency Irrigation Systems (HEIS), alternate energy, scientific orchards management, and better post harvest handling, value chain management, processing and marketing. Availability of such vital services providers would only be possible with the up gradation of existing training infrastructure with new curriculum and skilled faculty.

10. On the other hand, despite having a very large extension staff, the effective linkage with farmers, particularly small farmers, is limited. As a result the extension system was remaining slow in channelizing new technologies to farmers. Also they played a limited role in providing timely feedback on problems and issues to the research system. Administrative devolution has further weakened these services, with many extension workers now involved in activities not related to technology dissemination. New paradigms for extension are emerging based on the recognition that innovation come from various sources including the private sector and farmers themselves, and that farmers are not passive receivers of technology but are dynamic and active innovators and learners. These new approaches, which include using Information Communication Technology (ICT), Community Service Centers (CSC), the Farmer Field Schools (FFS) and Plant Clinics (PC), are yet to be mainstreamed.

### **Inefficient Water Management:**

11. More than three fourth of culturable land in Pakistan is irrigated, with the remaining areas dependent on rainfall. Water management under both production systems is inefficient that causes low water productivity and economic prosperity. Water harvesting and efficient use in dry rainfed regions although a promising proposition but had not been adequately emphasized. Resultantly, economic disparities among irrigated and non-irrigated regions widened that had created conflicts and security problems. With improvement in water management, many rain fed areas have the potential to be converted into high value horticulture zones if a package of technologies promoted with requisite investments.

12. Agriculture which is largely dependent on an antiquated irrigation system characterized by large inefficiencies at canal, watercourse and field levels. In large part this is

due to lack of adequate recurrent expenditures and in part due to system efficiencies which result in farmers at the tail end of the canal system rarely getting water. Furthermore, water charges are low, recovery rates are limited, and water revenues are collected go to the general revenue budget rather than to the provincial irrigation departments. As a result, essential repair and maintenance remained dependent on Federal subsidies and donor projects. In Punjab Abiana is charged at a flat rate Rs. 85 per cropped acre during the Kharif season and Rs. 50 per acre during the Rabi season and the gap between Operation and Maintenance (O&M) expenditure and revenue collection is 68, 80 and 77% for Punjab, Sindh and KPK, respectively. Groundwater use has been expanding rapidly in recent years but access is mainly limited to larger farmers who can make the necessary investment. In many areas lack of regulation and subsidies on electricity are leading to overexploitation. The need for major reforms in the water sector are well recognized and a number of initiatives related to changing the institutional setup, raising and rationalizing water charges, and improving water use efficiencies are underway. These reforms however have not been completely successful, due to problems at both the provincial and local levels. A renewed political commitment by Federal and Provincial Governments will help implement the changes needed to ensure a viable more efficient and sustainable irrigation system for Pakistan.

### **Access to Other Inputs:**

13. Credit can enhance productivity and also facilitate the shift to higher value cropping but access to formal credit markets in rural areas is generally limited with just over 10% percent of farmers having access to formal loans. Access is hampered by a range of problems ranging from lack of financial products that meet the risk concerns of banks and are suitable for farmers, to overreliance on land titles as collateral. Access to informal credit markets is more widespread, but rates are high and maturities too short to be a source of development finance for farmers and are largely used for consumption or for events such as marriages, funerals and illness. The supply of improved seeds for major crops has grown rapidly particularly after adoption of the national seed policy in 1994. Most seeds are provided by the private sector with a number of crops, such as maize, oilseeds and vegetable, relying heavily on imports. A key problem with seeds, which is common with a number of other inputs such as pesticides, fertilizer, seedlings, and vaccines and drugs for livestock, is one of quality. Currently there is no effective regulatory framework for private service providers, and no system to test and certify quality of the input of services they sell. The existing system to test and certify seeds is rigid and complicated.

### **Supply Chain Problems:**

14. Supply chains link farmers to markets and over the last decade major improvements have been made, albeit in only a few areas, to improve grading, processing, storage, packaging, transport and labelling. Improvements have been particularly noticeable in fruits – part of the production of soft and stone fruit are now well graded and packed in cardboard cartons with relatively reduced losses; dairy – where major innovations have been made in the milk collection, processing and marketing systems, due in part to involvement of the private sector and the use of contract farming; and in poultry – where strongly developed supply chains are well consolidated. Much less improvements have been made with other high value perishables, particularly vegetables and livestock – where grading and handling remains poor; and for fisheries, particularly marine fisheries where poor handling results in much of the catch being wasted or used for low values products such as animal feed. For the major cereals a key weak links are the lack of good storage facilities, particularly silos for wheat, rice and maize that result in massive losses, and, in the case of Basmati rice lack of good seed varieties.

### **Investment Levels in Agriculture:**

15. Investment levels in Pakistan's agriculture have been low. Despite the fact that over 21% of GDP comes from agriculture, less than 10% of the country's total gross capital formation goes to agriculture. Combined with problems of degradation of the resource base, particularly of water and land, and of quality and quantity of input supplies, agriculture is simply not attracting the resources needed to raise production. Investments are needed from the public sector where only a small share of federal budget and Provincial ADPs are allocated to agriculture, including irrigation. With regard to private sector investments, available evidence suggests that rural savings are not being ploughed back into agriculture or rural-based activities, but are often being moved to urban and semi-urban areas to finance trade, services and industry. In order to address the low levels of investment in agriculture, the Government has to play a key role. Action is needed mainly in two areas:

- Firstly, there is a need to increase and, more importantly, refocus public investments in critical areas that create favourable conditions for attracting private investments, rather than replacing or crowding out private investments – for example, public investment in irrigation should focus on canals and other upstream facilities while giving farmers' organization greater freedom to raise funds and manage lower level infrastructure. Similarly, in animal health the focus of public investments should be on creating a good regulatory and surveillance system for animal disease, rather than investment in delivery mechanisms that the private sector could do. Fisheries sector need investment in developing hatcheries, feed mills, intensive cage culture and cold chain for efficient marketing and trade. For fruit plants, import of germplasm of new species from public funds could help in the propagation of quality saplings for developing cluster of new orchards by the private sector.
- Secondly, the trade, market and pricing system of agriculture sector needs review – various studies suggest that prices for a number of agriculture commodities, particularly higher value crops, are lower than parity prices due to a distorted trade and tax regime, while prices of wheat are relatively high and procurement dominated by the public sector.

### **Pest and Disease Problems:**

16. The system for surveillance and prevention of pest, disease and parasites prevention for crops and livestock in Pakistan is still rudimentary. Often the problems are compounded by poor practices – for example limited use of integrated pest management techniques; and limited supplies and unreliable quality of chemicals, drugs and medicines. Some of the major areas where problems exist are discussed below.

- In the crops sector, for major cereals, the most critical problem relates to poor post harvest practices that result in large crop and financial losses for the farmer; while in high value crops, particularly horticulture and cotton, the major problem is the overuse of pesticides and other chemicals to prevent losses from pests and diseases.
- Preventable endemic animal diseases such as PPR, foot and mouth and Newcastle significantly reduce productivity of small and large ruminants and of poultry, particularly for small farmers and livestock breeders, including the nomads and transhumant who produce large number of sheep and goats; outbreaks can often wipe out years of saving of farmers or leave them in substantial debt.

- In commercial poultry, viral diseases have developed and spread rapidly in the past and such risks continue due to poor hygienic conditions and overcrowding. A high risk of such outbreaks also exist in the commercial dairy sector where large numbers of animals live in cramped and unsanitary conditions in the dairy colonies near major towns and cities.

## **Rural Poverty and Food Security**

17. A comparison of Pakistan with other countries in the region suggest that current growth is having less impact on welfare indicators such as poverty, literacy, health, life expectancy, women's empowerment and child stunting.

### **The Quality of Agricultural Growth:**

18. Since 2000 Pakistan has made a major progress in reducing urban poverty from about 35% to 17%. However, the reduction in rural poverty has been much slower than the reduction in urban poverty levels. Moreover, in rural areas poverty is now concentrated among the small farmers, rural landless and those working in non-agriculture related activities. Agricultural growth can have a quick and direct impact on poverty and employment of those directly involved in agriculture, as well as on the landless and the underemployed in the non-farm economy. However, its potential in this respect has not been fully exploited. As mentioned above, overall performance had been poor; more critically, the increases that have been achieved have been through greater input and resource use, with limited success in raising productivity. An approach that targets small farmers, through improved availability of appropriate technology, better access to critical inputs, particularly quality seed, irrigation and credit, and attractive prices can raise overall growth rates while also reducing poverty.

### **Food Security:**

19. One in three Pakistanis does not have regular and assured access to food. The most vulnerable are children, particularly girls, women and the elderly, especially among the lower income groups. In Pakistan, 43 percent of children under 5 years (or more than 10 million) suffer from chronic malnutrition and more than 15 percent (or around 3.5 million) from acute malnutrition, according to the National Nutrition Survey conducted in 2011. Others suffer from transitional food insecurity due to variability in incomes and food availability through the year. These high malnutrition rates have shown little to no improvement since the last national survey conducted 10 years ago.

20. The 2011 survey found that infant and young child feeding practices are poor while knowledge about adequate feeding practices is limited. With the exception of iodine deficiency disorders, all other micronutrient deficiencies, such as Vitamin A deficiency and iron deficiency, are prevalent throughout the country and have worsened over the last years. These deficiencies impair a child's physical and mental development and contribute to an increased risk of morbidity and mortality. High level of malnutrition resulted from enhanced dependence on commercially produced food from markets. Even, rural households had reduced home production of vegetables and fruits. Rural, poultry, goat farming and kitchen gardening had lost its importance both for domestic use and marketing. As a consequence less nutritious food is consumed while spending limited earnings on food at the cost of other social needs.

21. The constraints in food utilization include nutrient losses associated with food preparation; inadequate knowledge and practice of health techniques, including those related

to nutrition, childcare, and sanitation; cultural practices that limit consumption of a nutritionally adequate diet by certain family members particularly young girls; and inadequate institutional capacities for effective nutrition promotion and alleviation of malnutrition. In a country that exports cereals, lack of access to food and adequate nutrition by such a large proportion of the population clearly indicated major problems of poverty and income distribution.

22. In addition to poor access to food, specific nutritional problems persist among particular groups, for example lack of a balanced diet is creating problems of stunting even in children that have adequate calories. Similarly, unbalanced diets and cultural habits – such as drinking tea immediately after meals – causes lack of iron and is resulting in anaemia, particularly among pregnant and lactating mothers, with consequent health impacts on children

### **Building a More Resilient Agriculture Sector:**

23. In 2010 and 2011, floods severely damaged the agriculture sector, disrupted the livelihoods of populations closely connected to agriculture, and reduced overall economic performance. These events underlined the vulnerability of the agriculture sector, as well as the entire economy to extreme weather events. Although single climatic events do not provide evidence of long term climatic change, studies for Pakistan suggest that there are likely to be significant climate change impacts. Rising temperatures are likely to result in melting of the glaciers in the western Karakorum and Himalayas that would increase river flows. In addition, rainfall during the summer monsoon may increase by up to 20-30% – with much of the additional rainfall falling in high-intensity storm events. Extreme weather events will become more frequent. This further highlight the need to better harvest surplus water in dry regions for growing high value crops with low water requirements.

### **Climate Smart Agriculture:**

24. Pakistan needs to adapt to the new, more variable weather patterns that are emerging. This will require a series of actions ranging from adjustments in infrastructure; improve water harvesting infrastructure; better flood management protocols and procedures; and cropping and farming systems that can adapt to different weather conditions. At the same time there is a need for improved coordination and synergies between various institutions including Ministry of National Food Security and Research (MNFSR), and National, Provincial and District Disaster Management Authorities, in order to ensure that existing legislation and regulations, such as those relating to encroachment into flood plains are adhered to.

### **Responding to Emergencies and Disasters:**

25. Pakistan has well demonstrated its capacity to respond to major disasters such as the 2005 earthquake and the 2010 floods with NGOs and civil society have proactively participated in this process. However, there is room for improvement in planning and coordination, which need to be provided by the Government. In view of the increasing likelihood of future emergencies, better plans and coordination mechanisms at district, provincial and national levels are needed. In areas facing complex security conditions, for example where there a large numbers of refugees, however, Government will have to continue to take the lead.

### **The Need for a New Agriculture and Food Security Policy:**

26. The institutional setup for agriculture and food security has undergone large changes in recent years. The most important of these has been the devolution that took place following adoption of the 18<sup>th</sup> Amendment with the Provinces taking over responsibility for agriculture

and rural development. This has been accompanied by substantial increased resources to implement activities under their Annual Development Plans. In order to guide their activities and investments in agriculture, some provinces have started work on preparation of provincial policies, strategies and investment plans. However, provinces still need an overall national vision and direction for agricultural development to ensure that synergies are maximized and overlaps are minimized. Moreover, certain activities, such as national priority setting, trade policies, national and transboundary pest and disease surveillance, certification of agriculture products at international standards and strategic and basic research on topics of national importance, remain areas where consultation with provinces is needed but the federal level needs to take lead responsibility.

27. A major change is also needed in the overall vision of agriculture development which needs to move beyond simply increasing production to a more livelihood and people-centric approach. The political discourse on agriculture has so far been dominated by how to increase production with a high emphasis by the public sector on a few strategically important crops - mainly wheat, rice, sugarcane and cotton. Relatively little attention had been given to other crops and livestock, with some important activities such as poultry having virtually no government involvement. There has been little regard to other aspects of agriculture and rural development such as raising incomes and employment, efficient use of scarce inputs such as water and land, environment and climate change issues, equity and how to involve women and vulnerable groups such as share croppers, tenants, landless and transhumant. Finally, food security and nutrition has not received the attention it deserves with the result that hunger and malnutrition remain major problems despite the fact that the Pakistani constitution (Art 38) enshrines right to food: "The State shall provide basic necessities of life, such as food, clothing, housing, education and medical relief."

28. The creation of the MNFSR in 2011, to replace the old Ministries of Food, Agriculture and Livestock clearly indicated that there was a need for a new national policy direction, particularly to address key weakness such as the technology gaps and poor nutritional levels that affect all provinces, as well as a number of coordination activities.

### III. Agriculture and Food Security - A New Direction

29. The agriculture and food security policy would aim to:

- create a modern, efficient and diversified agricultural sector that can ensure a stable and adequate supply of basic food supplies for the country's population, and provide high quality products to its industries and for export;
- ensure attractive incomes and decent employment for those who live and work in rural areas;
- use the resource base in an efficient and sustainable manner;
- flexibly adapt to climate change and be resilient enough to quickly recover from shocks and emergencies; and
- ensure that all sections of the population have stable access to adequate, nutritious and safe foods necessary for a healthy life

30. Within this context, the Government primary function is to act as a regulator and facilitator, creating an enabling environment that allows the dynamic subsectors, such as production of high value livestock and horticulture products for both domestic and export markets, to grow rapidly. A conducive investment climate also needs to be created in rural areas for processing, storage and value-chain development to provide employment opportunities, beyond those that can be offered by agriculture itself. At the same time more proactive policies are needed to ensure inclusive growth that will draw in vulnerable group such as small farmers, share croppers and non-agriculture workers; address resource scarcity and degradation issues particularly related to land and water; and bring about a rapid reduction in hunger and malnutrition. In line with the above, the key elements of a new agriculture policy for Pakistan will be:

- move to a more innovation and technology based agriculture that makes efficient and sustainable use of natural resources;
- redirect public sector agriculture expenditure by focusing agriculture subsidies to socio-economic groups that need it most such as small farmers, landless, women, and nomads and transhumant, and public investments in creation of knowledge, technology and essential infrastructure that would facilitate and encourage private investments by raising profitability of agriculture and rural-based activities; and
- ensure that food is accessible to all sections of the population, in particular vulnerable groups such as children and women, and is prepared, stored and consumed in a way that ensures nutritional security.

31. The above key elements would apply to the provinces as well as the federal government and would act as guiding principles for development efforts at all levels. The following sections illustrate a number of actions that should be taken to implement the new policies. However, the specific actions that fall under each of the three elements may vary when applied to different provinces.

### **Building an Innovation-Based Sustainable Agriculture Sector:**

32. In order to build a modern and efficient agriculture sector, innovation and technology need to play a key role. However, this will need to be combined with improved governance and institutional reforms that will ensure proper and sustainable management of the country's physical, human and social capital.

### **Accelerating Technology Generation and Dissemination:**

33. A mix of institutional reform and higher investments will be made to strengthen research and innovation efforts at federal and provincial level, at universities and research institutes, and to promote close collaboration between public sector research and private sector, NGOs/CSOs and farmers' organizations. The enhanced research efforts will be accompanied by deep changes in the agriculture extension system which still largely works to deliver knowledge in a top-down manner, using outdated extension methodologies and practices and with little collaboration from other stakeholders in the agriculture sector. New extension methodologies - such as Information Communication Technology (ICT) CSC, FFS and PC, which have already been widely tested in Pakistan and the rest the world, and Business Field Schools that build capacities all along the agricultural value chains for harvesters, pickers, packers and transporters - will be mainstreamed; closer collaboration will be sought with input suppliers, traders and wholesalers - particularly the more progressive companies through public private partnerships- with whom farmers have a close commercial relations; far greater use made of digital technologies that can provide instant and virtually costless access to market information and other knowledge sources; and the possible introduction of performance-based incentive systems for extension workers with market based salary scales. In order to promote a more holistic and multi-stakeholder approach to agriculture innovations, provincial agricultural research board would be established in Sindh, Balochistan and KPK provinces along the lines done for the Punjab, with performance based employment. PARC in collaboration with NAVTEC is already involved for the capacity building of young people from fragile and marginal areas of Pakistan. This program needs to be expanded further to cover the available youth from rural area.

### **Governance and Institutional Reforms:**

34. Farmers and local communities will be increasingly drawn into the management of natural resources. Foremost among these is irrigation, where the reform process related to management of surface and canal irrigation system will be completed and deepened based on an analysis of the strengths and weakness of past reform efforts. This needs to be accompanied by similar reforms related to ground water – where the current system of uncontrolled and, in many cases, subsidized pumping will be addressed by working together with farmers to eliminate the current system of flat-rate charges and bring about a more efficient and sustainable system. Similarly, in the case of input and services, such as animal health services, fertilizer, pesticide and chemical distribution, the Government will focus on oversight and overall regulatory mechanisms, such as establishment of certification systems for quality control, truth in labeling and traceability. This will allow the private sector and other service providers to gradually take over direct commercial activities. Where possible, bodies such as the Pakistan National Accreditation Council will be drawn into the agriculture sector.

35. There will also be a gradual revision of the regulatory framework for fruit, vegetable and livestock markets which will reduce the direct role of Government to setting and monitoring health, hygiene and regulatory standards. Such as realignment of public services will imply considerable right sizing of various departments, particularly to severely reduce the ratio of support to technical staff. At the same time there will be a parallel process to upgrade staff skills and capacities to undertake their new tasks which need to focus on areas of high

potential such as agro-processing, use of bio-technology in crops and livestock, true-to-type clean nurseries, hybrid seed production, aquaculture, spate irrigation systems, resource conservation, alternate energy and milk and meat production, where possible with modern and progressive traders and marketers – including supermarkets; and on helping the poorer and more vulnerable sections of the rural community. Another key area where rationalization will be undertaken relates to the land markets and rental agreements. At present land markets are characterized by restrictive and opaque practices, which severely limit purchase and sale of agricultural land, preventing the land consolidation needed to overcome the fragmentation taking place. New systems, based on international and regional best practices will be gradually introduced which will include computerization of land records and a cadastral with proper land use classifications. Similarly, a process will be started to introduce written rental agreements to replace the current system of verbal agreement that often provide virtually no rights to the tenants.

### **Reforming Fiscal and Trade Measures:**

36. An efficient and equitable system of charges, taxes and subsidies for agriculture is needed. The current regime, which is the result of adhoc adjustments will be reviewed to ensure that price signals to farmers encourage efficient use of resources. Among the first issues to be addressed would be *Abiana* charges that, at current levels, do not cover costs and do not reflect the actual water usage for different crops, particularly high water users such as rice and sugarcane. Similarly, the system of taxing export crops, such as rice and cotton, but subsidizing fertilizer prices, much of which goes to the larger and more influential farmers will be rationalized. Restrictions on domestic and international trade will be simplified to ensure that only those required for essential reasons – such as health and bio-safety reasons - are maintained and Pakistan avoids creating segmented domestic markets where provinces restrict trade among themselves and the country is isolated from the opportunities provided by international and regional markets. Pakistan also needs to adopt key international instruments such as a trade related intellectual property right (TRIPS), Good Agricultural Practices (GAP) and Good Manufacturing Practices (GMP). Lastly, stronger and better branding of its products is needed, especially high quality products such as Basmati rice and mangoes, in both domestic and international markets. There is also a great potential to develop new products like fruit candies and herbal teas as cottage products for value added exports. Enhanced collaboration will be undertaken with leading traders and exporters to facilitate this process and to provide a legislative and regulatory cover for creation of branded agriculture products.

### **Ensuring Sustainability:**

37. While some tasks related to management of natural resources can be delegated to communities, the Government will retain overall responsibility for conserving and managing the natural resources base of the country. Some of the major tasks that will be undertaken to fulfill this role are adopting guidelines for land use planning, water and effluent management, control of dangerous chemical and hazardous drugs, promotion of IPM technologies and implementing plant and animal quarantine services. An area where quick action will be taken relates to better management of land and water. Some of the most urgent problems to be addressed would be to use more sustainable cropping patterns and systems better adapted to local conditions – yields in some of the most productive areas are facing declining due to over reliance on rice/wheat cropping patterns; improved resource conservation technologies, including water-harvesting and erosion control, in more agro-climatically fragile areas such as arid and high elevations lands for planting horticulture crops with low water requirements such as like olive, pistachio, pomegranate, grapes, fig, almond and falsa.

### **Promoting Private Investments:**

38. Private investment is a critical driver of agriculture growth. Some of the measures mentioned above such as improved governance and rationalization of trade and tax regimes, will improve the investment climate and instill needed confidence in the private sector. However, actions will be undertaken in a number of additional areas. Firstly, credit programmes, particularly for small farmers, will be strengthened based on the negative and positive lessons learnt from the operations of the Zarai Taraqiyati Bank Limited (ZTBL) and the Pakistan Poverty Alleviation Fund (PPAF). This would be complemented by a greater collaboration with other important financial services providers, such as commercial banks and mobile banking, to improve their operations in rural areas, better link up with traditional savings and loan activities and develop suitable credit/microfinance products particularly for small farmers. Secondly, the legal and regulatory framework for large scale investors in agriculture and rural activities, including for purchase of land, will be improved.

### **Improving Service Delivery to Farmers:**

39. Introducing service delivery and support mechanism for enhancing timely access to quality inputs is made through establishment of Rural Business Hubs (RBHs). The RBHs, would be a “one stop shop” providing business solutions to the farmers, particularly to link them to markets both for inputs and output, promote private sector enterprise developments, and initiate public private partnerships. These RBHs will be operated by farmers associations/community based organizations, including with the help or in joint management with the National or Provincial Rural Support Programmes.

### **Using Public Investment to Improve Profitability of Agriculture:**

40. Given the size and strategic importance of agriculture, public investment in agriculture will be raised to at least 10% of the total public sector development expenditures at federal and provincial level. Moreover, the composition of public expenditure will shift more towards core public investments such as roads and markets; and irrigation, water harvesting and drainage works; fisheries; which, along with appropriate changes in trade and price policies, would raise profitability of agriculture.

### **Rationalizing Government Support:**

41. Current support and expenditures for agriculture will be reviewed to ensure that they are directed to production of public goods such as research, pest and disease surveillance, efficient water use, alternate energy, agro-processing and creation and administration of a regulatory and legislative framework; addressing externalities such as enhancing sustainability and adopting environmentally friendly activities; and for social purposes, particularly addressing the needs of the poor and vulnerable whose limited access to goods and services those not permit them to undertake productivity and income enhancing investments. Targeted support would make use of Computerized National Identify Card (CNIC) and smart phone technology. Some of the areas where priority action will be undertaken are discussed below.

### **Replacing the Current Wheat Procurement System:**

42. The current wheat procurement schemes will be replaced by a more rationalized programme that procures the quantities needed to provide subsidized wheat or flour to well defined food insecure consumers in rural and urban areas. Such a programme would be based on national experience and the use of balanced poverty scorecards, such as that of the National Income Support Programme, and international best practices, such as that of the Brazilian Zero Hunger Programme. In order to maintain domestic food price stability in the face of possible large fluctuations in international food prices, rules-based adjustable tariffs that set floor and ceiling prices will be introduced. In order to ensure greater stability efforts

will be made to encourage the private sector to build more efficient and improved storage facilities – the incentives for the private sector to store wheat will be improved with the reform of the current wheat procurement programme.

#### **Targeted Productivity Enhancement Programmes:**

43. Targeted productivity enhancement programmes will be introduced for those who cannot meet their subsistence food needs such as small farmers and livestock breeders. These will be complemented by income generating and skills enhancements programmes for the landless such as rural poultry, bee keeping, certified nurseries, tissue culture, goat enterprise, mushroom production and seed enterprises. Both type of programmes will be set up with a special focus on women. Such programmes, would aim to provide essential inputs and investments to assist the poor to take the first steps out of poverty. Kitchen gardens will also be encouraged in urban areas. Some of the major productivity enhancement programmes, such as the Farm Mechanization Programme and the Tractorization programme, that predominantly benefit large and influential farmers, will be reformed to focus largely on small farmers.

#### **Ensuring Food Security and Freedom from Hunger:**

44. Measures to improve food and nutritional security will require actions on a number of fronts that are set out below.

**Improving Access to Food:** In the case of poor households, with insufficient income to buy food, targeted food programmes, will be developed and introduced. Depending on local circumstances these could be in the form of food rations or in the form of cash vouchers.

**Increasing Production of Critical Food Items:** There are a number of households, mainly in the remote areas of Pakistan, where male members have migrated to work in big cities or overseas, while women, children and old members of the family remain on their farms. These families have cash to purchase cereals and other basic foods, but have problems to buy nutritionally perishable but critical food item such as milk, meat, vegetable and fruits due to transportation problems. Programmes, mainly targeted at women, will be launched to help these target groups enhance production of these critical foods through small scale livestock activities and kitchen gardening, as well as by use of micro-nutrient fertilizers.

**Strengthening Nutritional Education:** Nutritional practices generally, as well as for high risk groups such as pregnant and lactating women and young children, need to be improved. This will be done through high profile media and other campaigns and through mainstreaming of nutrition in academic and training institutions. These will focus on reducing unhealthy food habits, such as drinking tea after meals as this inhibits absorption of iron, as well as promotion of healthy infant and young child feeding practices, micronutrient supplementation and food fortification through school feeding programs.

## **IV. Implementation Arrangements**

45. Implementation of the new policy will require involvement of the various ministries, departments and institutions at federal level, although the main operational responsibility for most actions will be at provincial level. In addition, the new policy directions will require drawing in Government institutions at sub-provincial level - particularly at District and Union Council level – and working much more with the private sector, NGOs/CSOs, academia and farmers' organizations.

46. In order to implement this new policy, complementary policies, plans and programmes will need to be prepared by each of the provinces and regions and, where needed, the Ministry of National Food Security and Research (MNFSR) would stand ready to provide support to do this. To date, a policy and investment programme has been prepared for Khyber Pakhtunkhwa and is under preparation for Balochistan.

**Role of the MNFSR:**

47. MNFSR would play an overall convening and coordination role, including monitoring, reporting and addressing high level policy issues. It will also have to continue to take the lead in addressing national, interprovincial and international coordination issues.

**Oversight Role:**

48. MNFSR will have oversight of policy implementation through an Implementation Committee. The Committee will be chaired by Federal Secretary Ministry of the MNFSR and includes secretaries of relevant Ministries, Commissions and Programs from federal and provincial levels, representative from academia, private sectors and civil society organizations. The Committee will review progress of overall actions at federal level, including formulation and enforcement of legislation and regulations and report regularly to the Minister MNFSR and the Prime Minister. The MNFSR will create also councils or commissions to monitor and report on specific activities and programmes. One of these will be the national Food Security Council to address food and nutritional security issues and will comprise concerned Government agencies at federal and provincial level as well as NGOs/CSOs.

**Coordination Role:**

49. Although provinces are to take the lead in agriculture matters, MNFSR will continue to have an overall coordination and support role in many aspects related to agriculture and food security. These will include:

- handling interprovincial issues such as interprovincial trade of both input and outputs; and the framing of legislative and regulatory measures, ensuring that provincial and federal regulation and laws are complementary rather than conflicting;
- coordination of research activities between national and provincial systems, and sharing of research outputs and best practices;
- promotion of international collaboration with United Nations (UN), other international partners and with other countries;
- monitoring of national food and agriculture supplies to ensure timeliness and adequacy and, along with other concerned agency, managing imports and exports of essential items;
- provision of advice on international trade and tariff regimes, particularly with regard to phyto-sanitary and quarantine measures;

- surveillance of national and transboundary pests and diseases and coordination of control measures; and
- cooperation and collaboration with other federal and national institutions whose work impinges on agriculture and food security.

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## V. National Flagship Programmes

50. In order to complement provincial agriculture and food security efforts, the MNFSR will launch a series of national flagship projects. These projects would cover activities which have a high technological component, are in the more remote and agro-ecologically challenging areas, are high risk but high return, or address high priority national issues. Four areas of action have been identified, subject to further discussion with the provinces and other stakeholders such as CSOs, private sector and farmers.

### **Promotion of High Value Crops:**

51. While provinces will take the primary responsibility for promoting and increasing production of traditional crops and livestock products such as major cereals (wheat, rice, maize); cash crops (sugarcane, cotton, oilseeds); and meat and dairy products, the Federal Government will provide complementary support in activities that need greater technological and research linkages with national and international areas, and special support for developing marketing chains and logistics. Activities are proposed with regard to:

**Fisheries and Aquaculture:** With 1200 km of **coastline, xx km of rivers and canals, and xx ha of lakes, ponds and other open** water bodies, Pakistan has an immense potential for enhanced fish production. National demand, which had been traditionally low, is also increasing rapidly in both urban and rural areas. The MNFSR will work with the provinces to introduce coastal aquaculture of shrimp and fish, including large scale cage culture; and stocking with appropriate species of reservoirs, lakes and rivers. Federal level efforts will focus on creation of nurseries for breeding of fry and fingerlings, collaboration with the national animal feed industry for production of appropriate fish feed; import of technology; and promotion of large scale foreign investments.

**Non-Traditional Horticulture Crops:** Due to its very wide range of agro-climatic zones, Pakistan can grow most sub-tropical and temperate fruits and vegetables. These have large regional export potential, as well as rapidly expanding domestic demand. MNFSR will assist provincial agriculture departments with establishment of a network of improved nurseries with particular help provided in the selection of varieties and rootstock, planting and pruning protocols, and introduction of new crop such as Kiwi and Avocado. In the short-term MNFSR also facilitate commercial import of disease-free planting material.

### **Development of Marginal and Environmentally Fragile Areas:**

52. The areas outside the main canal irrigated systems are home to large number of poor people. High population pressure and the use of poor and inappropriate technologies is, in many cases, resulting in rapid degradation. A more efficient and sustainable development effort, based on a mix of improved technologies and community efforts can play a major role in raising incomes and reducing degradation. It is proposed that the MNFSR will work with the provinces on:

**Improved Management of Rainfed Areas:** Some 40% of rainfall in non-canal areas is lost to run-off. Improved water harvesting, along with water conservation and water spreading (rhod-kohi), can have a major impact on production and incomes. MNFSR's work would focus on the bringing in international best

practices, including on the combination of water management techniques with appropriate on-farm practices such as conservation agriculture.

**Rangeland Improvements:** There is considerable scope to halt degradation and improve the productivity of the rangelands in Pakistan. The rangelands are a major source of meat production, particularly of sheep and goat, with much of the production being in the hands of nomads and transhumant. Rangeland improvement will require targeting and addressing the needs of these populations who are often not well catered to by provincial livestock services due to their lower social status, as well as the technical difficulties of providing services to a transient group. Support by the MNFSR to provincial livestock departments can play a major role in bringing in international experience on participatory range management. In addition there is a need to improve the genetic quality of the stock, which are showing a decline in productivity due to excessive inbreeding.

### **Improving Food and Nutrition:**

53. Given high levels of malnutrition and in particular child stunting, a major national level effort is needed to address some of the underlying factors. MNFSR action should focus on:

**Targeted Food Distribution Scheme:** A national targeted scheme to ensure that basic food needs of the population are met, both in terms of overall calorie intake, as well provision of essential micro-nutrients. The scheme would need to build on international experience, such as that of the Zero-Hunger Programme in Brazil; as well as national experience, such as that of the Benazir Income Support Programme. Involvement of the MNFSR would be essential in the design and implementation of the scheme, particularly with regard to targeting through the use of modern IT facilities.

**Education and Awareness Building:** In addition to ensuring adequate qualities of food, methods of food preparation, storage and consumption play a major role in the nutritional health of the population. MNFSR needs to take a leading role to ensure that these issues are addressed through media, both print and electronic; and through other awareness raising methods such as inclusion in school and college curricula.

### **Promoting a Network of Service Providers:**

54. Renewed agricultural development will require considerable increase in the density of service providers in rural areas. While some of these, such as Farm Service Centers or Rural Business Hubs, could have a significant involvement of provincial Governments, the majority of service providers would be private sector and, where appropriate, CSOs. These would cover real good and services, such as animal health facilities, and input and output marketing, as well as virtual services such as market information and prices, and access to knowledge and new technologies. The MNFSR has to play an enabling role for the enhanced involvement of the private sector and CSOs in the rural areas, creating an appropriate legislative setup, an efficient and low-cost dispute resolution mechanism and protocol to avoid restrictive practices by private traders and suppliers.

**New Directions for Agriculture and Food Security  
Critical Policy Actions**

<b>Results Chains</b>	<b>Actions</b>	<b>Implementation Responsibility</b>	<b>Key Indicator of Success</b>	<b>Start Date</b>	<b>Completion Date</b>
<b>I. Building an Innovation-Based Sustainable Agriculture</b>					
<b>Technology Generation and Dissemination Accelerated</b>	Reform Institutional set up of research and higher investment in research	MNSFR, PARC, provincial Governments( PARB and DG Research)	Interprovincial Coordinating Committee on research meets every six months Level of Investment in research ( % change with respect to 2013)		
	Establish provincial research boards	Provincial Departments of Agriculture, Livestock, Fisheries, forestry etc.	Provincial Boards set up in Sindh, KP and Balochistan with performance based contracts		
	Restructure the extension service include introducing pay for performance and market based salaries	Provincial Departments of Agriculture, Livestock, Fisheries, Forestry etc	Number of Farmer Field Schools, Plant Doctors, community Service Centers and Business Field Schools Set up		
	Build linkages between extension services and private sector through public private partnerships	PARC, NARC, PARB and other provincial research entities develop new linkages mechanisms for sharing knowledge, multiplication of technologies and distribution	Number of new linkage mechanisms developed and MoUs signed between research, extension and private sector		
	Implement training programme (on best agricultural practices) for youth as service providers in marginal areas in both technical and management aspects	MNFSR to support provincial training institutes as vocational colleges with new curriculum, faculty and governance	Number of training institutes upgraded and service providers trained		
<b>Conducive Governance and Institutional Reforms implemented</b>	Reform canal irrigations system for improving access and command on use	MNFSR support to Provincial Irrigation Department (PIDA) for piloting new irrigation systems	Number of Area Water Boards (AWB) set up Number of Famers' Organizations (FOs)		

	Improve surface water management at watershed levels	Federal and provincial research with local NGOs, FOs and development partners	Number of watershed managed for improved water harvesting and promoting high value horticulture		
	Improve Groundwater Management	Provincial Irrigation Department	Groundwater Regulations reformed in all provinces		
	Refocus Public services on support and regulations	Provincial Departments of Agriculture, Livestock, Fisheries, Forest and Irrigation	Number of Certification systems established (for nurseries, fertilizer, pesticides, vaccines, outputs, products etc.) in partnership with the private sector		
	Rightsizing Provincial Support Services	Federal and Provincial Departments of Agriculture, Livestock, Fisheries, Forest and Irrigation	Change in proportion of technical to support staff		
	Reduce the direct role of Government in fruit, vegetable and livestock markets to setting health, hygiene and regulatory standards.	FOs, Civil Society, Market committees, provincial legislators	Quality standard developed with marketing reforms		
	Reform of the land markets	Provincial Board of Revenue	- New legal framework is in place; - new land registration system being implemented; - computerization of cadastral records implemented;		
<b>Fiscal and Trade Measures Reformed</b>	Revise <i>Abiana</i> rates and improve collection	Provincial Irrigation Department	Revised <i>Abiana</i> rates that reflect cost of water delivered Raising <i>Abiana</i> collection rates to 80%		

	Reduce export taxes on cotton and rice	Federal Ministry of Commerce	Export duties reduced		
	Replace blanket fertilizer subsidy with targeted support	Ministries of Finance and of Commerce	Blanket subsidy of about 35% removed and equivalent amount shifted to targeted schemes		
	Remove quantitative restrictions on domestic and international trade except those needed for health and safety reasons	Ministry of Commerce	Quantitative restrictions removed on xxx products		
	Adopt key international agreements and instruments – TRIPS, GAP, GMP	Various Federal Ministries	Number of agreements and instruments adopted		
	Establish legislative and regulatory framework for branding products	MNFSR	Legislation and regulations put in place Number of high quality speciality products registered		
	Remove price controls on meat and milk	Provincial Departments of Agriculture and Livestock	Price controls removed in all provinces		
<b>Measures for Ensuring Sustainability Implemented</b>	Create national guidelines for agriculture land use planning, water and effluent management in rural areas, and on use of dangerous and hazardous agro-chemicals	MFSNR, PARC, Ministry of Climate Change	Guidelines prepared and issued		
	Promote more sustainable cropping practices	PARC, Provincial DGs Extension	Demonstration clusters developed and National guidelines issued		
	Promote Water harvesting and erosion control in fragile areas	Provincial Departments of Agriculture and of Irrigation	Acreage covered with improved water structures and diversions		

<b>Investments Promoted.</b>	Enhance involvement of commercial banks and others in agriculture and rural finance	MNSFR, State Bank of Pakistan, Commercial Banks, Mobile-banking service providers, microfinance institutions such as PPAF	Level of institutional credit into agriculture		
	Improve legal and regulatory framework for large-scale investment in agriculture, including land	MNSFR and Provincial Governments	Areas for improving legal and regulatory framework identified and new investments made		
<b>Service Delivery to Farmers Improved</b>	Improve service and input delivery to farmers	Provincial Department of Agriculture, District level staff of Agriculture, Livestock, Fisheries and Forestry	Number of Rural Business Hubs or Farm Service Centers opened		
<b><u>2. Rationalizing Government Support</u></b>					
<b>Current Wheat Procurement System Replaced</b>	Replace current wheat procurement scheme with targeted food distribution scheme	MNSFR, PASSCO, Provincial Food Departments	Savings to national and provincial budgets		
	Variable tariffs for wheat imports	MNSFR, Ministry of Commerce	Limited fluctuation of national wheat price (compared to international price fluctuations)		
<b>Productivity Enhancement Programmes Implemented</b>	Targeted productivity for small farmers and livestock breeders in food deficit areas Kitchen gardens in urban areas	Provincial Departments of Agriculture, Livestock, Fisheries and Forestry and their District officers,; and city governments in urban areas	Number of farmers and livestock producers benefited; number of kitchen gardens established in urban areas		
	Skills enhancement programme with priority for landless and women in high technology commercial agriculture	Provincial Vocational training institutes, Departments/training institutions/Universities relating to Agriculture, livestock, fisheries, forestry, TEVTA	Numbers of landless and women trained		

<b>3. Ensuring Food Security and Freedom from Hunger</b>					
<b>Access to Food Improved</b>	Provision of food rations or food vouchers/stamps for vulnerable groups	MNSFR, Provincial Food Departments, National Income Support Programme	Number of people benefiting from targeted food distribution		
<b>Production of Critical Food Items Increased</b>	Production programmes for nutritionally important foods targeted at the poor and at women	Provincial Agriculture Departments, District Agriculture Officer	Number of beneficiaries		
<b>Nutritional Education Strengthened</b>	Information Campaigns on Nutrition	MNFSR, Ministry of Information, TV, Radio and print media	Number of information events		
	Strengthening nutritional education in schools, colleges	MSFR, Ministry of Education, Ministry of health, Provincial Departments of Education	Inclusion of nutrition in curricula		