ANALYSIS OF HOUSEHOLD FOOD SECURITY CONCERNS AND COPING STRATEGIES OF SMALL FARMERS IN NORTHWESTERN HIGHLANDS OF PAKISTAN

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INTRODUCTION

Food insecurity is turning out to be one of the worst crises of world in future. Developing countries are especially considered vulnerable to be hit most severely by this impending danger. Resource scarce regions of Pakistan are also included in the list of marginalized areas where population is not able to manage its food by herself. The present study was designed to analyze the state of household food security concerns and identify managing strategies for dealing with shortage of food patterns in Northern Pakistan. The research was based upon a survey of randomly selected two districts. Both qualitative and quantitative research methods were used for data collection. The results indicated that prices of food items were very high. It also delineated that lack of irrigational water; limited market access, and high cost of fertilizers were leading production related constraints. As a resort to these constraints and due to low output from the food crops there was found a shift from subsistence to cash seeking cropping patterns of the growers. This increase in income was perceived as a mean to ensure household food security. Furthermore, at household level the respondents expressed to reduce their expenses on the agricultural inputs in future.

Keywords: Household food security, food security concerns, coping strategies, small farmers, Northern Pakistan

Food insecurity is turning out to be one of the worst crises of world in future. Developing countries are especially considered vulnerable to be hit most severely by this impending danger. Resource scarce regions of Pakistan are also included in the list of marginalized areas where population is not able to manage its food by herself. The present study was designed to analyze the state of household food security concerns and identify managing strategies for dealing with shortage of food patterns in Northern Pakistan. The research was based upon a survey of randomly selected two districts. Both qualitative and quantitative research methods were used for data collection. The results indicated that prices of food items were very high. It also delineated that lack of irrigational water; limited market access, and high cost of fertilizers were leading production related constraints. As a resort to these constraints and due to low output from the food crops there was found a shift from subsistence to cash seeking cropping patterns of the growers. This increase in income was perceived as a mean to ensure household food security. Furthermore, at household level the respondents expressed to reduce their expenses on the agricultural inputs in future.
contrarily the resources are not found in access. As Pakistan is included in the queue of underdeveloped countries so keeping in view the generalized results of Pelletier (2005) for such countries it can be suggested that economic alternatives (as shifting from costly to less costly food) and high production can be used as coping strategies in this regard especially in Northern Pakistan where severe resource scarcity is evident (Hussain, 2003). The same reason has made them to adopt the trend of going for daily wages for increasing their monthly incomes (Shahbaz, 2009). Some researchers argued that the only solution hidden behind the adoption of consumption related strategies, in which dietary change was one of the most important aspects, was evident in attitude of household managers in the form of shifting to less expensive food. In this way the preferred food is compromised and altered (Suleri and Haq, 2009; Oldewage-Theron et al., 2006; Maxwell et al., 1999). Another researcher found that budgetary/ culinary skills and food donations could solve the problem in this regard (Hamelin et al., 2008). Low income households also resort to get loans as they get some emergent situation as price hikes of food, more than that they also have to reduce their nutritional intake in face of this detrimental situation. The expenditures on food for such households may also be increased as they would have to allocate a huge chunk of their budget to the food items. Household welfare is worst affected if the household spent a large amount of their income on staple foods (Zezza et al., 2009) in the presence of income shocks that also affected the household food security (Mjonono et al., 2009). In short, a household is having different food availability/ accessibility and coping strategies related concerns which need to be analyzed in detail.

MATERIALS AND METHODS

The research was carried out in the Khyber Pakhtunkhwa (KPK) Province of Pakistan in which cross-sectional survey was employed. For the data collection two mountainous districts Mansehra and Battagram were selected. One Tehsil was selected randomly from each district. The data were collected from these two Tehsils by selecting two villages from each Tehsil through convenient sampling method. Fifteen respondents were taken from each village, thus making a total size of 60. Small farmers/landholders (who were also the head of their households and male) were selected through Snow Ball Sampling Technique (Trochim, 2006). Initially the availability of the respondents was found to be a little difficult but later on the cooperation provided by the farmers helped a lot to complete the data collection process. The research was a triangulation in which combination of both qualitative and quantitative techniques was followed. On the basis of qualitative findings, a well-structured quantitative instrument was developed which was further pre-tested for its workability and stability. The data were collected through personal interviews and were analyzed by using Statistical Package for Social Sciences (SPSS).

RESULTS AND DISCUSSION

Household food security concerns: The food security of a household is directly or indirectly affected by different factors, these factors influence the availability, accessibility, consumption and stability of food at different levels. The results indicated that the people of study area were having lot of problems pertaining to the food availability and access. The respondents were asked to answer certain questions regarding food availability and access and their responses are given in Table 1.

The data presented in Table 1 showed that more than 50% of the participants of this study responded ‘yes’ to 6 out of 10 questions which means that they experienced food insecurity in majority. High prices of food were one of the leading reasons that made them think of being food insecure. Almost all (98%) of the respondents agreed that the surging prices of eatables were a greater issue for them. It was very sad to note that even the producers of food were disturbed by price hikes and were forced to purchase eatables on an

Table 1. Perceptions regarding food availability/ accessibility and coping strategies

<table>
<thead>
<tr>
<th>During last month did you ever</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>feel prices of food items as high</td>
<td>59</td>
<td>98</td>
<td>01</td>
</tr>
<tr>
<td>worry about getting food</td>
<td>56</td>
<td>93</td>
<td>04</td>
</tr>
<tr>
<td>shift to low priced food</td>
<td>51</td>
<td>85</td>
<td>09</td>
</tr>
<tr>
<td>cut the size of your meal</td>
<td>49</td>
<td>81</td>
<td>11</td>
</tr>
<tr>
<td>observe preference for meal distribution</td>
<td>42</td>
<td>70</td>
<td>18</td>
</tr>
<tr>
<td>borrow to buy food</td>
<td>35</td>
<td>58</td>
<td>25</td>
</tr>
<tr>
<td>skip at least one meal in a day</td>
<td>20</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>reduce diet of children</td>
<td>03</td>
<td>05</td>
<td>57</td>
</tr>
<tr>
<td>remain hungry for whole day</td>
<td>---</td>
<td>---</td>
<td>60</td>
</tr>
<tr>
<td>skip children meal</td>
<td>---</td>
<td>---</td>
<td>60</td>
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</tbody>
</table>
unaffordable cost. Producer may be of only one or two commodities but have to purchase various food items. In a very compulsive situation they changed their trends of frequently eating expensive diet to less expensive diet but still the preferred quantity of food items was out of range of the residents. Furthermore, a vast majority of the respondents (81%) clearly described their coping strategy of cutting short daily nutritional intake of even less expensive diet which was lentils and vegetables (a relatively less expensive commodity). Again with extreme nutritional adjustments the people were not capable of managing the preferred quantity of their nutritional intake which revealed the severity of the issue over there.

The qualitative information received during interviews supported the quantitative results. It was found that the access to balanced and preferred diet was rather difficult than indicated by the statistics, provided in the Table 1. They were having a plethora of difficulties in this regard. One of the leading reasons for the in-sufficiency was high prices of food commodities, as evident from the sampled response; 

“….despite the fact that I am living out of my joint family and my family size is only 4 which is relatively low and I intentionally did this for the sake of reducing my expenses which earlier I thought that were because of high number of family members. But I am completely unable to give balanced nutrition to my family even afterwards. Due to rising inflation in the price of food items we are taking cheap diet. We have already changed our trends of eating lentils and vegetables. But what is happening now-a-days it shows extremely bitter realities that we even are not able to afford the less expensive diet in proper amount. The prices of lentils and vegetables are continuously going up. We have to cut short the amount of our daily intake of lentils and vegetables. It is all because of the rising prices of food items that are becoming out of the monetary ranges of the man in the street”.

Qualitative data revealed that many people have started to avert the trend of living in joint family system and reduced the number of people depending on one person as a resort to food insecurity but still they were not satisfied with their available diet. Although people living in joint family system still composed the larger portion of the quantitative data but the comments given above were clearly showing the apprehensions of people. That was why the suggestion came in front that prices must be kept under control and the people must be given relief in this regard;

“Every layperson would be automatically benefitted if the government would bring the prices of all commodities of common use within their available financial capacity”.

Food Production constraints: The food growers are facing serious problems as far as the production of food is concerned. Among these technological, environmental, socio-economic and political issues are considered most important and are denoted as constraints to food production. Especially food producers who were directly related with agricultural activities were not very much happy with their plight rather they were having only a minor know-how about the general issues. It indicated their lack of participation in the mainstream decision making. The factors that were hampering the production of their crops were many in the area. Among these factors those having the majority response and few others are compiled in Table 2.

Lack of irrigation water was considered as the biggest bottle neck in production followed by limited access to market. Roads from their homes/ fields to the market were not good so the route to the market was not at all smooth and clear. The growers had to struggle for reaching from home to market especially from the marginalized mountainous areas. Access related factors had some depth in it, it stands that it was not very easy to understand these issues. It was literally not taken only for physical access to market but qualitative data revealed that there were found serious access related problems originating from ethnic exclusion. Local people having National Identity Card had more access to the indigenous as well as distant markets whereas foreign settlers or Afghan migrants had limited approach in this regard just because they did not have local registration proof. The third most important hurdle regarding crops production was high cost of fertilizers, again a huge majority over eighty percent (82%) mentioned this fact responsible for their low crop output. The most important production related issue that was panicking the respondents was supposed to be scarcity of irrigation water. Water was not at all sufficient for local

<table>
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<th>Table 2. Food production constraints and related facts</th>
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<tbody>
<tr>
<td><strong>Production constraints</strong></td>
</tr>
<tr>
<td>Lack of irrigation water</td>
</tr>
<tr>
<td>Limited market access</td>
</tr>
<tr>
<td>High cost of fertilizers</td>
</tr>
<tr>
<td>Unavailability of credits</td>
</tr>
<tr>
<td>Low awareness regarding crop production</td>
</tr>
<tr>
<td>Unavailability of high quality seed</td>
</tr>
<tr>
<td>Lack of storage facilities for crops</td>
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</table>
growers as one of the respondents gave the comments
“...water availability is a bigger issue in the area and we
don’t find proper amount of irrigation water. It does not
stand that water is not present throughout the season but
most of the water channels are not lined flash flows of water
during rainy seasons or floods cause’s serious damages
every year. Sometimes, mud also blocks the way of water in
the rainy seasons by accumulating in the water channels and
hinders the smooth flow of water. Especially after
earthquake of 2005; all the channels went on to dry and
underground water level lowered, it has gone down from
100 feet to 120 feet. We are in dire need of bricked water
channels so that the free flow of water may not be
obstructed. At present, clean drinking water is also rarely
available as people are adding the chemicals into the
streams of water”.

It was quite evident from the comments of one of the small
farmers;
“...I work on the land hired from one of the local landowner
and pay him rent of his land (6 canals). The income earned
through this way is very little. It provides us (me and my
family) food but only for 4 month and for rest of the year, we
only know that we have to eat food with the pattern of taking
wheat (our preferred food) on an alternate day”.

Coping Strategies: All the strategies that are pursued by the
households when it is confronted with the unanticipated
failure in livelihood sustainability may be termed as coping
strategies. These strategies are different and depend on the
existing assets of the household which determine the resilence of that household against shocks. The same
intention actuated the inquiry of this study. The head of
households (whose mean family size=8 & Standard
Deviation=1.462) were also asked regarding their preferred
expenditures in the presence of other expenditures and
inquired that which household item they could really skip if
there would be any chance of sudden increase in the prices
of food items. They gave varied responses against different
factors which are combined in the below given Table 3.

The data given in the Table 3 clearly indicate that almost all
of the respondents (97%) showed the possibility of reduction
in purchasing/ renting agricultural items/ inputs in face of
sudden rise in the food items. The compromise of
respondents on the expenditures that were necessary for
production, in face of price hike/shocks was not encouraging
aspect for food security situation in the area followed by
clothing and education (where 43% of the farmers were
illiterate). Another important finding that could be derived
from the data was, they (respondents) did not have sufficient
savings to buy their production essentials in the presence of
mostly upward fluctuating prices. A very appealing result
was that the respondents were not ready to compromise on
the high expenditures incurred upon their marriages and
social events as a large majority negated that they would
ever ever be able to reduce their spending on marriages or
socialization/ social events. These results in somehow or the
other matched with the findings of the researchers (Heyer,
2006; Krishna, 2004) who indicated that the marriage
expenditures, especially for the daughter's marriages, were
very high.

Shift in cropping pattern: Cropping pattern is most
popularly known as sequence and arrangement of crops and
fallow land in the given time and space. This sequence is
dependent upon different characteristics of the area as
dependent upon different geographic, climatic and soil related. The cultivation trends of
the area had been under some transition and this transition
was moving from cereals and few of cash crops to the
vegetables. People had realized that the vegetables were
more productive by spending less expenses incurred on it,
with minimum utilization period for their small pieces of
land so they started vegetable growing. These findings are in
agreement with that of Adil et al. (2007) who considered
vegetable growing a more suitable trend with high economic
returns for the small landholders.

The data given in Table 4 indicated that most of the farmers
were growing vegetables on their field (Mean
landholding=11 kanals & Standard Deviation=1.807). It was
not always so, as the qualitative data revealed that they
preferred the cultivation of cereals in the past but with the
entry of some Afghans who focused more on vegetable
growing and set new trends in that area. Some of the
qualitative responses showed the same fact as “...we are
especially indebted to the Afghan immigrants who made us
learn about growing of short duration crops i.e. vegetables.
Now we are taking three crops in a year previously we grew
crops and waited for its harvesting period, this year I would
grow main crops for only my food and on a very small area,”

| Table 3. Coping strategies in case of rising food price/ expenditures |
|-----------------------|----------------|-----------------|-----------------|----------------|
| In case of increase in food prices you reduce | Yes | % | No | % |
| expenditures of | | | | |
| Purchasing/ Renting agri. items/ Inputs | 58 | 97 | 12 | 03 |
| Clothing | 50 | 83 | 10 | 17 |
| Education (fee) | 49 | 82 | 11 | 18 |
| Food of the household | 48 | 80 | 12 | 20 |
| Medical expenses | 39 | 65 | 21 | 35 |
| Marriages/ social events | 21 | 35 | 39 | 65 |

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rest all of the land will be used for vegetable cultivation. The main vegetables grown in this regard i.e. Tomato and cucumber are important vegetables among the Kharif crops whereas reddish and turnip are important vegetables among the Rabi crops”. The second most grown crops were cereals but it was only considered for household consumption and not for income generation. Both qualitative and quantitative data clearly reflecting the exact picture of the situation. Qualitative data are given above inside the inverted comas and the quantitative data are visible in Table 4.

**Household’s produce consumption pattern:** The arrangement which a household adopts to utilize the output of its produced crop is taken as household consumption pattern regarding its produces. The pattern in which the households in the study area consume their produce is directed towards the monetary incentives rather than to buy balance food for the household. It is clearly undergoing a gradual transition so the farming system. In the past the preferred way of farming was subsistence type (Quan, 2009) but now the demand for cash has gone higher and the commercial farming is at premium. The urgent monetary benefits are the aim of the grown produce rather than food which households may be able to use for running its daily activities.

**Conclusions:** Economic access to food was a dominant problem. Majority of the respondents was worried about threat to food security. The apprehension of going food insecure was coped with alternative strategies such as shifting to lower priced food, cutting the intake quantity of nutrients, and borrowing cash to buy food which took them to the more severe level of food insecurity than before. An overwhelming majority also showed the possibilities of reduction in food production inputs i.e. fertilizers and other agricultural items, and reducing food of household if the prices were expected to rise suddenly at any time. Furthermore, a shift from producing staple food crops to cash crops was strongly evident. Major production related constraints were lack of irrigation water, low access to market and high cost of fertilizers when the vegetables were turning to be the main crop of the local small level farmers. All the produce was sold for earning mainly cash income of the household as responded by majority of the food producers. As majority of the respondents selected ‘yes’ option for six out of ten questions asked by the researcher in Table 2, so it is argued that overall food insecurity was prevalent 60% among the respondents.

**Acknowledgements:** The authors acknowledge the support of Swiss National Center of Competence in Research NorthSouth (NCCR NS). Without support of NCCR NS it would have been impossible for the researcher to conduct research in these marginalized areas.

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