State of Food Security in Pakistan and Policy Options

Shakeel Ahmad Ramay

Traditionally food security is measured through the lenses of availability, access and utilization. Three indicators are in line with the agreed definition of food security at global level and had been embedded in definition of food security by Food and Agriculture Organization (FAO) in 1996. Pakistan is also applying these indicators to measure the extent of food security in country. First organized attempt to measure the state of food security was made by SDPI in collaboration with World Food Program (WFP) in 2003. In 2013, SDPI and WFP joined hands with Ministry of Food Security and Research to measure food security and status of nutrition in the country. The ministry asked both SDPI and WFP to conduct a study at national level to know the present state of food security and nutrition in Pakistan.

In 2013, both the organizations produced a report on the present state of food security and nutrition. The report ranked the districts of Pakistan, Azad Jammu and Kashmir (AJK) and Federally Administered Tribal Areas (FATA) according to level of food security and also measured the state of nutrition. Results of the report were based on the findings of secondary and primary data. Secondary data was collected from the federal, provincial and district governments. A sample of 14,355 households was selected for primary data. Highlights of the report are discussed below and complete report will be published soon.

Food Availability

Food availability is basically determined by three elements, i.e. production, stocks and net trade in food items. Building on these elements food availability in Pakistan at national level is fairly good with unequal distribution across the regions of the country. Production of staple food has shown a positive trend in recent years. Similarly to availability production of food is also unequally distributed across the different areas of country. Production of cereal or crop based food is heavily concentrated in the Punjab and Sindh. Balochistan faces a severe problem in the production of crop based food. KP is also dependent on the production in the Punjab, Sindh or import for availability of food. On the other hand, Balochistan shows a positive trend in the production of animal based food.

National figures show the accumulative production or estimates of production, but it does not expose the real picture. Micro data or local level data tells us an entirely different story. Results from a study on food security show that majority of Pakistani districts are food insecure on the basis of availability chart (Figure-1). Figure shows that 82 districts of the country are extremely deficient in terms of availability. Accumulatively 103 districts are deficient in availability of food. Only 31 districts are surplus and 10 are sufficient in availability of food.

Apart from the Punjab, province-wise situation is alarming. The Punjab has 21 food surplus districts and there are only 9 districts, which are deficient. Balochistan, AJK, FATA and GB have largest number of food deficient districts. Balochistan has 22 districts, which are extremely food deficient and three districts with less deficiency. In AJK, 10 districts fall in the category of extremely deficient, and in GB, the number is 6. Dis-
Food access is a major area of concern for Pakistan. Poverty among other factors is a major contributor to limit the access to food. Poverty has increased in Pakistan during the last decade. World Bank report in 2013 indicated that about 60 per cent of population lives below the poverty line. Incidence of poverty increased in Pakistan due to multiple reasons, e.g. energy crisis, bad governance, stagnant industry, and war on terror.

Poverty also limit the choices of food and people have to consume less diversified food for sustenance. In Pakistan, food diversification is very narrow, especially for those belonging to low strata. The study shows that the poor have very limited choices of food and they have to rely on a fixed pattern. Moreover, fruits and meat have minimum consumption by the poor (Table-1).

Utilization of Food

Utilization or absorption of food basically depends on the drinking water and sanitation along with the female literacy rate and immunization of children. Water is necessary element for proper utilization/absorption of food. Quality of drinking water, availability of water for sanitation and sanitation facilities plays a critical role in determining the state of food security at individual level.

Indicators of quality water availability for drinking and sanitation, female literacy and immunization are worrying, which are clear from the poor state of utilization ranking.

Results from FATA are even more disturbing, where all districts fall in very low (2) to extremely low (11) category. Situation in Sindh is also very depressing where as many as 20 districts fall in very low (14) to extremely low (6) category. However situation in the Punjab is at the same time very interesting and very disturbing. In availability head, the study results show that 21 districts are food surplus and 6 districts have sufficient food for the population. But in access, only 4 come in the category of reasonable and 8 in moderately low. Rest of the districts come in the categories of low (14), very low (9) and extremely low (1).

Results from the Punjab strengthen the argument that availability alone is not sufficient condition for food security. Availability is necessary but cannot ensure the food security alone. Results of report also strengthen the argument that production does not represent the true picture of actual state of food security. Moreover, production is mostly dominant by few big land holders which mainly contribute in the production and small farmers only produce for domestic.

State of food access is not different from food diversity, rather it is more depressing. Only 15 districts have acceptable to moderately low access to food and rest of districts fall under the categories of extremely low (54), very low (46) and low (29). Balochistan is the worst hit province with 28 districts fall under the category of extremely low access to food. Only one district fall in moderately low category and no district comes under the category of reasonable.

\[\text{http://www.brecorder.com/money-a-banking/198/1187220/}\]
Water availability is major issue in Pakistan and it will become more complicated in future due to multiple factors e.g. climate change, population outburst, weak infrastructure etc. Results for female literacy are seriously alarming. Majority of female across the country are very poorly educated or have no education at all (figure-).

Status of Nutrition
Like the indicators of food security, state of nutrition is also very gloomy. Majority of population is facing the serious problem in deficiency of micronutrients (figure-).

Owing to this deficiency a large population is facing problem of wasting, stunting and very severe wasting. Figure below explains the situation of these indicators.

Overall Food Security
On the basis of these indicators state of food security was derived. According to the result of study about 58 percent population of country is food insecure. However, the interesting fact is that extremely food insecure population decreased from 2009 level (22.4 %) in 2013 (17.4 %). But the overall extent of food insecurity increased from 48.6 percent in 2009 to 58 percent in 2013 (figure-).

Overall state of food insecurity is in-line with the individual indicators of food security (availability, access, utilization). Results shows that only 27.1 percent population comes under the category of adequate and rest of population come under the categories of borderline (14.5 %), moderate deficit (25.7 %), very deficit (15.2 %) and severely deficit (17.4 %). Baluchistan, Sindh, KPK, FATA and AJK are the most food insecure regions.

Policy Recommendations
In order to improve the state of food security in Pakistan we suggest following recommendations on
the basis of findings of study².

**Agriculture and livestock**

1. Broad-based agriculture and rural development strategies and actions are needed to achieve food security in Pakistan. These policies and strategies – backed by strong legislation - must ensure the needs of small-scale farmers including access to farm technology and machinery and availability of credit.

2. Put in place mechanisms to address the chronic constraints of domestic food production - low agricultural productivity and yields, pre and post-harvest losses, lack of storage facilities – and enhance agricultural growth and food diversification for poor farmers that cannot afford agricultural inputs.

3. An integrated decision-making system to improve agricultural output efficiency to approve new interventions in cropping patterns, coordination across agencies that addresses the gaps in public and private sector coordination.

4. Agricultural production and infrastructure are affected by natural climate variability and are likely to be compromised in the future by climate change through the higher incidence of drought and erratic rainfall. Investment in research and development to understand climate change factors, their impacts and subsequent vulnerabilities will support the development of risk reduction strategies and disaster preparedness to mitigate spikes in food insecurity.

5. Institute an index-based support mechanism, with a focus on small farmers, for severe climatic events or price shocks that impact heavily on food production and household resilience for food security.

6. Careful prevention of pre and post-harvest losses, food storage capacity

7. Revitalize the research/extension/farmer relationship: The vital link between agricultural research institutions, farmer communities and extension workers is in need of immediate attention. The innovative techniques/technologies or best practices for climate change adaptation, developed by scientists/researcher, should be made accessible to farmers and communities with high incidence of food insecurity.

8. Framework for improved crop reporting/data collection, by area, for policy development and interventions.

**Improving access and utilization**

1. Protecting and promoting the realization of the right to access adequate food as well as guarantee the mechanisms for its universal and equitable access.

2. Continued research into food access trends and consumption patterns (nutritional needs) to re-shape public health interventions.

3. Foster public-private partnerships for service delivery; inclusion of academia and policy institutes in research and development.

4. Informal social safety such remittances to be backed by public policies to make it easier to create new programme that would generate savings alongside targeted investments in areas that increase food affordability and overall wellbeing.

5. Local government has a critical role in improving access and affordability by ensuring effective food production strategies, management, consumption and its distribution system.

6. To improve local market efficiency, local governments can work to mitigate risks and stresses in demand and supply chain.

7. To improve access and utilization, tackle the issue holistically - widespread poverty, political instability, unemployment, rising food prices, regulations and implementation strategies.

8. Targeted investment in improving agricultural infrastructure and land rehabilitation.

**Social safety nets and management of malnutrition**

1. To tackle weak institutional structures and implementation procedures for social security nets there need to be assurances of equitable distribution and sufficient coverage in the identified food insecure parts of the country.

2. Efforts related to formal social safety nets include dynamic mapping of the most vulnerable population, their priority needs, key interven-
tion tools and sustainable delivery of livelihood options.

3. Programmes and policies to assist and provide safety nets to those areas most vulnerable to climatic events.

4. Invest in agricultural research and innovation to find better, context-relevant solutions to undernutrition using best practices from other countries as a model, including looking towards developing more fortified and more disaster-resilient crops.

**Food security monitoring**

1. Research-based innovative approaches and systems for food monitoring that enables an efficient coordinated response to food shortages and spikes in food insecurity and undernutrition that may arise in the future.

2. Early warning systems that alert decision-makers when planting has begun late, or there are dry or excessive wet spells in the middle of a season, for example, and ensuring these systems are linked to reliable resources that would enable the government at the national and provincial levels to take action when necessary. These systems could prevent households that are often forced to adopt short-term survival strategies in the presence of a shock (food price increases, natural disaster, heavy or erratic rainfall or drought), from adopting negative coping mechanisms that aggravate food insecurity like selling productive assets or reducing food consumption which can undermine their future resilience and reverse development achievements.

3. Better long and short-term planning with an integrated coordination mechanism among national, provincial and district/local stakeholders, backed by technical and scientific expertise and capacity building of food departments.

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**Review of Agriculture and Food Security Policy**

Shakeel Ahmad Ramay

The government has presented its first ever agriculture and food security policy in cabinet. Keeping in mind the role of Ministry of Agriculture Food and Livestock, it is a good initiative by the newly-created Ministry of Food Security and Research, which despite its all limitations, is striving hard to get the approval of the cabinet. The ministry has engaged civil society organizations like SDPI, and UN agencies, including WFP, FAO, UNICEF as well as relevant government ministries and departments by inviting comments from them.

The policy has comprehensively summarized the agriculture status and presented the different options for the development of agriculture sector. It starts with the major problems of agriculture sector, pointing out that agriculture sector has been neglected in past and could not catch the necessary attention. It lacks investment, especially from the private sector. It also lacks technical innovation.. Input availability and supply also played a negative role. Water management was, and still is, in poor state. The government did not invested much in water, and the country is still without a water policy for rationalizing the water use across different sectors. The policy also highlighted the role and importance of supply chain.

On the basis these identified problems, the policy suggested a set of interventions to improve the status of sector. It calls for an increase in public and private investment. The government must have to improve the water management at federal, provincial and local levies. The policy recommends the proper functioning of input and output markets. There should also be an improvement in innovation and dissemination of new technologies. Sustainable agriculture development should be on top of list. There is a long list of interventions, e.g. insect pest management (IPM), enhance budgetary support, improvement in extension services etc. On top of that policy called for reforms in governance structure to tackle the problems in agriculture sector.

Despite such an extensive exercise, the policy is deficient in a number of areas. First of all, it mentioned the poor performance of the sector during the last decade, but did not talk about the droughts and floods. Climate smart agriculture was mentioned but there were no policy guidelines for achieving it. Gender dimension
of food security is missing besides the fact that women play a very critical role in ensuring food security at household and in production process of food. There is again much emphasis on the wheat alone.

On the other hand food security is entirely missing in the policy. It talks about the food security situation in Pakistan and stresses the need to improve it. However, the policy fails to bring in to discussion three fundamental elements of food security, e.g. availability, access and utilization. These indicators are essential to measure the state of food security. These indicators have shown a negative trend in the country, but policy is silent about the indicators. There is no policy direction, guideline or programme to tackle them. Therefore, the biggest criticism on the policy is that it had ignored food security and focused only on agriculture.

Agriculture is no more subject of federal government after devolution; it is beyond the mandate of newly-created ministry. Ministry of Food Security and Research was created to ensure food security in the country. The primary job of the ministry was to facilitate and provide a conducive environment for the achievement of food security. So, it was mandatory that policy must provide a wider outline and policy options for all indicators of food security. However, the policy failed to provide any guidelines for access, employment, income etc. Nutrition component of food security is also very weak. Furthermore, policy is very weak in creating ownership among all the relevant ministries and departments. Inviting only comments does not serve the purpose.

Policy in the present state will not serve the purpose, rather it will create friction between federal and provincial governments. Therefore, there is a need to revise the policy and revision should be done through the lens of food security. For that purpose our suggestions are as follows:

1. Policy should be devised around the three pillars of food security
   • Availability; it includes production (agriculture), net trade and aid.
   • Access: it includes, employment, income etc.
   • Utilization; water and sanitation, literacy etc.

2. Nutrition should be given more importance, and there should be policy guidelines for the improvement of nutrition.

3. Ownership should be created among all actors of food security.
   • In each area of food security, the leading ministry or institution should be identified and the leading role should be assigned to that ministry or institution.
   • There should be clear policy guidelines for each leading ministry or institution.
   • Ministry of Food Security and Research should present itself only as a facilitator

4. Research wing should be strengthened further.
   • Capability and capacity building of research wings
   • Inclusion of modern techniques of research
   • Expansion of research to all areas of food security rather than only focusing on agriculture
   • Strong coordination mechanisms among all research activities

5. There is a need to rethink the governance structure in the light of 18th amendment.

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Revisiting Agriculture and Food Security Policy: Potential of Agriculture Value Addition for Pakistan?

Abdul Rahman

Pakistan’s economic engine is fueled by agriculture and its allied activities. Roughly contributing its share in harboring 43% workforce of the country, it also has substantial share of 21% in GDP\(^1\). Similarly, 66% population depends on agriculture sector for their livelihoods\(^2\). Besides, people are bound to live a very poor and marginalized living. This is because agriculture sector is always the foster child of every government, which manipulate it according to the desires without considering the consequences. On the other hand, the sector is also abused by a few feudal lords, who are the main cause of failure in the implantation of governmental policies\(^3\).
Background
Every government in Pakistan has paid attention to this sector by devising and implementing policies, but the results are not fruitful. The importance of policy making cannot be denied; however, for successful functioning of a policy, all stakeholders should be on board in a sync manner while keeping in view the global parameters.

The new Agriculture and Food Security Policy drafted by the Ministry of Food Security and Research (MNFSR) in collaboration with PARC, NARC and FAO has two components, i.e. agriculture and food security. But, the policy is silent on many issues related to food security; rather its primary focus is on agriculture development. So, before looking at the food security component, it would be wise to revisit the results of previous policies related to the current policy.

As far as the agriculture growth of Pakistan is concerned, it hasn’t showed satisfactory results despite the attention that had been paid to it.

### Agriculture Growth of Pakistan

<table>
<thead>
<tr>
<th>Years</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960’s</td>
<td>5.1</td>
</tr>
<tr>
<td>1970’s</td>
<td>2.4</td>
</tr>
<tr>
<td>1980’s</td>
<td>5.4</td>
</tr>
<tr>
<td>1990’s</td>
<td>4.4</td>
</tr>
<tr>
<td>2000’s</td>
<td>3.2</td>
</tr>
<tr>
<td>2010’s</td>
<td>3.0</td>
</tr>
</tbody>
</table>

These figures clearly depicts that the outcome of the previous policies is not up to the mark.

The Missing Links
The new drafted policy has uniqueness in terms of its ‘food security’ component, as no previous government has ever tried to pay attention to this sector, which is appreciating. However, the issue of food security is not addressed accordingly. The policy draft is merely the collection of facts and figures ending with a wishlist in the form of objectives regarding the policy. One can consider this document as an agriculture policy however it is not correct to term it as a food security policy.

Before deliberating indepth on the issue, it is important to understand what the Food Security is? In broader terms, food security has four pillars on which it is based. These include, food availability, physical access to food, food absorption and food sustainability. If any of these pillars are missing in crafting a food security policy, there will be legitimate objections on that policy.

In the current draft of the policy, food security is linked with an overall increase in production of agriculture sector. However, this should not be the case, as production is only one component of food security, i.e. food availability. The other two basic components that are food access and utilization and to a larger extent food sustainability are not addressed in the current draft. Without this, one cannot cover the aspect of food security. In fact, the earlier policy, ‘Food Security and Nutrition Policy’ had addressed many of the shortcomings of the current policy quite efficiently. For example, the current draft of the policy failed to address the household food security and nutrition, thus giving a gesture that the policy is not designed in a holistic manner.

Moreover, the draft policy not only lacks a proper analytical framework but also an accurate factual analysis of the situation. Similarly, supply chain problem is a major issue to get full benefit from the production. It is another problem that is faced by agriculture sector of Pakistan, and no measures have been suggested to overcome this issue.

Wheat crop is again placed as the center of focus, while ignoring other cash crops like rice and sugar-cane. In addition, the policy lacks clear mechanism and an effective manner to establish linkages among research, academia and market with special focus to make research market need based.

### Agriculture Value Addition
Agriculture value addition is one of the concepts that are gaining attention of the masses throughout the world. Manufacturing and processing of primary products of agriculture is value addition. This not
only brings additional revenues but also helps the poor farming community to gain maximum benefit from their produce\(^8\). Interestingly, the estimated size of global processed food industry is around US $3.5 trillion. This roughly accounts for three fourth of the global food sales\(^9\).

The current draft of policy has emphasized the importance of agriculture value addition, however, a strong base regarding the ways to achieve this goal is missing. This is actually the dilemma of that policy that the draft document of policy is filled with the issues related to agriculture, but the pathways to solve these issues are missing.

Pakistan has no doubt great potential for agriculture value addition. It can earn valuable foreign exchange through this sub-sector of agriculture. However, the government supervision and support is somewhat lacking. Currently, there are a number of food processing units engaged in various types of food processing in Pakistan.

<table>
<thead>
<tr>
<th>Type of processing Industry</th>
<th>Units</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and Vegetables</td>
<td>155</td>
<td>23,500</td>
</tr>
<tr>
<td>Cereal based</td>
<td>1246</td>
<td>45,000</td>
</tr>
<tr>
<td>Edible oil</td>
<td>321</td>
<td>34,000</td>
</tr>
<tr>
<td>Sugar sector</td>
<td>427</td>
<td>25,000</td>
</tr>
<tr>
<td>Livestock</td>
<td>68</td>
<td>28,500</td>
</tr>
<tr>
<td>Total</td>
<td>1989</td>
<td>154,250</td>
</tr>
</tbody>
</table>

\(^{10}\)

The table depicts that these units have the capacity to provide employment to the unemployed portion of the country while providing better livelihood than simple agricultural practices. An increase in the number of these processing units can surely earn better return.

Currently, there are various problems that are faced by agriculture value addition of Pakistan on which the newly-drafted policy is silent. These include insufficient and fluctuating supply of raw materials, inadequate safety standards, and poor safety measure for the labour at workplace, adulterer food products and inadequate packaging. In addition, poor financial support from the commercial banks and government, and lack of innovation are some of the biggest constraints faced by this subsector\(^{21}\). Despite all these hindrances, Pakistan is ranked 18th in annual growth rate for agriculture value added\(^{12}\). Majority of this achievement is due to the investment by the private sector.

Furthermore, Pakistan does have prospects in the export of halal food export. This is one of the popular international businesses that is expanding rapidly and the demand of it is also increasing in the western countries. This form of food is not only popular among the Muslims of the world but also among the non-Muslims. This is mainly due to the benefits of this food that are now widely accepted\(^{13}\). Holding the eighth largest herd of livestock, Pakistan is not harnessing the benefits due to lack of government interest. Serious policy measures are needed to explore this potential.

Similarly, due to mishandling at the post-harvest level, Pakistan is perhaps one of the countries in the world, which is least efficient user of its livestock resources because of old and traditional home-based slaughtering mechanism making inefficient use of the by-products. Moving towards the dairy sector, only 4.5% of milk is processed. This is a worse situation especially in the scenario where Pakistan is enjoying the position of 5th largest milk producer. Same is the case with poultry sector, which is offering jobs to more than 11.5 million people and still it is disorganized sector and not earning according to its potential\(^{14}\).

**Way Forward**

Regarding the shortcomings that are visible in the newly-drafted policy, there are certain measures that should be taken to make it more resilient and effective. The MNFSR was created after the 18th amendment with the vision to combat the food security situation in the country. It should focus more on food security component rather than agriculture. It would be fruitful to have separate agriculture and food security policy. This will allow equal identification and consideration to each aspect of the both.

The government has presented this policy with weak evidences while entirely focusing on agriculture. In fact the food security policy is fabricated with the lens of agriculture, so major changes in the policy are the demand of time. It will not be wrong to say that food security policy is one of the critical and most important policies in the current scenario. It demands serious attention of the power corridors of the country. Moreover, once the policy devising phase is over successfully, the government should take on board all the potential stakeholders, including the civil society organizations, think tanks and academia for its transparent implementation.

The government should pay attention to the utili-
zation and access part of food security. This could be achieved by introducing technological innovation in the old and traditional farming especially at post-harvesting level and value addition. Value addition will not only secure the food availability, but also pay off the farmers well to make their livelihoods better. This, in return, will aid in securing food access and food utilization component of food security.

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Future Dimensions of Food Security: Water-Food and Energy Nexus

Shakeel Ahmad Ramay

The government of Pakistan is engaged in formulation of its first ever Agriculture and Food Security Policy. Process of policy development started with the launch of “Zero Hunger Program” and “Food Security and Nutrition Analysis of Pakistan”. The government is striving hard to develop a comprehensive and future-oriented policy to cater to the present and future food security challenges. A number of stakeholders have been engaged in this process through consultations, seminars and formal correspondence. However, an in-depth review reveals that there are certain areas, which are not covered fully, e.g. climate change, local governance, gender etc. The areas which are totally missing include water, food and energy nexus.

Water, food and energy nexus is extensively debated and researched area at global level. Nexus attracted the attention due to Water-food and energy inter-linkages and influence of sectors on each other in a number of ways. However, in this article, we will focus on the food security and relevance of nexus for future decision making and actions.

Food security of any country is heavily dependent on water and energy. Agriculture is a major user of water across the world and about 70 per cent of available water is being used in agriculture followed by industry and domestic use (Table-1).

<table>
<thead>
<tr>
<th>Sector</th>
<th>Water Use (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>70</td>
</tr>
<tr>
<td>Industry</td>
<td>20</td>
</tr>
<tr>
<td>Domestic</td>
<td>10</td>
</tr>
</tbody>
</table>

In Pakistan, about 93 per cent of available water is being used in agriculture. Therefore, production of food is entirely dependent on quality and quantity of water. Similary, energy is also very important in production, processing and transport of food. Bruce Lankford in 2012 pointed out that energy and water play a crucial role in production, processing and transport of food. In modern agriculture, energy is required to prepare land, for sowing, harvesting and storage. Moreover, energy is also required in production of chemical inputs like fertilizer, pesticides and insecticides.

At the same time, water and energy play a crucial role in ensuring household and individual food security. Quality water is required for the proper absorption and utilization of food for a healthy body. Energy is required to ensure the time availability of food through transportation and in processing food. Energy is also required to cook the food.
The above discussion shows the importance of water and energy, more precisely the interdependence/inter-linkages of food, water and energy. However, the policy is silent about the energy needs mentioning poorly about water. Literature review reveals that the security of food, water and energy will be the major area of concern in future, both individually and as a nexus in the context of scarcity, climate change, bad governance, unequal distribution of resources and conflict over these resources.

**Situation Analysis—Global**

Water is a key issue in the debate on food security as well as a fundamental element from production to utilization of food. But, the state of water availability and future projections are not encouraging rather alarming. One third of the world population is living in water stressed countries or they have to compromise on the quality of water. One in nine faces problem in accessing good quality water and one in third does not enjoy good sanitation conditions. However, distribution of water is not equitable across the world and ten countries enjoy the 60 percent of available water. Now, think about the future projected population, there would be increase in demand of water for food production, energy production and processing etc.

It is projected that there would be 19 percent increase in the demand of water till 2050. International Energy Association suggested that the consumption of water would be increased substantially in 2050 from the current level (Table-2) consumption of water in energy sector.

<table>
<thead>
<tr>
<th>Regions/sub regions/countries</th>
<th>Number of people undernourished (millions)</th>
<th>Change so far (%)</th>
</tr>
</thead>
</table>

Despite the tremendous efforts of different countries, e.g. China and Brazil, and international organizations, the incident of food insecurity decreased, but still it is high. Moreover, food is unequally distributed among countries and people (Table-4).

More energy would be required to produce and transport agriculture inputs and food to meet the increasing demand of food. Urbanization will further give rise to demand of energy.

Simultaneously, the status of food security is not satisfactory across the world (table-3). According to FAO report on state of food insecurity about 842 million people are food insecure. Situation is especially alarming for developing and poor countries. Only 15.7 million people reside in developed countries while rest of the food insecure belongs to developing and poor ones. And South Asia is one of the main areas of food insecure people.

Demand of energy for food production will also increase and presently agriculture accounts for 30 percent of energy consumption (IEA, 2013, WEF, 2011).
plicate the situation. Population will increase and product- 
vitucity and production will decrease due to different 
actors, e.g. climate change etc. Demand of food (cereal 
and meat) will increase by 42 and 50 per cent respec-
tively. This increase in demand will compel farmers to 
increase production by 70-100 per cent by 2050 . UNEP 
identified main actors of this sharp increase in demand 
would be population, higher income, emerging middle 
class and increase in demand in emerging economies . 

Situation would be very complex and difficult to handle, especially in developing and poor countries.

**Situation Analysis - Pakistan**

The global picture of food security, water security 
and energy security shows that the world would be fac-
ing problems in tackling this gigantic task and Pakistan 
will not be the exception. Pakistan is a developing 
country and already located in food insecure, water stressed 
and energy scarce region. Problem for Pakistan would 
be multifaceted. According to SDPI and WFP report on 
food insecurity, about 48 per cent population is food in-
secure, and floods in 2010, 2011, and 2012 further in-
creased the number of food insecure people (Graph-1).

<table>
<thead>
<tr>
<th>Province</th>
<th>% Food Insecure</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPK</td>
<td>56.2</td>
</tr>
<tr>
<td>Punjab</td>
<td>38.5</td>
</tr>
<tr>
<td>Sindh</td>
<td>44.3</td>
</tr>
<tr>
<td>Balochistan</td>
<td>61.2</td>
</tr>
<tr>
<td>FATA</td>
<td>67.7</td>
</tr>
<tr>
<td>Pak Administration Kashmir</td>
<td>46.9</td>
</tr>
<tr>
<td>Gilgit Baltistan</td>
<td>52.4</td>
</tr>
<tr>
<td>Islamabad</td>
<td>23.6</td>
</tr>
</tbody>
</table>

Similarly, the status and projections of water are 
very scary. Per capita availability of water has been 
decreased from 5600 cubic meter to 1000 cubic meter. 
Future projections from IPCC clearly show that water 
would be a major problem for Pakistan in the coming 
years. An energy crisis is another area, which impacts 
the food security in Pakistan. As we have witnessed 
that hundreds of thousands of people have been facing 
unemployment for the last many recent years. It im-

pacts the purchasing power of people along with oth-
er indicators of food security. Owing to this complex 
situation, Pakistan is facing multifaceted problems. On 
the one hand, Pakistan will have to feed ever increasing 
population and on other there would be sharp de-
crease in production due to climate change and scarcity 
of water. Pakistan will also have to import the energy 
resources to supplement production, processing and 
transportation of food, which will increase the import 
bill and may deplete the government capacity to fund 

social safety programmes for food security.

**Conclusion**

The above scenario shows that the food, water and 
energy sectors are closely related rather interlinked. Fur-
thermore, food security is heavily dependent on water 
and energy. Water is essential element for production, 
processing, cooking and absorption of food. Energy is 
required not only for food production and transport but 
also indirectly required to enhance the purchase power 
through employment in industry and other sectors. 
Therefore, we can conclude that decision in one sector 
impact the other. This scenario demands an integrated 
policy response rather than decisions in haste.

However, the recent policy draft of Ministry of Food 
Security and Research is completely silent about this. 
The ministry should also include this emerging dimen-
sion of food security. It can benefit from the research, 
which has already been conducted by different institu-
tes and forums, e.g. World Bank, SDPI, GIZ, Bonn 
Forum, SEI, etc. Stockholm Environment Institute pro-
posed the following framework for nexus (Figure-1).
International Institute for Sustainable Development suggested a more comprehensive framework to deal with nexus (Figure-).

Government can benefit from these frameworks which will help government to devise a policy which also help to tackle the future challenges to food security.